Jesse Diaz Thaler

Curriculum Vitae
(Updated June 11, 2026)

Contact Information

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Research in Theoretical Particle Physics

- Data Science and AI/ML
- Collider Physics and QCD
- Beyond the Standard Model

Employment

January 2010–Present **Massachusetts Institute of Technology**
MIT Center for Theoretical Physics – a Leinweber Institute
William and Emma Rogers Professor, *2026–Present*
Professor of Physics, *2021–Present*
Associate Professor of Physics with Tenure, *2017–2021*
Associate Professor of Physics, *2015–2017*
Assistant Professor of Physics, *2010–2015*

July 2009–December 2009 **Lawrence Berkeley National Laboratory**
Theoretical Physics Group
Physicist Postdoctoral Fellow

July 2006–June 2009 **University of California, Berkeley**
Miller Institute for Basic Research in Science
Miller Research Fellow

Degrees

Fall 2002–Spring 2006 **Harvard University**
Ph.D., Physics, *June 2006*
A.M., Physics, *June 2004*
Thesis: "Symmetry Breaking at the Energy Frontier"
Advisor: Nima Arkani-Hamed

Fall 1998–Spring 2002 **Brown University**
Sc.B., Math/Physics, *May 2002*
Advisor: Antal Jevicki

Leadership

- Director, NSF Institute for Artificial Intelligence and Fundamental Interactions (IAIFI), *August 2020–Present (on sabbatical August 2025–July 2026)*

Visiting Positions

- Institut des Hautes Études Scientifiques (IHES), *August 2025–July 2026*
- Institut de Physique Théorique (IPhT), *August 2025–July 2026*
- Harvard Center for the Fundamental Laws of Nature, *September 2018–August 2019*

Affiliations

- MIT Center for Theoretical Physics – a Leinweber Institute (CTP-LI), *January 2010–Present*
- MIT Laboratory for Nuclear Science (LNS), *January 2010–Present*
- MIT Statistics and Data Science Center (SDSC), *January 2020–Present*
- MIT Institute for Data, Systems, and Society (IDSS), *January 2020–Present*

Honors

- William and Emma Rogers Professorship, *MIT, 2026*
- Humboldt Research Award, *Alexander von Humboldt Foundation, 2026*
- Schlumberger Chair for Mathematical Sciences, *Institut des Hautes Études Scientifiques, 2025–2026*
- APS Fellow, *American Physical Society, 2022*
- Simons Investigator in Physics, *Simons Foundation, 2022–2027*
- Fermilab Distinguished Scholar, *Fermi National Accelerator Laboratory, 2018–2020*
- Simons Fellowship in Theoretical Physics, *Simons Foundation, 2018*
- Frank E. Perkins Award for Excellence in Graduate Advising, *MIT, 2017*
- Harold E. Edgerton Faculty Achievement Award, *MIT, 2016*
- Buechner Faculty Award for Teaching, *MIT Physics Department, 2014*
- Buechner Faculty Award for Undergraduate Advising, *MIT Physics Department, 2013*
- Sloan Research Fellowship, *Alfred P. Sloan Foundation, 2013*
- Kavli Frontiers Fellow, *Kavli Foundation, 2012*
- Presidential Early Career Award for Scientists and Engineers, *White House, 2012*
- Class of 1943 Career Development Professorship, *MIT, 2012–2015*
- Early Career Research Award, *U.S. Department of Energy, Office of Science, 2011–2016*
- Miller Research Fellowship, *University of California, Berkeley, 2006–2009*
- Giorgio Gamberini Dissertation Prize, *Scuola Normale Superiore di Pisa, 2007*
- Merit Fellowship, *Harvard Faculty of Arts and Sciences, 2006*
- Goldhaber Prize, *Harvard Physics Department, 2005*
- Graduate Research Fellowship, *National Science Foundation, 2002–2005*

UROP Students Supervised

Undergraduate Research Opportunities Program, MIT

- Canis Li '28: *Spring 2025, Fall 2025, Spring 2026*
- Nipun Dour '27: *Fall 2024, Spring 2025, Summer 2025, Fall 2025*
- Marshall Taylor '26: *Summer 2025*
  After MIT: Physics Ph.D. Candidate, *Columbia*
- Ammar Fayad '25: *Summer 2023, Summer 2024*
- Max Tan '25: *Spring 2023, Summer 2023*
  After MIT: EECS M.Eng. Candidate, *MIT*
- Mohit Dighamber '23: *Fall 2022, Spring 2023*
  After MIT: EECS M.Eng., *MIT*
  Currently: Software Engineer, *Google*
- Octavio Vega '22: *Spring 2021, Summer 2021, Fall 2021*
  After MIT: Research Assistant, *University of Hamburg*
  Currently: Physics Ph.D. Candidate, *University of Illinois, Urbana-Champaign*
- Nishat Protyasha '23: *Summer 2020, Fall 2020, Spring 2021, Summer 2021*
  FUTURE of Physics Participant, *Caltech, 2020*
  After MIT: EECS M.Eng., *MIT*
  Currently: Research Assistant, *MIT Media Lab*
- Serhii Kryhin '22: *Spring 2020, Summer 2020, Spring 2021, Summer 2021* (see below)
- Christopher Miller '21: *Fall 2020*
  After MIT: Technical Instructor II, *MIT*
- Debaditya Pramanik '21: *Spring 2020, Summer 2020, Fall 2020* (see below)
- Ziqi Zhou '20: *Fall 2018*
  After MIT: Physics Ph.D. Candidate, *Stony Brook*
- Talya Klinger '20: *Spring 2017*
  After MIT: Marshall Scholar, *University of Cambridge and Cardiff University*
  Currently: Physics Ph.D. Candidate, *Caltech*
- Radha Mastandrea '19: *Spring 2017, Fall 2017, Spring 2018, Summer 2018* (see below)
- Eleanor Hall '18: *Spring 2017, Summer 2017, Fall 2017* (see below)
- Matthew Burns '18: *Fall 2014, Spring 2015*
- Kevin Zhou '17: *IAP 2016, Spring 2016, Summer 2016, Fall 2016, Spring 2017*
  Joel Matthew Orloff Award for Outstanding Research, *MIT Physics Department, 2017*
  After MIT: Marshall Scholarship, *U. Cambridge and U. Oxford*
  Currently: Postdoctoral Researcher, *UC Berkeley*
- Aashish Tripathee '17: *Spring 2015, Summer 2015, Fall 2015, IAP 2016, Spring 2016, Summer 2016, Fall 2016* (see below)
- Trung Phan '15: *Spring 2014, Summer 2014* (see below)
- T.J. Wilkason '15: *Fall 2013, Spring 2014, Summer 2014* (see below)
- Mobolaji Williams '13: *Fall 2010, Spring 2011, Summer 2012* (see below)
- Dustin Katzin '12: *Fall 2011, IAP 2012* (see below)

