

# Welcome to the Institute for Nuclear Theory

- The INT is a national resource founded in 1990 and funded by the US Department of Energy and the University of Washington.
- It provides an environment for scientists to advance the frontiers of subatomic physics and make connections to developments in other areas of physics, astrophysics and cosmology.
- Scientific meetings at the INT attracts about 400 visitors annually to enable breakthrough discoveries through collaborations.

2025

<b>COLLABORATION MEETING</b>  MARCH 3 - MARCH 14, 2025 <b>Meeting on Nucleosynthesis Uncertainties (COLLAB)</b> Chris Fryer, Falk Herwig, Erika Holmbeck, Alison Laird, Frank Timmes <i>Sponsored by JINA/CeNAM and CNLS</i>  <a href="#">MORE →</a>	<b>WORKSHOP</b>  MARCH 17 - MARCH 21, 2025 <b><u>Chiral EFT: New Perspectives (25-92W)</u></b> Ubirajara van Kolck, Vincenzo Cirigliano, Thomas Papenbrock, Maria Piarulli  <a href="#">MORE →</a>	<b>COLLABORATION MEETING</b>  MARCH 24 - MARCH 25, 2025 <b>NP3M Collaboration Meeting (COLLAB)</b> Andrew W. Steiner <i>Sponsored by NP3M and NSF</i>
<b>PROGRAM</b>  MARCH 31 - APRIL 11, 2025 <b><u>Co-design for Fundamental Physics in the Fault-Tolerant Era (IQUS)</u></b>  <i>Sponsored by IQUS</i>  <a href="#">MORE →</a>	<b>PROGRAM</b>  MAY 12 - JUNE 20, 2025 <b><u>CFNS-INT Joint Program: Precision QCD with the Electron Ion Collider (25-1)</u></b> Renee Fatemi, Huey-Wen Lin, Werner Vogelsang <i>Joint with the Bridging Theory Workshop</i>  <a href="#">MORE →</a>	<b>WORKSHOP</b>  JUNE 2 - JUNE 6, 2025 <b><u>BNL-INT Joint Workshop: Bridging Theory and Experiment at the Electron-Ion Collider (25-93W)</u></b> Alessandro Bacchetta, Wim Cosyn, Felix Ringer, Anna Stasto <i>Joint with the Precision QCD Program</i>  <a href="#">MORE →</a>
<b>PROGRAM</b>  JUNE 23 - JULY 25, 2025 <b><u>Compressible Turbulence: From Cold Atoms to Neutron Star Mergers (25-2a)</u></b> Aurel Bulgac, Gregory Eyink, Michael Forbes, Nir Navon <i>Embedded workshop dates: June 23-27</i>  <a href="#">MORE →</a>	<b>PROGRAM</b>  AUGUST 18 - AUGUST 29, 2025 <b><u>Many-body Quantum Magic (MBQM-2025)</u></b>  <i>Sponsored by IQUS</i>  <a href="#">MORE →</a>	<b>PROGRAM</b>  SEPTEMBER 2 - OCTOBER 3, 2025 <b>From Colliders to the Cosmos: Exploring the Extremes of Matter (25-2b)</b> N. Andersson, C. Ratti, B. Sathyaprakash <i>Joint with the Nuclear Physics in Mergers Workshop</i>
<b>WORKSHOP</b>  SEPTEMBER 8 - SEPTEMBER 12, 2025 <b>Nuclear Physics in Mergers - Going Beyond the Equation of State (25-94W)</b> A. Haber, E. Most, C. Raithel <i>Joint with the Colliders Program</i>	<b>PROGRAM</b>  OCTOBER 27 - NOVEMBER 7, 2025 <b>The QCD Critical Point: Are We There Yet? (25-3a)</b> H. Caines, V. Skokov, A. Sorensen	<b>PROGRAM</b>  DECEMBER 1 - DECEMBER 12, 2025 <b>Open Quantum Systems: Dissipative Dynamics from Quarks to the Cosmos (25-3b)</b> Y. Akamatsu, G. Barenboim, D. Boyanovsky, N. Brambilla, X. Yao

# Reminders and Announcements

**Safety:** Please read the welcome material and be aware of building evacuation procedures.

**Conduct:** Please read and follow the INT code of conduct. If you experience or witness behavior that violates the INT code of conduct, please report it promptly.

