

# Curriculum Vitae

## Toyoko J. Orimoto

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### Education

- Dec 2006: Ph.D., Physics, University of California, Berkeley; Thesis Title: “Study of rare B-meson decays related to the CP observable  $\sin(2\beta+\gamma)$  at the BaBar experiment”
- May 2002: M.A., Physics, University of California, Berkeley
- May 2000: B.A., Physics, University of California, Berkeley

### Employment

- Sep 2024 - present: Professor, Northeastern University, Boston, MA
- Sep 2019 - Aug 2024: Associate Professor, Northeastern University, Boston, MA
- Oct 2012 - Aug 2019: Assistant Professor, Northeastern University, Boston, MA
- Oct 2009 - Sep 2012: CERN Fellow, CERN, Geneva, Switzerland
- Sep 2006 - Sep 2009: Robert A. Millikan Postdoctoral Fellow, California Institute of Technology, Pasadena, CA
- May 2001 - Aug 2006: Graduate Student Researcher, UC Berkeley & Lawrence Berkeley National Laboratory, Berkeley, CA

### Awards & Fellowships

- 2023: Northeastern University College of Science Excellence in Teaching Award
- 2013 - 2018: US Department of Energy Early Career Award
- 2009 - 2012: CERN COFUND Fellowship
- 2009: CMS Achievement Award for decisive leadership in ECAL prompt feedback
- 2006 - 2009: Robert A. Millikan Postdoctoral Fellowship in Experimental Physics
- 2000 - 2002 & 2005: UC Berkeley Chancellor’s Opportunity Graduate Fellowship
- 2000: NSF Graduate Fellowship Honorable Mention
- 1996 - 2000: UC Berkeley Chancellor’s Undergraduate Scholarship
- 1996 - 2002 & 2005: Japanese American Women Alumni of UC Berkeley Scholarship

# 1 Research and Scholarship

## 1.1 Current Research Areas

- Experimental Particle Physics
- Exploring the high energy frontier with the Compact Muon Solenoid (CMS) Experiment at the CERN Large Hadron Collider (LHC)
- Upgrading the CMS Experiment for the High-Luminosity phase of the LHC (HL-LHC)
- Discovering or constraining new beyond-the-standard-model (BSM) physics
- Utilizing the newly discovered Higgs boson as a potential portal to further discoveries
- Operating the CMS electromagnetic calorimeter (ECAL), maintaining its excellent performance, and upgrading it for HL-LHC; Serving System Manager of CMS ECAL
- Developing a new precision minimum-ionizing particle (MIP) timing detector (MTD) to bring new capabilities to CMS for HL-LHC
- Planning for next generation of particle accelerators and detectors at the energy frontier

## 1.2 Research Funding

### External (Funded)

- National Science Foundation (Aug 2023-Dec 2026): “Experimental Particle Physics Research at High Energies,” (NSF PHY-2309945), \$2,100,000, co-PI (~ 30%).
- Heising-Simons Foundation: Conference Proposal (Dec 2023 - Nov 2024) - “Addressing the challenges faced by mid-career physics women in collaborations,” co-PI.
- National Science Foundation Conference Proposal (March 2024 - Feb 2025) - “The 12th edition of the Large Hadron Collider Physics Conference (LHCP2024),” \$10,000, co-PI.
- National Science Foundation (Apr 2020-Dec 2026): “U.S. CMS Upgrades for the High-Luminosity Large Hadron Collider,” NSF PHY-1946735 (subaward from Cornell), \$319,318, co-PI (~ 50%).
- National Science Foundation (Aug 2020-Jul 2023): “Experimental Particle Physics Research at High Energies,” NSF PHY-2011848, \$1,860,000, co-PI (~ 20%).
- Department of Energy (Jan 2022-July 2023): “U.S. CMS Common Operations,” (sub-award from FNAL), \$178,508, co-PI (~ 40%).
- Department of Energy (Oct 2019-Dec 2021): “High Luminosity (HL) LHC CMS Detector Upgrade Project,” (sub-award from FNAL), \$12,780, PI (100%).
- National Science Foundation (Aug 2018-Jul 2021): “Exploring the High Energy Frontier with the CMS Electromagnetic Calorimeter,” NSF PHY-1806561, \$660,000, PI (100%).