- Tucker Chan '12: *Summer 2011, Fall 2011, Spring 2012* (deceased)
  After MIT: Physics Ph.D. Candidate, *Stanford*
- Ken Van Tilburg '11: *Summer 2010, Fall 2010* (see below)

B.S. Student Theses Supervised

- Serhii Kryhin, *B.S. 2022*
  Thesis: "Application of Unsupervised Machine Learning for Event Classification"
  Morse/Orloff Research Award, *MIT Physics Department, 2022*
  After MIT: Physics Ph.D. Candidate, *Harvard*
- Debaditya Pramanik, *B.S. 2021*
  Thesis: "Collinear Supergravity at Linear Order"
  After MIT: Physics Ph.D. Candidate, *Princeton*
- Radha Mastandrea, *B.S. 2019*
  Thesis: "Analyzing CMS Open Collider Data through Topic Modeling"
  Joel Matthew Orloff Award for Outstanding Service, *MIT Physics Department, 2019*
  Physics Research Fellowship, *Heising-Simons Foundation, 2018*
  FUTURE of Physics Participant, *Caltech, 2018*
  After MIT: Marshall Scholarship, *U. Cambridge*
  Currently: Schmidt AI Fellow, *U. Chicago*
- Eleanor Hall, *B.S. 2018*
  Thesis: "Photon Isolation and Jet Substructure"
  Joel Matthew Orloff Award for Outstanding Service, *MIT Physics Department, 2017*
  After MIT: Physics Ph.D. Candidate, *U.C. Berkeley*
- Aashish Tripathee, *B.S. 2017*
  Thesis: "Jet Substructure at the Large Hadron Collider"
  Philip Morse Memorial Award, *MIT Physics Department, 2017*
  After MIT: Physics Ph.D., *U. Michigan*
  Currently: Postdoctoral Researcher, *U. Michigan*
- Trung Phan, *B.S. 2015*
  Thesis: "Relativistic Quantum Fields in Theoretical Physics"
  After MIT: Physics Ph.D., *Princeton*
  Currently: Assistant Professor, *Claremont Colleges*
- T.J. Wilkason, *B.S. 2015*
  Thesis: "Exclusive Cone Jet Algorithms for High Energy Particle Colliders"
  Joel Matthew Orloff Award for Outstanding Service, *MIT Physics Department, 2015*
  After MIT: Physics Ph.D., *Stanford*
  Currently: Senior Quantum Engineer, *Atom Computing*
- Mobolaji Williams, *B.S. 2013*
  Thesis: "Pseudo-Goldstino to Gravitino Decay: An Implication of Multiple Supersymmetry Breaking"
  After MIT: Physics Ph.D., *Harvard*
  Currently: Data Scientist, *AE Studio*
- Dustin Katzin, *B.S. 2012*
  Thesis: "The DarkLight Experiment: Searching for the Dark Photon"
  After MIT: Part III, *University of Cambridge*
  Currently: Software Engineering Team Lead, *Bloomberg*

- Lin Fei, *B.S. 2011*
  Thesis: "Dark Matter Dynamics in the Early Universe"
  After MIT: Physics Ph.D., *Princeton*
- Ken Van Tilburg, *B.S. 2011*
  Thesis: "Identifying Boosted Objects with N-subjettiness and Linear k-means Clustering"
  Apker Award Finalist, *American Physical Society, 2011*
  Joel Matthew Orloff Award for Outstanding Research in Physics, *MIT Physics Department, 2011*
  After MIT: Physics Ph.D., *Stanford*
  Currently: Assistant Professor, *Stanford*

M.Eng. Student Theses Supervised

- Raymond Wynne, *M.Eng. 2023*
  Thesis: "Anomaly Detection in Collider Physics via Factorized Observables"
  After MIT: Physics Ph.D. Candidate, *Caltech*
- Nilai Sarda, *M.Eng. 2020*
  Thesis: "On Anomaly Detection in Particle Accelerators" *(jointly advised with Justin Solomon)*
  Johnson Artificial Intelligence and Decision Making Thesis Award, *MIT EECS Department, 2020*
  After MIT: Researcher, *D.E. Shaw Group*
  Currently: Algorithm Developer, *Hudson River Trading*
- Preksha Naik, *M.Eng. 2019*
  Thesis: "Exploring the Space of Jets with CMS Open Data"
  After MIT: Physics Ph.D. Candidate, *Caltech*

Ph.D. Students Supervised

- Gregorio de la Fuente Simarro, *anticipated Ph.D. 2028*
- Pamela Pajarillo, *anticipated Ph.D. 2028*
- Sean Benevedes, *anticipated Ph.D. 2026*
  Thesis: "Building Models and Model Building: Machine Learning Uncertainties for Collider Physics and Dynamical Solutions to the Hierarchy Problem"
  After MIT: Postdoctoral Researcher, *Georgia Tech*
- Rikab Gambhir, *Ph.D. 2025*
  Thesis: "Metrics, Muons, Moments, Models, Machine Learning, Measurements, and More: A Manifesto on Collider Physics"
  MIT Prize for Open Data (Honorable Mention), *MIT Libraries and School of Science, 2022*
  After MIT: Postdoctoral Researcher, *U. Cincinnati*
- Samuel Alipour-fard, *Ph.D. 2025*
  Thesis: "Particles Inside Particles: The Flow of Energy in Quarks, Gluons, and Jets"
- Patrick Komiske, *Ph.D. 2021*
  Thesis: "Machine Learning for High-Energy Collider Physics"
  After MIT: Researcher, *PDT Partners*
  Currently: Research Scientist, *River Run Trading*

- Eric Metodiev, *Ph.D. 2020*
  Thesis: "Energy Flow in Particle Collisions"
  After MIT: Research Scientist, *Renaissance Technologies*
- Benjamin Elder, *Ph.D. 2018*
  Thesis: "Jet Fragmentation at the LHC"
  After MIT: Cognitive Software Developer, *IBM*
  Currently: Research Scientist, *IBM*
- Lina Necib, *Ph.D. 2017*
  Thesis: "Boosting (In)direct Detection of Dark Matter"
  Vazquez Award for Outstanding Research, *MIT Physics Department, 2016*
  After MIT: Fairchild Postdoctoral Scholar, *Caltech*
  Currently: Assistant Professor, *MIT*
- Yonatan Kahn, *Ph.D. 2015*
  Thesis: "Forces and Gauge Groups Beyond the Standard Model"
  Andrew M. Lockett III Memorial Fund Award, *MIT Physics Department, 2014*
  J.J. and Noriko Sakurai Dissertation Award, *American Physical Society, 2016*
  After MIT: Postdoctoral Researcher, *Princeton*
  Currently: Assistant Professor, *U. Toronto*
- Daniele Bertolini, *Ph.D. 2014*
  Thesis: "Electroweak Symmetry Breaking in the Era of the Higgs Boson Discovery"
  LHC-TI Graduate Fellowship, *LHC Theory Initiative, 2013*
  After MIT: Postdoctoral Researcher, *U.C. Berkeley*
  Currently: Machine Learning Scientist, *Unlearn*
- Zoe Thomas, *Ph.D. 2014*
  Thesis: "Supersymmetry at the Dawn of the LHC Era"
  After MIT: Postdoctoral Researcher, *U. Minnesota*
  Currently: Applied Research Mathematician, *Department of Defense*
- Francesco D'Eramo, *Ph.D. 2012*
  Thesis: "Hot and Dark Matter" *(jointly advised with Krishna Rajagopal and Hong Liu)*
  Vazquez Award for Outstanding Research, *MIT Physics Department, 2011*
  After MIT: Miller Research Fellow, *U.C. Berkeley*
  Currently: Associate Professor, *U. Padova*