**Exit Report:** Provide us feedback (positive and negative).

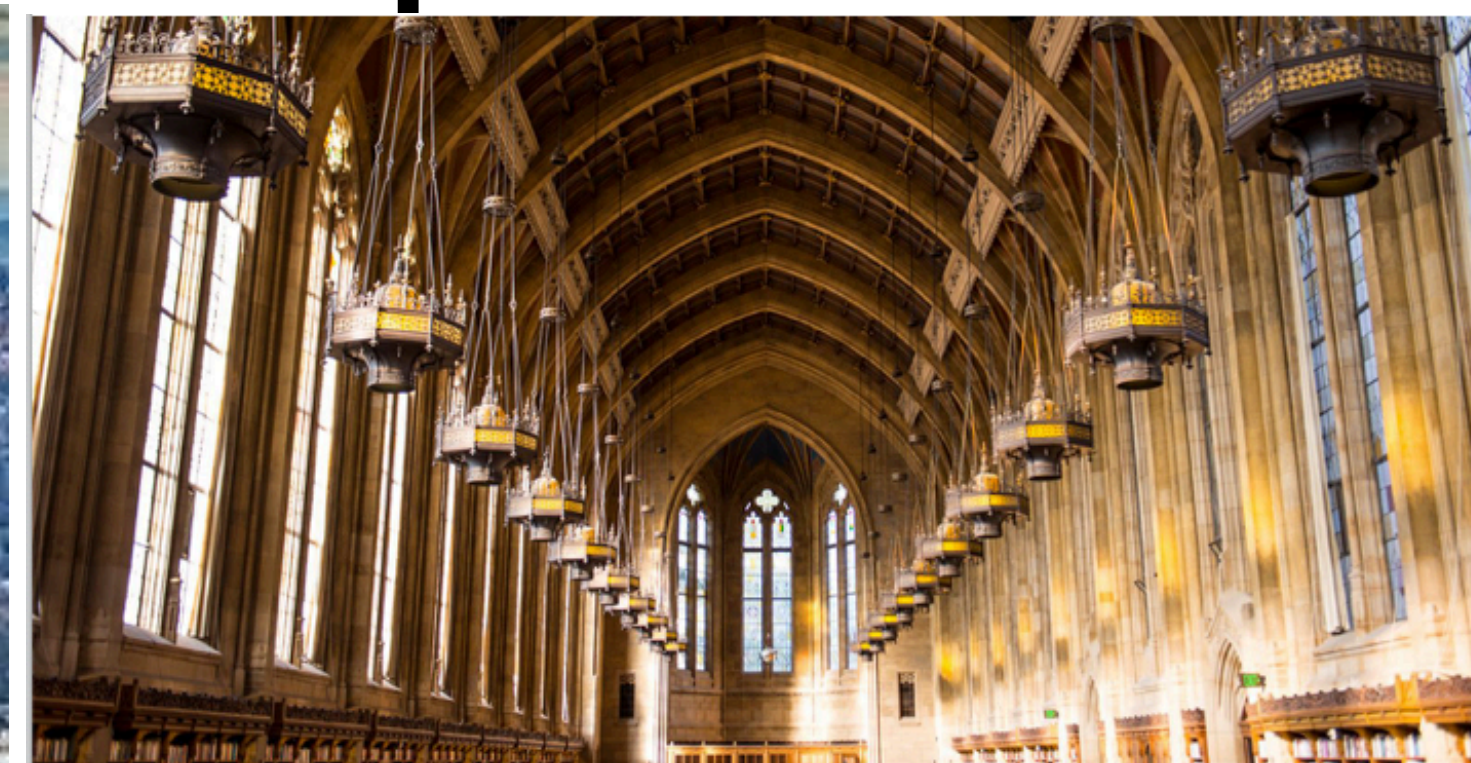
**Pre-print #'s:** Request an INT preprint number and acknowledge the INT in publications that result from interactions during your visit.

**Proposing INT programs:** Consider proposing programs and workshops in 2026 and 2027. The deadline is scheduled for July 2026.

**Collaboration meetings:** We can host collaboration meetings. We provide offices, meeting space, and assistance with arranging lodging, among other services, but we cannot offer financial support.