- Department of Energy Early Career Award (Jul 2013-Jun 2018): “Search for the Higgs and Physics Beyond the Standard Model with the CMS Electromagnetic Calorimeter,” DE-SC0010349, \$750,000, PI (100%).

### Internal (Funded)

- Northeastern University College of Science (Jan 2019 - Jan 2023), Proposed Work and Funding request for ADSE@NEU, \$18,462, co-PI (~ 70%)
- Northeastern University College of Science Professional Network Development (POND) 2018: \$5,000.

## 1.3 Research Leadership

- **CMS Electromagnetic Calorimeter (ECAL):**
  - Sep 2023 - Aug 2025: System Manager for CMS ECAL
  - 2012 - present: CMS ECAL Institution Board Member
  - 2021 - 2023: Deputy System Manager for CMS ECAL
  - 2013 - 2022: CMS ECAL Editorial Board Chair
  - 2009, 2019, 2020, 2022, 2023: CMS ECAL Awards Committee Member
  - 2013 - 2014: CMS ECAL Documentation Coordinator
  - 2012 - 2013: CMS ECAL Editorial Board Member
  - 2009 - 2010: ECAL representative for CMS Physics Validation Team
  - 2008 - 2010: Coordinator for the CMS ECAL Prompt Analysis Group
  - 2006 - 2009: ECAL laser monitoring expert
- **CMS MIP Timing Detector (MTD)**
  - 2018 - present: Chair of MTD Conference Committee
  - 2021 - 2023: US CMS L2 Resources Manager for MTD
  - 2018 - 2023: Member of MTD Editorial Board
  - 2020 - 2022: Member of US MTD Advisory Task Force
  - 2020: Co-editor of US CMS MTD Technical Design Report
  - 2018: Co-editor of US CMS MTD Conceptual Design Report
  - 2018: Manager of US CMS MTD Barrel Timing Layer System Testing
- **CMS Upgrades**
  - 2017: Member of US CMS Phase II Upgrade Advisory Board
- **CMS Physics**

- 2017 - 2019: Member of CMS SUSY Publications Committee
- 2012 - 2013: Dataset Definition Team contact for CMS Higgs Physics Group
- 2011 - 2012: Contact for CMS SUSY Razor diphoton search
- 2009 - 2012: Leader of CMS Exotica high-mass diphoton resonance search
- 2010 - 2011: CMS Physics Dataset Working Group member
- 2011: Photon contact for CMS Exotica Physics Analysis Group
- 2011: Contact for CMS  $e\text{-}\gamma$  Physics Object Group  $\gamma$  misidentification
- 2010: Contact for CMS QCD Photons working group data-MC validation task
- 2010: ECAL contact for CMS QCD Photons working group
- 2010: Coordinator for CMS ECAL/ $e\text{-}\gamma$  supercluster commissioning
- 2008 - 2009: Co-convener of the CMS QCD Photons working group
- Editor of CMS PAS: EXO-11-037, EXO-10-019, EGM-10-001, EXO-09-009
- Member of CMS Analysis Review Committees: HIG-20-002, EXO-16-053, SUS-16-012, EXO-12-047, EXO-12-028

- **CMS Management (General)**

- 2024 - present: Member of Fermilab LHC Physics Center Management Board
- 2023 - present: Northeastern CMS Group Team Leader
- 2023 - present: Representative to the CMS Collaboration Board
- 2020 - 2023: Co-chair of CMS Diversity & Inclusion Office
- 2020 - 2021: Fermilab LHC Physics Center Coordinator Selection Committee
- 2020: US CMS Constitution Review Committee
- 2018 - 2020: Member of CMS Diversity Office
- 2014 - 2022: Northeastern CMS Group Deputy Team Leader
- 2014 - 2022: Deputy Representative to the CMS Collaboration Board