Postdoctoral Researchers Supervised

- Kevin Langhoff, CTP Postdoctoral Researcher, *Fall 2025–Spring 2028*
- Xiaoyuan Zhang, Pappalardo Fellow, *Fall 2025–Spring 2028*
- So Chigusa, CTP Postdoctoral Researcher, *Fall 2024–Spring 2027*
- Kyle Lee, CTP Postdoctoral Researcher, *Fall 2022–Spring 2025*
  Wu-Ki Tung Award for Early Career Research on QCD, *CTEQ Collaboration, 2025*
  After MIT: Postdoctoral Researcher, *Yale*
- Cari Cesarotti, CTP Postdoctoral Researcher, *Fall 2022–Spring 2025*
  J.J. and Noriko Sakurai Dissertation Award, *American Physical Society, 2023*
  Science 30 Under 30, *Forbes, 2024*

Leona Woods Distinguished Postdoctoral Lectureship, *Brookhaven National Laboratory, 2024*
After MIT: Postdoctoral Researcher, *CERN*

- Sokratis Trifinopoulos, SNSF Postdoc.Mobility Fellow, *Fall 2022–Spring 2024*
  CTP Postdoctoral Researcher, *Spring 2024–Spring 2025*
  After MIT: SNSF Postdoc.Mobility Return Grantee, *CERN*
- Siddharth Mishra-Sharma, IAIFI Fellow, *Fall 2021–Spring 2024*
  After MIT: Member of Technical Staff, *Anthropic*
  Currently: Assistant Professor, *Boston U.*
- Lena Funcke, CTP Postdoctoral Researcher, *Fall 2021–Fall 2022*
  After MIT: Assistant Professor, *U. Bonn*
- Katelin Schutz, Pappalardo Fellow, *Fall 2019–Fall 2020*
  NASA Einstein Fellow, *Spring 2021*
  After MIT: Assistant Professor, Canada Research Chair, *McGill*
- Pouya Asadi, CTP Postdoctoral Researcher, *Fall 2019–Spring 2022*
  After MIT: Postdoctoral Researcher, *U. Oregon*
- Bernhard Mistlberger, Pappalardo Fellow, *Fall 2018–Spring 2020*
  After MIT: Associate Staff Scientist, *SLAC*
  Currently: Staff Scientist, *SLAC*
- Frédéric Dreyer, Early Postdoc.Mobility Fellow, *Fall 2016–Spring 2018*
  After MIT: Postdoctoral Researcher, *Oxford*
  Currently: Senior Machine Learning Scientist, *Prescient Design*
- Yotam Soreq, Rothschild Fellow, *Fall 2015–Spring 2018*
  After MIT: Postdoctoral Researcher, *CERN*
  Currently: Associate Professor, *Technion*
- Benjamin Safdi, Pappalardo Fellow, *Fall 2014–Spring 2017*
  After MIT: Assistant Professor, *U. Michigan*
  Currently: Associate Professor, *U.C. Berkeley*
- Wei Xue, CTP Postdoctoral Researcher, *Fall 2014–Spring 2017*
  After MIT: Postdoctoral Fellow, *CERN*
  Currently: Assistant Professor, *U. Florida*
- Simone Marzani, LHC Theory Initiative Postdoctoral Fellow, *Fall 2014–Spring 2015*
  After MIT: Assistant Professor, *U. Buffalo*
  Currently: Associate Professor, *U. Genova*
- Gilly Elor, CTP Postdoctoral Researcher, *Fall 2013–Spring 2016*
  After MIT: Postdoctoral Researcher, *U. Oregon*
  Currently: Research Fellow, *UT Austin*
- Duff Neill, Pappalardo Fellow, *Fall 2012–Spring 2015*
  CTP Postdoctoral Researcher, *Spring 2015–Spring 2016*
  After MIT: Director's Fellow, *Los Alamos National Laboratory*
  Currently: Staff Scientist, *Los Alamos National Laboratory*
- Andrew Larkoski, CTP Postdoctoral Researcher, *Fall 2012–Spring 2015*
  Wu-Ki Tung Award for Early Career Research on QCD, *CTEQ Collaboration, 2017*
  After MIT: LHC Theoretical Initiative Postdoctoral Fellow, *Harvard*
  Currently: Associate Editor, *Physical Review D*

- Matthew McCullough, Simons Postdoctoral Fellow, *Fall 2011–Spring 2014*
  After MIT: COFUND Fellowship, *CERN*
  Currently: Staff Scientist, *CERN*
- Keith Rehermann, CTP Postdoctoral Researcher, *Fall 2010–Spring 2012*
  After MIT: Consultant, *Ab Initio Software Corporation*
  Currently: Software Engineer, *Chainlink Labs*

Visitors Hosted

- Anne Galda, Fulbright Scholarship, *Spring 2025*
  Project: "Unveiling the Discovery Potential for ALPs using Machine Learning"
  Home Institution: *Johannes Gutenberg University*
- Nathaniel Santiago, MIT Summer Research Program, *Summer 2024*
  Project: "Graph Neural Network Particle Reconstruction for DUNE's Prototype Near Detector"
  Home Institution: *Northeastern Illinois U.*
- Yiding Song, Research Science Institute, *Summer 2023*
  Project: "Towards an Understanding of Scientific Data with Multimodal Language Models"
  Home Institution: *Harrow School*
- Edward Gu, Research Internship, *Summer 2023*
  Home Institution: *Cornell*
- Xinyue (Stella) Wu, MIT Summer Research Program, *Summer 2023*
  Project: "Measuring the Size of Quark and Gluon Jets in CMS Open Data"
  Home Institution: *U. Rochester*
- Brian Nord, MIT MLK Visiting Professor, *Fall 2022–Spring 2023*
  Home Institution: *Fermilab and U. Chicago*
- Kaća Bradonjić, Visiting Artist, *Fall 2022*
  Home Institution: *Hampshire College*
- Sergio Diaz, MIT Summer Research Program, *Summer 2022*
  Project: "Determination of the W Mass Parameter using Machine Learning"
  Home Institution: *U. Maryland, Baltimore County*
- Pedro Rivera-Cardona, MIT Summer Research Program, *Summer 2021*
  Project: "Implementation of U(1) Group Symmetry on Energy Flow Networks"
  Home Institution: *U. Puerto Rico, Mayaguez*
- Athis Osathapan, Research Internship, *Spring 2021, Summer 2021, Summer 2022*
  Home Institution: *Bowdoin College*
- Shira Jackson, MIT Summer Research Program, *Summer 2020*
  Project: "Estimating the Energy Mover's Distance with Exclusive Jet Clustering"
  Home Institution: *U. Cincinnati*
- Andrew Turner, Tushar Shah and Sara Zion Physics Fellowship, *2018–2019*
  Home Institution: *MIT (Washington Taylor)*
- Maximilian Henderson, International Research Opportunities Programme, *Summer 2018*
  Home Institution: *Imperial College London*
- Edward Hirst, International Research Opportunities Programme, *Summer 2018*
  Home Institution: *Imperial College London*

