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# Higgs 2025

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JiJi Fan<sup>1</sup>, **Loukas Gouskos**<sup>1,†</sup>, Ulrich Heintz<sup>1</sup>, Julie Hogan<sup>1,3</sup>, Greg Landsberg<sup>1</sup>,  
Jennifer Roloff<sup>1</sup>, Gabriella Sciolla<sup>2</sup>, and Eleni Vryonidou<sup>4</sup>

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- We at **Brown University** are delighted to host the Higgs 2025 conference
  - ▶ The conference will occur from October 27 to 31, 2025, linking high energy with the Halloween festivities.
  - ▶ The venue is the Museum of Rhode Island School of Design
  - ▶ In Providence, Rhode Island, USA.



# Providence

- Providence is known for its rich history, vibrant arts scene, and culinary excellence.
  - ▶ Among the oldest cities in New England, it is blended with former textile industrial buildings and its busy port.
- The city offers many lodging options:
  - ▶ from boutique hotels to budget-friendly accommodations.
    - ◆ **Negotiated rates with Brown and RISD**
- Proximity to major transportation hubs:
  - ▶ a hassle-free experience for international and domestic delegates.
  - ▶ Reachable by plane and train
- Many activities to enrich the conference experience:



- ▶ Historic walking tours, renowned theaters, waterfront parks, and gourmet dining...
- ▶ *and ghost tours right around Halloween*



# Brown University

- Founded in 1764, Brown University

- ▶ Seventh-oldest institution of higher education in the USA.
- ▶ First Ivy League university to accept students regardless of religious affiliation,
- ▶ Open curriculum, introduced in the 1970s,
- ▶ Students to design their courses of study.

- Physics department faculty members includes:

- ▶ Two Nobel laureates, two American Association for the Advancement of Science Fellows, six Sloan Research Fellows, six American Physical Society Fellows, a Guggenheim Fellow, and two Presidential Early Career Award recipients for Scientists and Engineers.



- ▶ Our High Energy Experimental group: by Profs. Gaetano Barone, Matt Le Blanc, Dave Cutts, Loukas Gouskos, Ulrich Heintz, Greg Landsberg, and Jennifer Roloff plays a leading role in the CMS experiment of the LHC
- ▶ Our group comprises one research scientist, five postdoctoral researchers, two engineers, and about twenty graduate and undergraduate students.

# Venue

- The prestigious **Rhode Island School of Design** museum.
  - ▶ Founded in 1877 as a coeducational institution aiming at the general training & advancement of public Art Education,
  - ▶ The venue for plenaries and parallels will be in the newly renovated annex
  - ▶ Adjacent to the historic buildings of Brown University.
  - ▶ It provides state-of-the-art conference facilities.
  - ▶ Symbolizes the interdisciplinary collaboration between science and art.
  - ▶ Hosting the conference at an art museum provides a unique, unbeatable experience that encourages creativity.
- Breaks and Catering:
  - ▶ Provided by alumni of the Culinary School of Providence in collaboration with RSID and Brown Catering Services.



# Organisation

- Diverse team driven by the local members of the Brown community and augmented by external collaborators to increase the plurality of the effort.
  - ▶ A blend of young and senior researchers
  - ▶ From the northeast, USA and European collaborations.
  - ▶ Theory & experiment (both ATLAS and CMS) locally and overseas.

- Northeast USA:



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- ▶ Brown University:
  - ▶ Stephon Alexander (theory),
  - ▶ **Gaetano Barone** (CMS),
  - ▶ Matt LeBlanc (CMS),
  - ▶ Dave Cutts (CMS),
  - ▶ Jiji Fan (theory),
  - ▶ **Loukas Gouskos** (CMS),
  - ▶ Ulrich Heintz (CMS),
  - ▶ Julie Hogan (CMS),
  - ▶ Greg Landsberg (CMS),
  - ▶ Jennifer Roloff (CMS)



- ▶ Brandeis University:
  - ▶ Aram Apyan (ATLAS),
  - ▶ Gabriella Sciolla (ATLAS)

- Europe:



- ▶ University of Manchester:
  - ▶ Eleni Vryonidou (theory)

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- Europe:



- ▶ University of Manchester:
  - ▶ Eleni Vryonidou (theory)
- ▶ Long-standing research tenure in exploring the theoretical nature of the Higgs boson, focusing on Effective Field Theory extensions of the Standard Model.
- ▶ Support from an overseas person in the organization will provide a nonlocal point of view on organizational matters, widening our susceptibility to the needs of attendants traveling from overseas.

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- Northeast USA:



- ▶ Brandeis University:
  - ▶ Aram Apyan (ATLAS),
  - ▶ Gabriella Sciolla (ATLAS)
- ▶ Long-standing tenure researching the Higgs boson properties and the electroweak sector at the LHC,
  - ▶ focusing primarily on Diboson decays and lepton final states.
- ▶ Hold the institutional responsibilities of the ATLAS experiment for projecting and constructing the ATLAS silicon strip tracker for Phase 2 of the LHC.



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  - ▶ **Loukas Gouskos** (CMS),
  - ▶ Ulrich Heintz (CMS),
  - ▶ Julie Hogan (CMS),
  - ▶ Greg Landsberg (CMS),
  - ▶ Jennifer Roloff (CMS)
- ▶ Major contributors to in critical aspects of the CMS:
  - ▶ Silicon strip tracker and the hadron calorimeter operations
  - ▶ Researching and developing Phase 2 HL-LHC upgrades for the outer tracker and the endcap calorimeter.
- ▶ R&D cutting-edge technologies for future particle physics experiments.
- ▶ Understanding with precision the structure of the Higgs potential by investigating single, double Higgs, and triple Higgs productions.
- ▶ Synergy with QCD and top quark programs
- ▶ Focusing on the intersection of high-energy physics and cosmology, investigating the links between the electroweak potential and inflation.

# Conclusions

- We are grateful to the Uppsala team for a delightful Higgs2024 organization.
  - ▶ Thanks to Elin Bergeås Kuutmann, Rikard Enberg, Arnaud Ferrari (chair), Rebeca Gonzalez Suarez, Stefano Moretti, Harri Waltari, Axel Gallén, and Yong Sheng Koay
  - ▶ Many thanks to the International Organising Committee and to the Program Committee
- We are at exciting times for hosting the 2024 and 2025 conferences
  - ▶ Bridging the end of the third data-taking period, Run 3 of the LHC, and the dawn of the High-Luminosity LHC era.
  - ▶ We expect Higgs2025 to continue to play a pivotal role in discussing a wealth of LHC Run 3 results and setting the field's directions for the years to come through all the delegates.

October 27 to 31, 2025 at the Rhode Island School of Design Museum in Providence USA



Additional material.