## 1.4 Research Group

### Postdoctoral Researchers

1. Mattia Campana (April 2024 - present): working on physics studies using Higgs boson decays to two photons ( $H \rightarrow \gamma\gamma$ ,  $X \rightarrow YH \rightarrow WW\gamma\gamma$ ), ECAL operations (L1 trigger, data acquisition) and upgrade (system tests, test beam studies, data acquisition)
2. Badder Marzocchi (Mar 2019 - Feb 2023): worked on physics studies using Higgs boson decays to two photons as a probe for new physics ( $H \rightarrow \gamma\gamma$ ,  $h \rightarrow aa \rightarrow \gamma\gamma$ ,  $HH \rightarrow WW\gamma\gamma$ ), ECAL calibration and clustering (served as co-convener of the ECAL Monitoring and Calibration group), MTD test beams and system tests; now postdoctoral researcher at University of Minnesota, Minneapolis

3. Andrea Massironi (Jan 2013 - Dec 2018): worked on physics analysis with Higgs boson decays to  $WW$  (served as  $H \rightarrow WW$  physics analysis subgroup convener), and ECAL calibration and detector performance (served as ECAL detector performance group convener); now permanent staff scientist at INFN Milano-Bicocca

### **Ph.D. students**

1. Cort Thoreson (May 2023 - present): ECAL operations (L1 trigger studies, data acquisition) and and upgrade (system tests, test beam studies, data acquisition)
2. JP Dervan (May 2021 - present), projected graduation summer 2026: searches for exotic Higgs production in  $X \rightarrow YH$  in the  $WW\gamma\gamma$ , ECAL L1 trigger studies, MTD barrel timing layer system tests, studies for future Muon Collider
3. Amrutha Krishna (May 2020 - present), projected graduation summer 2025: indirect measurement of the Higgs boson width in the  $\gamma\gamma$  channel using interference methods, ECAL operations and alignment, MTD barrel timing layer test beam studies and thermal & mechanical studies
4. Abraham Tishelman-Charny (May 2017 - Aug 2022): “Search for Higgs Boson Pair Production at the CMS Experiment with Run 2 LHC Data”; now postdoctoral researcher with Brookhaven National Laboratory ATLAS group
5. Tanvi Wamorkar (May 2016 - May 2021): “Search for exotic decays of the Higgs boson using photons with the Compact Muon Solenoid experiment”; since postdoctoral researcher with Argonne National Laboratory ATLAS group; now Lawrence Berkeley National Laboratory
6. Rafael Teixeira De Lima, (Sep 2012 - May 2017): “Beyond The Standard Model Higgs Physics with Photons with the CMS Detector”; postdoctoral researcher at SLAC National Accelerator Laboratory (2017-2022); since senior data scientist at Sanofi; now research scientist at IBM

### **M.S. students**

1. Kirsten Randle (May 2020): ECAL L1 trigger studies
2. Megan Stark (May 2017 - May 2018): ECAL L1 trigger studies; now research engineer at Spectral Sciences
3. Martin Franke (Jan - May 2014): exchange student from Germany;  $ZH \rightarrow WW$

### **Undergraduate Coop Students**

1. Christian Bernier (Jan-Jun 2024), B.S. Computer Science & Physics 2025 (expected): development of test suite and environmental stress screening setup for ECAL electronics upgrade
2. Broderick Kelly (Jul-Dec 2023), B.S. Physics & Math 2024: tests of new ECAL electronics at test beam and in the laboratory; development of web-based tools for ECAL barrel electronics upgrade; now MS student at Northeastern University

3. Luke Martin (Jan-Jul 2023), B.S. Physics & Math 2024: development of test suite for ECAL electronics upgrade, participation in test beam campaign, shifts-taking for ECAL operations, now PhD student at Stony Brook University
4. Daniel Abadjiev (Jun-Dec 2022), B.S. Physics 2024: development of test suite for ECAL electronics upgrade, participation in test beam campaign and data analysis, shifts-taking for ECAL operations, now PhD student at University of Chicago
5. Isabel Kain (Aug-Dec 2019), B.S. Physics 2020: development of data acquisition system for ECAL upgrade tests; now PhD student at UC Santa Cruz
6. Michael Plessner (Jun-Dec 2018), B.S. Physics 2019: test beam data analysis (timing resolution studies) for ECAL electronics upgrade; now PhD student at Penn State
7. Kelsey Yee (Jun-Dec 2017), B.S. Physics 2018: test beam data analysis (energy resolution studies) for ECAL electronics upgrade; now PhD student at MIT
8. Kathryn Larkin (Jan-Jun 2017), B.S. Biomedical Physics 2018: tests of front-end electronics for ECAL electronics upgrade; now student at Stanford Law School
9. William Benoit (Jul-Dec 2016), B.S. Physics & Math 2018: simulation studies and test beam data analysis for ECAL electronics upgrade; now PhD student at University of Minnesota, Minneapolis
10. Marko Ristic (Jan-Jun 2016), B.S. Physics 2018: test beam data analysis to study ultimate timing precision of ECAL crystals; R&D studies of the Shashlik Detector; now Ph.D. student at Rochester Institute of Technology
11. Alexander Coda (Jul-Dec 2015), B.S. Physics & Math 2017, M.S. Intelligent Information Systems 2018 (Carnegie Mellon): simulation studies for the ECAL electronics upgrade; R&D studies of the Shashlik Detector; now software engineer at Datavant