- Rahim Leung, International Research Opportunities Programme, *Summer 2017*
  Home Institution: *Imperial College London*
- Markus Schulze, Visiting Postdoc, *Fall 2015*
  Home Institution: *CERN*
- Alexis Romero, MIT Summer Research Program, *Summer 2015*
  Project: "Jet Physics Measurements on CMS Open Data"
  Home Institution: *San Diego State University*
- Nayara Fonseca, FAPESP Fellowship, *Spring 2014–Fall 2014*
  Home Institution: *U. Sao Paulo, Brazil (Gustavo Burdman)*

Teaching Experience

- 8.831 — Supersymmetric Quantum Field Theories
  Lecture: *Spring 2017, Fall 2019, Fall 2024*
- 8.398 — Selected Topics in Graduate Physics
  Instructor: *Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023, Spring 2024*
- 8.03 — Physics III, Waves and Vibrations
  Recitation: *Fall 2020*
- 8.044 — Statistical Physics I
  Recitation: *Spring 2020*
- 8.05 — Quantum Mechanics II
  Instructor (MITx-based 8.051): *Spring 2018*
  Recitation: *Fall 2010, Fall 2012*
- 8.033 — Relativity
  Lecture: *Fall 2017*
  Recitation: *Fall 2016*
- 8.02 — Physics II, Electricity and Magnetism
  TEAL (studio class): *Spring 2014, Spring 2015, Spring 2016*
- 8.012 — Physics I, Classical Mechanics
  Recitation: *Fall 2014*
- 8.06 — Quantum Mechanics III
  Lecture: *Spring 2011, Spring 2012, Spring 2013*
  Recitation: *Spring 2010*

Advising

- MIT Physics Ph.D. Thesis Committees:
  - Luca Lavezzo *(Christoph Paus, in progress)*
  - Noah Paladino *(Philip Harris, in progress)*
  - Jessica Fry *(Lindley Winslow, in progress)*
  - Shing Yan (Kobe) Li *(Washington Taylor, in progress)*
  - Zhuo Chen *(Marin Soljacic, April 2026)*
  - Ziming Liu *(Max Tegmark, July 2025)*

  - Enrique Toloza *(Mark Harnett & Mehran Kardar, February 2025)*
  - Ouail Kitouni *(Mike Williams, August 2024)*
  - Stella Schindler *(Iain Stewart, August 2024)*
  - Evgenii Kniazev *(Vladan Vuletic, June 2024)*
  - Yitian Sun *(Tracy Slatyer, April 2024)*
  - Cristian Zanoci *(Mikhail Lukin & Aram Harrow, May 2023)*
  - Eva Huang *(Salvatore Vitale, January 2023)*
  - Gregory Ridgway *(Tracy Slatyer, June 2022)*
  - Patrick Fitzpatrick *(Tracy Slatyer & David Kaiser, July 2021)*
  - Joseph Johnston *(Lindley Winslow & Joseph Formaggio, May 2021)*
  - Chih-Liang Wu *(Tracy Slatyer, April 2021)*
  - Constantin Weisser *(Mike Williams, March 2021)*
  - J. Owen Andrews *(Ibrahim Cisse, November 2020)*
  - Gherardo Vita *(Iain Stewart, August 2020)*
  - Jasmine Brewer *(Krishna Rajagopal, July 2020)*
  - Hongwan Liu *(Tracy Slatyer, May 2019)*
  - Charles Epstein *(Richard Milner, August 2018)*
  - Nicholas Rodd *(Tracy Slatyer, April 2018)*
  - David Hernandez *(Edmund Bertschinger, April 2018)*
  - Aram Apyan *(Markus Klute, November 2016)*
  - Daniel Roberts *(Allan Adams, April 2016)*
  - Ian Moult *(Iain Stewart, April 2016)*
  - Daniel Kolodrubetz *(Iain Stewart, April 2016)*
  - Mingming Yang *(Christoph Paus, January 2015)*
  - Shawn Henderson *(Peter Fisher, July 2013)*
  - Teng Ma *(Boleslaw Wyslouch, May 2013)*
  - Kevin Sung *(Steven Nahn, March 2013)*
  - Christopher Jones *(Janet Conrad, June 2012)*
  - Riccardo Abbate *(Iain Stewart, May 2012)*
  - Abolhassan Vaezi *(Xiao-Gang Wen, January 2011)*
  - Georgia Karagiorgi *(Janet Conrad, July 2010)*
- MIT Physics Graduate Academic Advisor, *Fall 2017–Present*
  - Anticipated Ph.D. 2029: Aneca Sun, Adam Wills
  - Anticipated Ph.D. 2027: Alexander Schmidhuber, Manu Srivastava, Rachel Steinhorst
  - Ph.D. 2025: Ryan Abbott
  - Ph.D. 2024: Bruno Scheihing Hitschfeld, Stella Schindler, Annie Wei
  - Ph.D. 2023: Eric Anschuetz
  - Ph.D. 2022: Gregory Ridgway, Samuel Leutheusser
  - Ph.D. 2020: Jasmine Brewer
- MIT Physics Undergraduate Academic Advisor, *Fall 2011–Present*
  - Class of 2024/2025: Omar Abdelghani, Nishant Dhankar, Chirag Falor, Gosha Geogdzhayeva, Lily Moseni, Dylan Raphael, David Suarez, Chris Viets
  - Class of 2018/2019/2020: Robert Arnott, Zachary Bogorad, Hannah Field, Rodmy Paredes Alfaro, Saranesh Prembabu, Joshua Rhodes, Kevin Tang, Michael Winer

  - Class of 2014/2015: Allison Christian, Jay Lawhorn, Joseph Perricone, Jeffrey Prouty, Melih Ucer, Pranjal Vachaspati, Prashanth Venkataram
- MIT First-Year Advisor, *Fall 2019–Spring 2020*
  - Class of 2023: Richter Brzeski, Megha Maran, Catalina Monsalve Rodriguez, Dylan Weber
- External Ph.D. Examiner:
  - Pim de Haan *(Max Welling & Taco Cohen, U. Amsterdam, May 2025)*
  - Pedro Cal *(Wouter Waalewijn, U. Amsterdam, September 2021)*
  - Thea Aarrestad *(Ben Kilminster, U. Zurich, March 2019)*
  - Ignacio Garcia Garcia *(Eduardo Ros & Marcel Vos, U. Valencia, December 2016)*
  - Brian Walsh *(Tobias Golling, Yale, February 2013)*
  - Travis Martin *(Thomas Gregoire & Stephen Godfrey, Carleton U., August 2012)*
- External Mentoring:
  - Ilias Cholis, PI Academy for Research and Engagement, *Fall 2018–Fall 2019*

