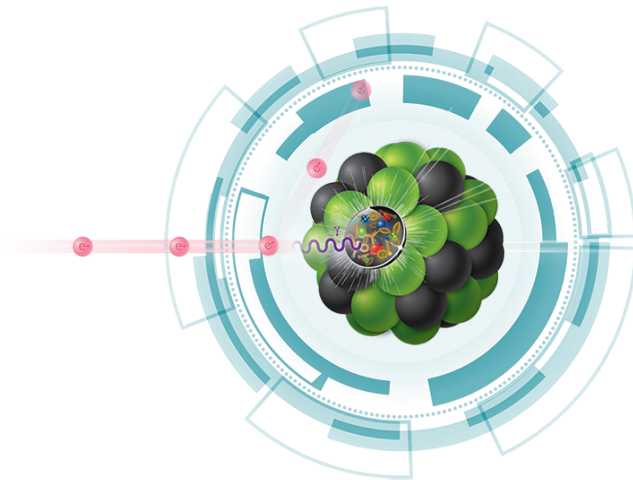


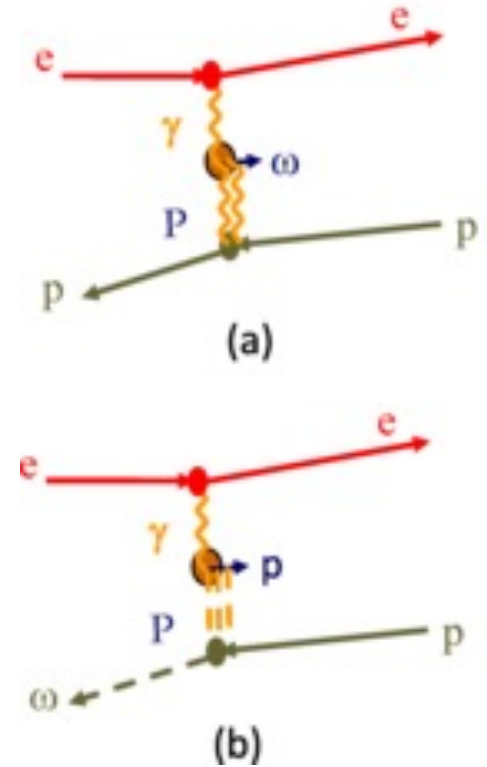
UC DAVIS

Nuclear Physics Group Overview and Plans for EIC



EIC Activities at UCD

- Main project over the past year:
- Study on backwards vector meson production at EIC
 - Connected to physics of baryon stopping in hadron colliders
 - See Zach Sweger's talk on Tue
 - Collaboration between LBNL and UCD
 - Started through funding with LBNL-LDRD and UCOP pilot funds
 - Continuation of Sam Heppelmann's work on detector simulations. Zach Sweger on backward vector meson production.
 - On LBNL side: Spencer Klein and Xin Dong (heavy quarks).
 - Study has been published, hot off the press!
 - [PRC 106, 015204 \(2022\)](#) Published July 15, 2022.
 - Follow up study: DVCS
- Connection with UCD interests:
 - Baryon stopping: Cebra
 - Heavy quarkonium production: Calderon de la Barca



UCD Plans: Faculty hire

- Our group sees hiring a junior faculty member that will work in EIC as a strategic move.
- Current departmental plan sent to the Dean of Letters and Science:
 - Includes an open search and notes that a joint UCD-LBNL is a possibility to be investigated.
- We would like to meet with stakeholders from UCD and LBNL that can help bring this on mass shell.

UCD Plans: Postdoc Hire

- We plan to hire a postdoc that will work $\frac{1}{2}$ time on EIC
 - $\frac{1}{2}$ of the salary will come from the UCOP EIC funds
 - $\frac{1}{2}$ of the salary will be from UCD NSF grant
 - For work in either STAR or CMS.

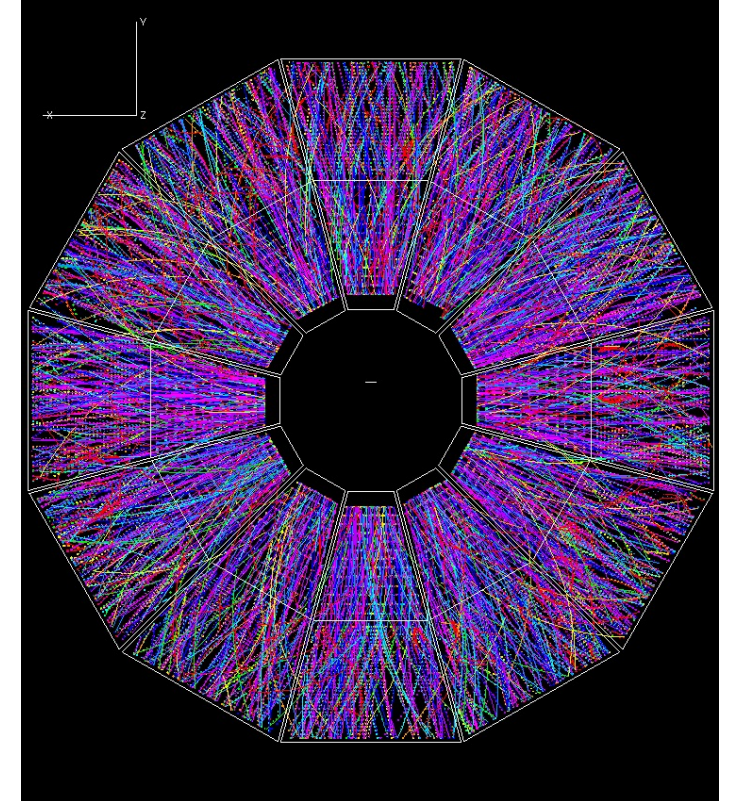
- We will make a job posting soon.

UCD Plans: Graduate students

- Current personnel: Zach Sweger
 - Will be stationed at LBNL in the next academic year.
 - Will work on a study of backward-DVCS.
 - Clear path on how to do this based on the study of backward vector-meson production.
 - Most of Zach's time will be spent on RHIC FXT study of net-proton fluctuations for his PhD thesis.
- Future students:
 - Plan to have all new incoming students do some work for EIC.
 - We'd like to discuss with Nikki Apadula how our students can contribute to hardware.
 - Short stays at LBNL? Summer stays? Scheduled visits during the week? TBD.
 - Incoming students for 2022-2023:
 - Matthias Labonte
 - Just finished a master's thesis at Niels Bohr Inst. on flow fluctuations in pPb with ALICE.
 - Can skip many 1st year classes: Expect get involved in research quickly.
 - Andrew Liggett
 - Just finished undergrad degree at UCD, worked on centrality determination for FXT data.
 - Will get involved in research around 2023-2024.

UCD Plans: Interests

- Integrated Tracking
- Calderon and Cebra's primary expertise focuses on the software and data analysis of the Time Projection Chamber.
 - Calderon was part of the team that developed the original tracking packages for STAR.
 - Cebra authored early versions of the vertexing code.
 - EIC tracking code and simulations seemed to be the area where we could best contribute.
 - Continue LBNL close collaboration:
 - Similar interests in tracking and proximity.



Summary

- 2021-2022 LDRD and UCOP project on backwards vector meson production completed.
 - [PRC 106, 015204 \(2022\)](#) Published July 15, 2022.
 - Will continue with backwards DVCS over the next 6-months.
- Plan to continue work with LBNL on detector development with new graduates students
 - First in line: Matthias Labonte
- Continue discussions between UCD Physics Dept. and LNBL Management on joint faculty hire.