**Friends of the INT:** Please consider donating to the 'Friends of the INT' fund. This discretionary fund helps support activities that make the INT a fun place to work and visit.

# Take a stroll: The UW Campus is beautiful!



SUZZALLO LIBRARY



The Burke Museum



DRUMHELLER FOUNTAIN



Urban Horticulture Center

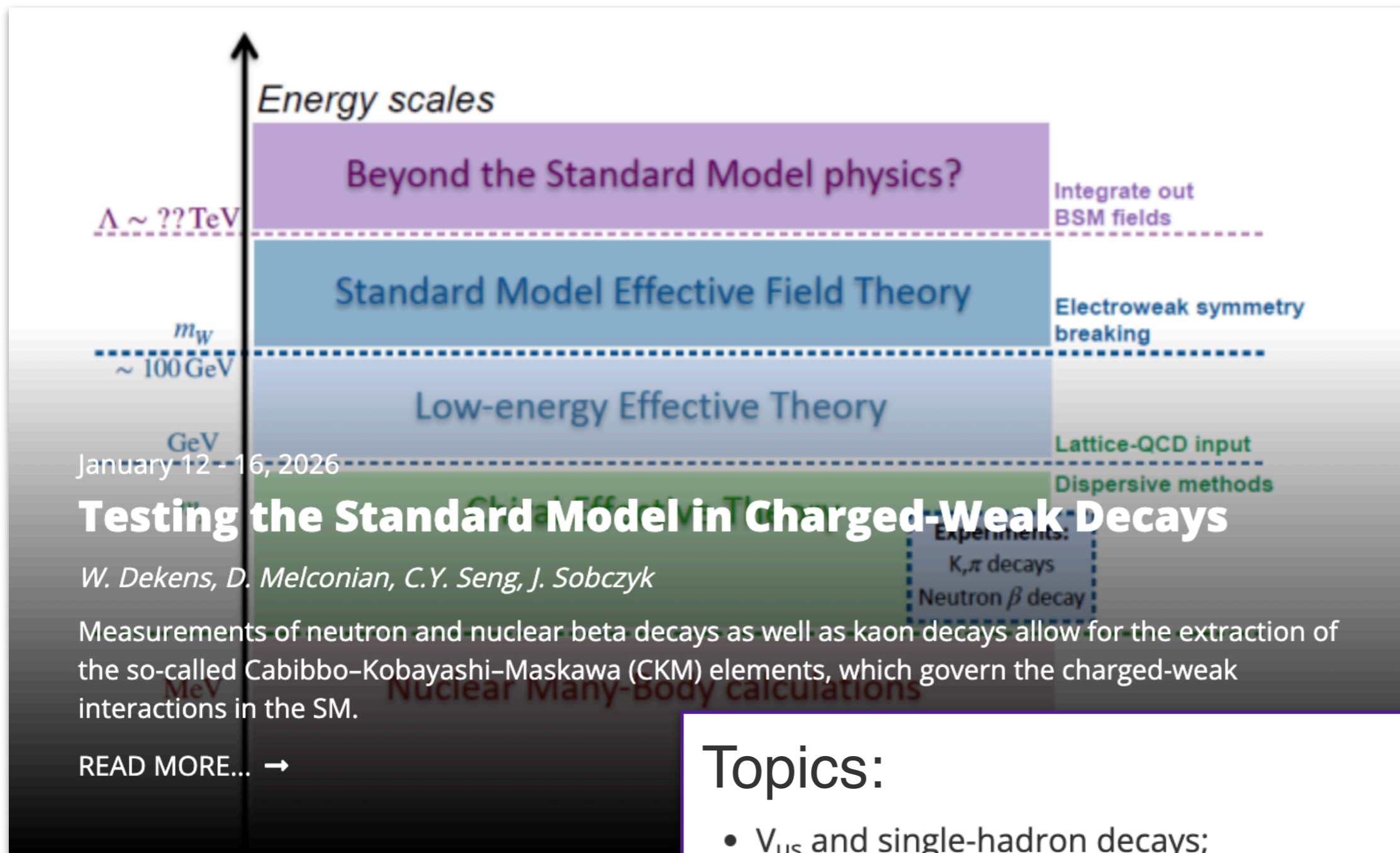


Henry Art Gallery



Arboretum

# Testing the Standard Model in Charged-Weak Decays



## Topics:

- $V_{us}$  and single-hadron decays;
- $V_{us}$  and nuclear decays; Strangeness-changing processes and  $V_{us}$ ;
- Global analysis, implications for BSM physics;
- Future prospects, writing session