Internal Service

- MIT Faculty
  - MIT Rapid Response Task Force on Large Scale Proposal Development, *Summer 2024*
  - MIT Faculty Committee on Curricula, *Fall 2017–Spring 2020*
- MIT Physics
  - MIT Physics Major Design Committee, *Chair: Spring 2025*
  - MIT Physics Council, Member at Large, *Fall 2024–Spring 2025*
  - MIT Physics Ad Hoc Committee on Graduate Student Professional Development, *Spring 2023*
  - MIT Physics Graduate Admissions Committee, *Spring 2021, Spring 2024, Spring 2025*
  - MIT Physics Communic.8 Faculty Liaison, *Fall 2020–Fall 2023*
  - MIT Physics Promotion Committee, *Fall 2019; Chair: Fall 2020, Fall 2021, Fall 2022*
  - MIT Physics Pappalardo Fellowships Executive Committee, *Fall 2016, Fall 2017*
  - MIT Physics Colloquium Committee, *Spring 2010–Spring 2012; Chair: Fall 2012–Spring 2014*
  - MIT Physics Part II Qualifying Written Exam Committee, *Spring 2012–Spring 2013; Chair: Fall 2013–Spring 2014*
  - MIT Physics Part II Qualifying Written Exam Grading Committee, *September 2010, January 2020*
- MIT Laboratory for Nuclear Science (LNS)
  - MIT LNS Advisory Group, *Fall 2017, Spring 2020–Spring 2024*
  - MIT LNS Colloquium Committee, *Fall 2015–Spring 2017; Chair: Fall 2017–Spring 2018*
- MIT Center for Theoretical Physics - a Leinweber Institute (CTP-LI)
  - MIT CTP Part III Oral Qualifying Exam Committee, *Spring 2015–Spring 2017, Fall 2022–Spring 2023*
  - MIT CTP Faculty Mentor, *Spring 2021–Present*
  - MIT CTP Faculty Search Committee, *Fall 2017, Fall 2021, Fall 2023; Chair: Fall 2019*
  - MIT CTP Deputy Group Leader in High-Energy Physics, *Spring 2020–Present*
  - MIT CTP Visitor Coordinator, *Fall 2016–Summer 2025*
  - MIT CTP Nuclear/Particle Seminar Committee, *Fall 2010–Fall 2016, Fall 2020–Spring 2021, Fall 2022–Spring 2025*

  - MIT CTP Postdoc Selection Committee, *Fall 2009–Fall 2022*
- MIT Schwarzman College of Computing (SCC)
  - MIT GenAI Consortium (MGAIC) Grant Review, *Spring 2025*
  - MIT SCC Tayebati Postdoctoral Fellowship Selection, *Spring 2025, Spring 2026*
- MIT Statistics and Data Science Center (SDSC)
  - MIT Physics, Statistics, and Data Science (PhysSDS) Committee, *Co–Chair: Fall 2020–Present*
- MIT Social and Ethical Responsibilities of Computing (SERC)
  - MIT SERC Seed Grant Selection Committee, *Spring 2024*
- MIT Electrical Engineering and Computer Science (EECS)
  - MIT EECS Junior Faculty Mentoring Committee, *Spring 2024–Present*

External Service

- Aspen Center for Physics (ACP)
  - General Member, *Summer 2020–Summer 2030*
  - Public Lectures Committee, *Chair: Summer 2025*
  - Admissions Committee, *Summer 2024*
  - Nominations Committee, *Summer 2021; Chair: Summer 2022; Ex officio: Summer 2023*
  - Summer Program Committee, *Summer 2020*
  - Conference Liaison, "Theoretical Physics for Machine Learning", *Winter 2023*
  - Workshop Organizer, "Interplay of Fundamental Physics and Machine Learning", *Summer 2022*
  - Workshop Organizer, "The LHC Awakens: A New Energy Frontier", *Summer 2016*
  - Workshop Organizer, "Year One of the LHC", *Summer 2011*
  - Conference Organizer, "New Data from the Energy Frontier", *Winter 2011*
- American Physical Society (APS)
  - Fellow, *2022–Present*
  - Sakurai Dissertation Award Selection Committee, *Fall 2016; Vice Chair: Fall 2022; Chair: Fall 2023*
  - Member, *2002–Present*
- High Energy Physics Advisory Panel (HEPAP)
  - Particle Physics Project Prioritization Panel (P5), *December 2022–December 2023*
  - HEPAP Member (Second Term), *April 2024–March 2027 (Ended October 2025)*
  - HEPAP Member, *August 2021–March 2024*
  - HEPAP Presentation, "The NSF AI Institute for Artificial Intelligence and Fundamental Interactions", *December 2020*
  - HEPAP Presentation, "The High Energy Physics Landscape in 2019", *May 2019*
- Early Career and Strategic Planning Events
  - Lead Organizer, "NSF Workshop on the Future of AI and the Mathematical and Physical Sciences", *MIT, March 2025*
  - Summer School Organizer, "TASI 2024: The Frontiers of Particle Theory", *CU Boulder, June 2024*
  - Topical Convener, "Collider Phenomenology", *Snowmass Theory Frontier, July 2021, July 2022*
  - Local Organizing Committee, "Rising Stars in Physics", *MIT, April 2018*
- Machine Learning for Jet Physics (ML4Jets)

- Advisory Committee, "ML4Jets 2026", *Vienna, September 2026*
- Advisory Committee, "ML4Jets 2025", *Caltech, August 2025*
- Advisory Committee, "ML4Jets 2024", *LPNHE, Paris, November 2024*
- Advisory Committee, "ML4Jets 2023", *DESY, November 2023*
- Advisory Committee, "ML4Jets 2022", *Rutgers, November 2022*
- Advisory Committee, "ML4Jets 2021", *Heidelberg, July 2021*
- Advisory Committee, "ML4Jets 2020", *New York, January 2020*