### Research Group Awards

- T. Orimoto: DOE Early Career Award (2013 - 2018)
- A. Massironi: CMS Achievement Award (2017)
- A. Krishna: CMS Achievement Award (2023)
- A. Tishelman-Charny: Dissertation Completion Fellowship (2022); CMS Achievement Award (2020)
- T. Wamorkar: Universities Research Association Fellowship (2019); Dissertation Completion Fellowship (2021)
- R. Teixeira de Lima: CMS Achievement Award (2016)
- D. Abadjiev: Altshuler Alumni Research Award (2023)
- I. Kain: Northeastern PEAK Experiences Summit Award (2020)
- K. Larkin: Northeastern University Compass Award (2018)

## 1.5 Publications

Please note that publications produced by the CMS Collaboration include all authors from the collaboration, as is customary in experimental particle physics. Articles with significant contributions from the Orimoto group are listed below.

### Publication Metrics

- INSPIRE HEP h-index: 140
- Google Scholar h-index: 218

### Reviewed articles

- [1] CMS Collaboration, “Performance of the CMS electromagnetic calorimeter in  $pp$  collisions at  $\sqrt{s} = 13$  TeV,” JINST 19 (2024) P09004.
- [2] CMS Collaboration, “Development of the CMS detector for the CERN LHC Run 3,” JINST 19 (2024) P05064.
- [3] CMS ECAL Collaboration, “Autoencoder-based Anomaly Detection System for Online Data Quality Monitoring of the CMS Electromagnetic Calorimeter,” Comput Softw Big Sci 8, 11 (2024).
- [4] CMS collaboration, “Search for the exotic decay of the Higgs boson into two light pseudoscalars with four photons in the final state in proton-proton collisions at  $\sqrt{s} = 13$  TeV,” Journal of High Energy Physics **2023**, 148 (2023).
- [5] CMS Collaboration, “A portrait of the Higgs boson by the CMS experiment ten years after the discovery,” Nature **607**, 6068 (2022).
- [6] CMS Collaboration, “Reconstruction of signal amplitudes in the CMS electromagnetic calorimeter in the presence of overlapping proton-proton interactions,” Journal of Instrumentation **15**, no.10, P10002 (2020).
- [7] CMS Collaboration, “Search for Higgs boson pair production in the  $\gamma\gamma b\bar{b}$  final state in  $pp$  collisions at  $\sqrt{s} = 13$  TeV,” Physics Letters B **788**, 7-36 (2019).
- [8] CMS Collaboration, “Measurements of properties of the Higgs boson decaying to a W boson pair in  $pp$  collisions at  $\sqrt{s} = 13$  TeV,” Physics Letters B **791** (2019) 96.
- [9] CMS Collaboration, “Measurement of the transverse momentum spectrum of the Higgs boson produced in  $pp$  collisions at  $\sqrt{s} = 8$  TeV using  $H \rightarrow WW$  decays,” Journal of High Energy Physics **2017**, 32 (2017).
- [10] CMS Collaboration, “Search for exotic decays of a Higgs boson into undetectable particles and one or more photons,” Physics Letters B **753**, 363 (2016).
- [11] T. Adams *et al.* (CMS ECAL Collaboration), “Beam test evaluation of electromagnetic calorimeter modules made from proton-damaged  $\text{PbWO}_4$  crystals,” Journal of Instrumentation **11**, no. 04, P04012 (2016).