# Schedule

## Mon: BSM & neutron decay

Monday, January 12, 2026		
Start Time	Presentation Title	Presenter
8:00 AM	Check-In	
8:45 AM	Welcome to the INT & Introductions	Wouter Dekens
9:00 AM	Beta decays as a probe of new physics	Vincenzo Cirigliano
9:45 AM	TBA	Maria Dawid
10:30 AM	Coffee Break	
11:00 AM	TBA	Benedetta Belfatto
11:45 AM	Latest constraints on light sterile neutrino from the KATRIN Experiment	Shailaja Mohanty
12:30 PM	Lunch	
2:00 PM	TBA	Chen-Yu Liu
2:45 PM	Neutron beta-decay experiments at Los Alamos	Steven Clayton
3:30 PM	Coffee Break	
4:00 PM	Discussion	

## Tue: neutron decay

Tuesday, January 13, 2026		
Start Time	Presentation Title	Presenter
9:00 AM	The gamma-W box correction to $V_{ud}$ with dispersion relations: certainties and uncertainties	Misha Gorshteyn
9:45 AM	Overview of Neutron Decay Angular Correlation Measurements (with some comments about beta energy-dependent observables)	Albert Young
10:30 AM	Coffee Break	
11:00 AM	TBA	Zack Hall
11:45 AM	TBA	Dinko Pocanic
12:00 PM	Lunch	
2:00 PM	TBA	Thomas Richardson
2:45 PM	TBA	Wolfgang Schreyer
3:30 PM	Coffee Break	
4:00 PM	Discussion	

## Wed: Superalowed

Wednesday, .	
Start Time	Presenter
9:00 AM	Emanuele Mereghetti
9:45 AM	Garrett King
10:30 AM	
11:00 AM	Nadezda Smirnova
11:45 AM	Xu Feng
12:30 PM	
2:00 PM	Regan Zite
2:45 PM	
3:30 PM	
4:00 PM	

## Thursday, January 15, 2026

Start Time	Presentation Title	Presenter
9:00 AM	TBA	TBA
9:45 AM	Penning trap beta-decay Q value measurements for BSM Physics searches	Matthew Redshaw
10:30 AM	Coffee Break	
11:00 AM	Impact for Rare Kaon decays of Testing the Standard Model in Charged-Weak Decays	Giancarlo D'Ambrosio
11:45 AM	Testing CKM Unitarity with the NA62 Experiment	Victor Shang
12:30 PM	Lunch	
2:00 PM	TBA	Emilie Passemar
2:45 PM	TBA	Xin-Yu Tuo
3:30 PM	Coffee Break	
4:00 PM	Discussion	

## Thu: Vus & kaon decays

## Friday, January 16, 2026

Start Time	Presentation Title	Presenter
10:00 AM	New Ideas & Short Talks	
11:15 AM	Coffee Break	
11:45 AM	The recent measurement of the neutrino electron correlation coefficient $a$ in free neutron beta decay with the aSPECT spectrometer	Stefan Baessler
12:30 PM	PIONEER: A Next Generation Rare Pion Decay Experiment	Quentin Buat
1:15 PM	Lunch	
2:30 PM	Discussion & white paper writing	

## Fri: ongoing/future work & writing session

# Some Logistics

## Talks:

- All talks/discussions/coffee breaks in, or next to, this room
- Please send your title/slides to Megan ([mjb47@uw.edu](mailto:mjb47@uw.edu)) well before the start of your session

## Lunch/dinner:

- Mostly on your own for lunch/dinner
  - Lots of options around “the ave.”
- Workshop dinner (self-funded) on Wednesday evening (time/location TBA)
  - Please sign up ***before lunch today***

## Discussions:

- Will discuss the talks of each day: please add any topics/questions to [\*\*this google-doc\*\*](#)
- Two “special” discussion topics:
  - Tuesday: Theory consensus for neutron decay
  - Friday:  $V_{ud}$  &  $V_{us}$  (VUDU) alliance