- Statistics, Data Science, and Machine Learning Events
  - Scientific Committee, "PHYSTAT: Statistics Meets Machine Learning", *Imperial College London, September 2024*
  - Organizer, "Machine Learning at GGI", *Galileo Galilei Institute, August/September 2022*
  - Organizer, "CMS Open Data for Theorists", *Fermilab/Virtual, September 2020*
  - Advisory Committee, "Machine Learning for Particle Physics", *Mainz, May 2020 → June 2021*
- International Workshop on Boosted Object Phenomenology (BOOST)
  - Advisory Committee and Ombuds Team (with Ayana Arce), "Boost 2022", *Hamburg, August 2022*
  - Advisory Committee and Ombuds Team (with Ayana Arce), "Boost 2021", *Online, August 2021*
  - Advisory Committee and Ombuds Team (with Ayana Arce), "Boost 2020", *Hamburg, July 2020*
  - Local Organizing Committee, "Boost 2019", *MIT, July 2019*
  - Advisory Committee, "Boost 2018", *Paris, July 2018*
  - Advisory Committee, "Boost 2017", *Buffalo, July 2017*
  - Advisory Committee, "Boost 2016", *Zurich, July 2016*
  - Advisory Committee, "Boost 2015", *Chicago, August 2015*
  - Advisory Committee, "Boost 2014", *London, August 2014*
  - Advisory Committee, "Boost 2013", *Flagstaff, August 2013*
  - Advisory Committee, "Boost 2012", *Valencia, July 2012*
  - Advisory Committee, "Boost 2010", *Oxford U., June 2010*
- QCD and Jet Physics Events
  - Jet Convener, "Physics at TeV Colliders", *Les Houches, June 2017*
  - Jet Convener, "Physics at TeV Colliders", *Les Houches, June 2015*
  - Organizer, "Boston Jet Physics", *Harvard/MIT, January 2014*
  - Organizer, "Boston Jet Physics", *Harvard/MIT, January 2011*
- Collider and BSM Physics Events
  - Advisory Committee, "BLV 2017", *Cleveland, May 2017*
  - Scientific Organizing Committee, "Lattice for BSM Physics 2017", *Boston, April 2017*
  - Organizer, "Gearing up for LHC13", *Galileo Galilei Institute, Fall 2015*
  - Conference Program Committee, "PANIC 2011: Particle and Nuclei International Conference", *Boston, July 2011*
  - Organizer, "Implications of First LHC Data", *MIT/Berkeley, August 2010*
- Advisory Boards
  - Lab Advisory Board, Lawrence Berkeley National Laboratory, *2026–2028*
  - Visiting Committee Co-Chair, Division of Physics, Mathematics and Astronomy, *Caltech, March 2025*
  - Selection Committee, Margot and Tom Pritzker Prize for AI in Science Research Excellence, *Pritzker Foundation, 2024, 2026*

- International Scientific Advisory Board, AI for Science and Science for AI (AISSAI) Center, *French CNRS, 2022–Present*
- International Advisory Committee, Machine Learning Physics, *JSPS/MEXT Grant-in-Aid for Transformative Research Areas, 2022–2026*
- Science Advisory Board, USQCD Collaboration, *Spring 2013–Fall 2016*
- Fellowship Selection Committee, LHC Theory Initiative, *Fall 2013–Fall 2014; Chair: Fall 2014*

- Journal Editing
  - Editorial Board, PRX Intelligence, *Spring 2026–Fall 2028*
  - Editorial Board, Journal of High Energy Physics, *Fall 2019–Summer 2025*
  - Editorial College, SciPost Physics, *Fall 2019–Spring 2024*
  - Co-Topic Editor, "Efficient AI in Particle Physics and Astrophysics", *Frontiers in Artificial Intelligence, Spring 2022*
- Peer Review
  Physical Review Letters; Journal of High Energy Physics; Physical Review D; SciPost Physics; Neural Information Processing Systems; Machine Learning: Science and Technology; Journal of Cosmology and Astroparticle Physics; Physics of the Dark Universe; Nuclear Physics B; Physics Letters B; European Physical Journal C; Journal of Physics G; Physics Reports; Annals of Physics; Reviews of Modern Physics; Particle Data Group
- Funding Agency Review
  U.S. Department of Energy (DOE); National Science Foundation (NSF); European Research Council (ERC); Heising-Simons Foundation; Research Corporation for Science Advancement (Cottrell); The Royal Society; Helmholtz Association; Swiss National Science Foundation; Natural Sciences & Engineering Research Council of Canada; Israel Science Foundation; Pazy Foundation; Netherlands Organisation for Scientific Research; German Academic Exchange Service (DAAD); French National Research Agency; Hungarian National Research, Development & Innovation Office

Public Engagement

- Artificial Intelligence Advocacy
  - "The Future of Artificial Intelligence and the Mathematical and Physical Sciences (AI+MPS)", Report from a National Science Foundation Workshop, *September 2025*
  - "Transcript of Physics, AI, and the Future of Discovery" (with France Córdova, Walter Copan, Valerie Browning, and Evgeni Gousev), *Physics Today 77(11):30 (2024)*
  - "Institute for Artificial Intelligence and Fundamental Interactions (IAIFI): Infusing physics intelligence into artificial intelligence" (with Mike Williams and Marisa LaFleur), *AI Magazine, February 2024*
  - "Deep Learning + Deep Thinking = Deeper Understanding" (with Mike Williams), *Physics@MIT Journal, Fall 2023*
  - "Expanding the Space of Machine Learning for Physics", *APS Topical Group on Data Science Newsletter, Winter 2023*
  - "Designing an AI Physicist", Opinion Viewpoint, *CERN Courier, September 2021*
- Open Data Advocacy
  - "Slow and Steady" (with Matthew Strassler), Correspondence, *Nature Physics 15:725 (2019)*

- "Guest Case Study 6: Particle Collisions" (with Felice Frankel), Picturing Science and Engineering, *MIT Press, 2018*
- "The Future of Particle Physics is 'Open"', Guest Blog Post, The Cylindrical Onion, *CMS Experiment, December 2017*

- Particle Physics Advocacy
  - "Exploring the Quantum Universe: Pathways to Innovation and Discovery in Particle Physics", *Report of the Particle Physics Project Prioritization Panel (P5), December 2023*
  - "Snowmass Theory Frontier: Collider Phenomenology (TF07)" (with Fabio Maltoni and Shufang Su), *Report for the US Community Study on the Future of Particle Physics, October 2022*

Publications and Preprints

See http://www.jthaler.net/research for these publications organized by topic. Conference proceedings and incidental authorship are listed at http://www.jthaler.net/cv. Following the convention in particle physics, all authors are listed alphabetically, except those indicated by [§].

[*] = Paper arising from a supervised Ph.D. thesis
[†] = Paper arising from a supervised B.S. or M.Eng. thesis
[§] = Authors ordered by contribution

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[143] Ezequiel Alvarez, Sean Benevedes, Manuel Szewc, and Jesse Thaler, *Many Wrongs Make a Right: Leveraging Biased Simulations Towards Unbiased Parameter Inference* [arXiv:2604.02219].

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Invited Presentations

See http://www.jthaler.net/cv for a complete list of talks, including invited seminars, plenary talks, and additional workshop and conference talks.

Colloquia

- "Centaur Science: Adventures in AI+Physics"
  Physics Colloquium, *University of Genova, May 2026*
  Hans Jensen Lecture, *Heidelberg, April 2026*
  Physics Colloquium, *University of Geneva, March 2026*
  Colloquium, *CERN, February 2026*

- "Descending into the Modular Bootstrap"
  Theoretical Physics Colloquium, *Oxford, May 2026*
  DAMTP Colloquium, *Cambridge, April 2026*
- "Centaur Science: Particle Physics meets Machine Learning"
  Colloquium, *NIKHEF, December 2025*
  Physics Colloquium, *NYU, April 2025*
  Lauritsen Memorial Lecture, *Caltech, March 2025*
  Physics Colloquium, *U. Wisconsin, Madison, February 2025*
  Colloquium, *U. Puerto Rico, Mayagüez, February 2025*
  Physics Colloquium, *U. New Hampshire, November 2024*
  Physics and Astronomy Colloquium, *U. Minnesota, November 2024*
- "The Hidden Geometry of Particle Collisions"
  Physics Colloquium, *UMass Amherst, May 2024*
  Computer Science Colloquium, *Tufts, November 2023*
  Particle Physics Colloquium, *KIT Karlsruhe, November 2020* (virtual)
  Theory Colloquium, *CERN, May 2020* (virtual)
- "Particle Physics through the Lens of Machine Learning"
  Physics and Astronomy Colloquium, *Northwestern, March 2023*
  Physics Colloquium, *Technion, January 2023*
  Physics Colloquium, *Tel Aviv, January 2023*
  Physics Colloquium, *Brown, November 2022*
- "The Geometry of Particle Collisions: Hidden in Plain Sight", Physics Colloquium, *Brandeis, February 2022*
- "Collision Course: Particle Physics meets Machine Learning"
  Physics Colloquium, *U.C. San Diego, May 2021* (virtual)
  Physics and Astronomy Colloquium, *U. New Mexico, April 2021* (virtual)
  Physics Colloquium, *U.C. Santa Barbara, April 2021* (virtual)
  Physics Colloquium, *Northern Illinois University, February 2021* (virtual)
  Nordita Colloquium, *Stockholm University, February 2021* (virtual)
  Physics Colloquium, *University of Chicago, February 2021* (virtual)
  Physics Colloquium, *All Israel, November 2020* (virtual)
  Physics Colloquium, *Harvard, November 2020* (virtual)
  Physics Colloquium, *University of Maryland, October 2020* (virtual)
  Physics Colloquium, *Case Western Reserve University, November 2019*
  Physics and Astronomy Colloquium, *Rice University, October 2019*
  Physics Colloquium, *Oakland University, October 2019*
  Physics Colloquium, *Tufts University, September 2019*
- "The Future is Open: Adventures with Public Collider Data", Colloquium, *Fermilab, September 2020* (virtual)
- "Jet Substructure at the Frontiers of Particle Physics"
  Physics Colloquium, *University of Milan, March 2018*
  Physics Colloquium, *University of Illinois, Urbana-Champaign, October 2017*
- "New Physics Gets a Boost: Jet Substructure at the Large Hadron Collider"
  Colloquium, *Perimeter Institute, May 2017*
  Physics Colloquium, *U.C. Berkeley, April 2017*
  Physics Colloquium, *University of Texas, Austin, March 2017*

Physics Colloquium, *MIT, October 2016*
Physics and Astronomy Colloquium, *University of California, Riverside, October 2016*
Physics Colloquium, *University at Buffalo, September 2016*

- "Jet Substructure: Boosting the Search for New Physics at the LHC"
  Physics Colloquium, *University of Chicago, May 2016*
  Physics Colloquium, *Michigan State University, January 2016*
- "The Rise of Jet Substructure: Boosting the Search for New Physics at the LHC"
  Physics Colloquium, *U.C. Santa Cruz, November 2015*
  Physics Colloquium, *Brandeis, September 2015*
- "The Case for Jet Substructure"
  Physics Colloquium, *Caltech, November 2014*
  Colloquium, *MIT Laboratory for Nuclear Science, April 2014*
- "(Non)perturbative QCD and Jet Substructure"
  Triangle Nuclear Theory Colloquium, *Duke University, March 2014*
  Theory Colloquium, *University of Maryland, October 2013*
- "The Shape of Jets to Come: Boosting the Search for New Physics at the LHC"
  Physics Colloquium, *University of Oregon, May 2013*
  Physics Colloquium, *Cornell University, February 2013*
- "Anticipating New Data from the Energy Frontier", Physics Colloquium, *Brown University, February 2011*
- "The Large Hadron Collider", Physics Colloquium, *Wellesley College, October 2010*
- "The Shape of Jets to Come", Colloquium, *MIT Laboratory for Nuclear Science, February 2010*

Public Lectures

- "Deep Learning + Deep Thinking = Deeper Understanding"
  Spritz of Science, *Il Conventino Firenze, January 2026*
  Chaire Georges Lemaître Public Lecture, *Université catholique de Louvain, November 2025*
  Glicksman Forum, *Brown, May 2025*
- "Centaur Science: Particle Physics meets Machine Learning", Presidential Lecture, *Simons Foundation, December 2024*
- "Opening Keynote (with Eric Mazur)", Education in the Age of Generative AI, *Perusall Exchange, June 2024* (virtual)
- "Predictably Uncertain: A Physicist's Perspective on AI Policy", Off the Record Foreign Policy Association Lecture, *New York City Bar Association, March 2024*
- "Collision Course: Artificial Intelligence meets Fundamental Physics"
  Distinguished Lecture, *National Science Foundation, January 2023* (virtual)
  Keynote Presentation, *Tommy Flowers Network Conference, October 2020* (virtual)
- "Artificial Intelligence Meets Fundamental Physics", MIT Inside Track Master Class, *EmTech Digital, March 2021* (virtual)
- "Listening to the Invisible Universe", Program with A Far Cry: Open Rehearsal of Gravity, *Harvard Education Portal, April 2019*
- "Confronting the Invisible Universe"
  MIT Club of Great Britain Event, *London, May 2018*
  Public Talk, *Aspen Center for Physics, March 2017*

- "The Higgs Boson: Triumph of the Standard Model"
  24th Annual Kavli Frontiers of Science, *National Academy of Sciences, U.C. Irvine, November 2012*
  Lecture Series Committee, *MIT, October 2012*

Lecture Series & Schools

- "Centaur Science: Adventures in AI+Physics", School on Machine Learning and AI Methods at the LHC, *Karachi, Pakistan, July 2026* (virtual)
- "Machine Learning through the Lens of Physics", Learning at the Frontier: Advanced School on Machine Learning for Particle Physics, *AIPHY, June 2026*
- "Machine Learning for Fundamental Physics", Lectures on the Theory of Fundamental Interactions, *GGI, January 2026*
- "Centaur Science: Particle Physics meets Machine Learning", Chaire Georges Lemaître Lectures, *Université catholique de Louvain, November 2025*
- "The (Hidden) Geometry of Particle Collisions", Summer School on Neurosymbolic Programming, *Salem, MA, June 2024*
- "The Coming Decade(s) of Particle Physics", TASI 2024, *CU Boulder, June 2024*
- "The Standard Model", School on Table-Top Experiments for Fundamental Physics, *Perimeter Institute, September 2022*
- "Confronting the Invisible Universe", Intro to Modern Physics, *MIT Lincoln Labs, March 2022*
- "QCD and Collider Physics", Lectures on the Theory of Fundamental Interactions, *GGI, Florence, January 2020*
- "Collider Physics", Cargese 2018 International Summer School, *Corsica, July 2018*
- "Jet Substructure"
  Theoretical and Experimental Issues on Jet Structure at Hadron Colliders, *Kavli IMPU and KEK, January 2017*
  PiTP Summer School, *Princeton, July 2013*
- "Jet Physics", MITP Summer School, *Mainz, July 2016*
- "The Case for Jet Substructure", Theorist of the Month, *DESY, June 2014*
- "Super-tricks for Superspace", TASI Summer School, *C.U. Boulder, June 2012*
- "Little Lessons for a Little Higgs", ICTP Winter School, *Trieste, January 2012*
- "Anticipating New Data from the Energy Frontier", Topic of the Week Lecture Series, *Fermilab, November 2010*
- "Entering the LHC Era", Felix Villars Theoretical Physics Retreat, *MIT CTP, January 2010*

Research Contracts, Grants, and Gifts

- AI Research Institute Renewal, "Institute for Artificial Intelligence and Fundamental Interactions (IAIFI)", *National Science Foundation, 2026–2031* ($24.9M)
- MGAIC Award (with Phiala Shanahan),"Physics Predictions from Physical Generative AI", *MIT Generative AI Impact Consortium, 2025–2026* ($50k)
- Conference Award, "Future of AI and the Mathematical and Physical Sciences (AI+MPS)", *National Science Foundation, 2025* ($100k)

- Partnerships for Research and Education in Physics (PREP) (with UMass Boston),"Partnership for research and training in QUantum, Artificial intelligence, Non-equilibrium physics Theory and Applications (QUANTA)", *National Science Foundation, 2024–2027*
- Expanding AI Innovation through Capacity Building and Partnerships (ExpandAI) (with U. Puerto Rico, Mayagüez),"Innovating AI for efficient and insightful data transformation", *National Science Foundation, 2023–2027*
- Unrestricted Gift, "Interpretation of Multimodal Images from Astronomy", *Google, 2023* ($50k)
- Simons Investigator in Physics, *Simons Foundation, 2023–2028* ($960k)
- AI Research Institute, "Institute for Artificial Intelligence and Fundamental Interactions (IAIFI)", *National Science Foundation, 2020–2025* ($20M)
- Quantum Information Science Research Centers, "Co-design Center for Quantum Advantage (C2QA)", *U.S. Department of Energy, Office of Science, 2020–present*
- MIT-Israel Zuckerman STEM Fund Award (with Tracy Slatyer, Tomer Volansky, Yotam Soreq),"The Quest for Dark Matter Interactions", *MIT International Science and Technology Initiative (MISTI), 2020–2023* ($25.5k)
- PIER Hamburg-MIT Seed Project (with Gregor Kasieczka, Phil Harris, Andreas Hinzmann, Roman Kogler, Iain Stewart),"Probing the Standard Model with Jet Substructure", *Partnership for Innovation, Education and Research (PIER), 2019–2020* (€17k)
- Quantum Information Science (QuantISED) Award (with Aram Harrow),"Quantum Algorithms for Collider Physics", *U.S. Department of Energy, Office of High Energy Physics, 2018–2020* ($264k)
- Simons Fellowship, "Theoretical Investigations In and Beyond the Standard Model", *Simons Foundation, 2018–2019* ($142.8k)
- Comparative Review Funding Award, "Boosting the Search for New Physics at the Frontiers", *U.S. Department of Energy, Office of High Energy Physics, 2016–2017* ($120k)
- The Charles E. Reed Faculty Initiatives Fund, "Boosting Jet Physics with Archival Collider Data", *MIT Research Support Committee, 2015–2017* ($75k)
- MIT-Belgium Seed Fund Award (with Fabio Maltoni),"Beyond the Standard Model at the LHC", *MIT International Science and Technology Initiative, 2013–2014* ($23.1k)
- Sloan Research Fellowship, *Alfred P. Sloan Foundation, 2013–2016* ($50k)
- Global Seed Fund Award (with Iain Stewart, Andre Hoang, Gavin Salam),"Probing a New Energy Frontier with Jets at the Large Hadron Collider", *MIT International Science and Technology Initiative, 2012–2013* ($15k)
- Early Career Research Award, "Interpreting New Data from the Energy Frontier", *U.S. Department of Energy, Office of Science, 2011–2016* ($750k)
- Cooperative Research Agreement, "Laboratory for Nuclear Science, High Energy Physics Program: Task C, Center for Theoretical Physics", *U.S. Department of Energy, Office of Science, 2010–present*

MIT Educational Commons

- Originator of "Flexible P/NR" grading option *(Approved by MIT Faculty, May 2020)*
- Faculty Committees: Large Scale Proposal Task Force; Committee on Curricula (see above)
- UROP Supervision: 24 students (see above)

- First-Year Advising: 4 students (see above)
- Teaching General Institute Requirements (GIR): 8.02 *(Spring 2014, Spring 2015, Spring 2016)*
- MIT School of Science Breakfast Talk, "Deep Learning + Deep Thinking = Deeper Understanding", *October 2024*
- MIT School of Science IET London Event, "Deep Learning + Deep Thinking = Deeper Understanding", *May 2024*
- MIT Visit from Permanent Secretary of Singapore for National Research and Development, "Deep Learning + Deep Thinking = Deeper Understanding", *April 2024*
- MIT Physics Breakfast in Palo Alto, "Deep Learning + Deep Thinking = Deeper Understanding", *March 2024*
- MIT Physics Career Panel, "SPS/PGSC Career Panel", *November 2021*
- MIT Postdoctoral Association Panel Discussion, "Making the Cut - Job Searching During a COVID-19 Economy", *June 2020*
- MIT Graduate Student Council Panel Discussion, "The Nuts and Bolts of Academic Job Search", *July 2018*
- MIT PhysPOP Orientation Lecture, "Implications of the Higgs Boson", *August 2013*
- MIT MISTI Presentation, "The Higgs Boson: Keystone of the Standard Model", *April 2013*
- MIT Astronomical Event Presentation, "Dark Matter Beyond the Standard Model", *October 2012*
- MIT Physics Alumni Breakfast, "Hints of New Physics at the Energy Frontier", *May 2012*
- MIT PhysPOP Orientation Lecture, "Beyond the Standard Model at the Frontiers", *August 2011*
- MIT Physics IAP Lecture, "The LHC Won't Destroy the Planet (But Will Spark a Revolution)", *January 2010*
- Physics@MIT Journal, "Listening for Dark Matter from the Basement of Building 24" (with Lindley Winslow), *Fall 2019*
- MIT Lecture Series Committee, Q&A for "Particle Fever", *September 2014*