- [12] ATLAS and CMS Collaborations, “Measurements of the Higgs boson production and decay rates and constraints on its couplings from a combined ATLAS and CMS analysis of the LHC pp collision data at  $\sqrt{s} = 7$  and 8 TeV,” *Journal of High Energy Physics* **1608**, 045 (2016).
- [13] CMS Collaboration, “Measurement of the  $W^+W^-$  cross section in pp collisions at  $\sqrt{s} = 8$  TeV and limits on anomalous gauge couplings,” *European Physical Journal C* **76**, no. 7, 401 (2016).
- [14] CMS Collaboration, “Search for Higgs boson off-shell production in proton-proton collisions at 7 and 8 TeV and derivation of constraints on its total decay width,” *Journal of High Energy Physics* **1609**, 051 (2016).
- [15] CMS Collaboration, “Search for supersymmetry with photons in pp collisions at  $\sqrt{s}=8$  TeV,” *Physical Review D* **92**, no. 7, 072006 (2015).
- [16] CMS Collaboration, “Search for a Higgs Boson in the Mass Range from 145 to 1000 GeV Decaying to a Pair of W or Z Bosons,” *Journal of High Energy Physics* **1510**, 144 (2015).
- [17] CMS Collaboration, “Performance of Photon Reconstruction and Identification with the CMS Detector in Proton-Proton Collisions at  $\sqrt{s} = 8$  TeV,” *Journal of Instrumentation* **10**, no. 08, P08010 (2015).
- [18] CMS Collaboration, “Performance of Electron Reconstruction and Selection with the CMS Detector in Proton-Proton Collisions at  $\sqrt{s} = 8$  TeV,” *Journal of Instrumentation* **10**, no. 06, P06005 (2015).
- [19] CMS Collaboration, “Precise determination of the mass of the Higgs boson and tests of compatibility of its couplings with the standard model predictions using proton collisions at 7 and 8 TeV,” *European Physical Journal C* **75**, no. 5, 212 (2015).
- [20] BaBar and Belle Collaborations “The Physics of the B Factories,” *European Physical Journal C* **74**, 3026 (2014).
- [21] CMS Collaboration, “Energy Calibration and Resolution of the CMS Electromagnetic Calorimeter in  $pp$  Collisions at  $\sqrt{s} = 7$  TeV,” *Journal of Instrumentation* **8**, P09009 (2013).
- [22] CMS Collaboration, “Observation of a new boson with mass near 125 GeV in pp collisions at  $\sqrt{s} = 7$  and 8 TeV,” *Journal of High Energy Physics* **1306**, 081 (2013).
- [23] CMS Collaboration, “Search for the standard model Higgs boson decaying into two photons in  $pp$  collisions at  $\sqrt{s} = 7$  TeV,” *Physics Letters B* **710**, 403 (2012).
- [24] CMS Collaboration, “Search for signatures of extra dimensions in the diphoton mass spectrum at the Large Hadron Collider,” *Physical Review Letters* **108**, 111801 (2012).
- [25] A. Lyapin *et al.*, “Results from a prototype chicane-based energy spectrometer for a linear collider,” *Journal of Instrumentation* **6**, P02002 (2011).
- [26] CMS Collaboration, “Performance and Operation of the CMS Electromagnetic Calorimeter,” *Journal of Instrumentation* **5**, T03010 (2010).



- [27] USCMS and ECAL/HCAL Collaborations, “The CMS barrel calorimeter response to particle beams from 2-GeV/c to 350-GeV/c,” *European Physical Journal C* **60**, 359 (2009).
- [28] CMS Collaboration, “The CMS experiment at the CERN LHC,” *Journal of Instrumentation* **3** (2008) S08004.
- [29] M. Slater *et al.*, “Cavity BPM system tests for the ILC energy spectrometer,” *Nuclear Instruments and Methods A* **592**, 201 (2008).
- [30] P. Adzic *et al.* (CMS ECAL Collaboration), “Intercalibration of the barrel electromagnetic calorimeter of the CMS experiment at start-up,” *Journal of Instrumentation* **3**, P10007 (2008).
- [31] CMS Collaboration, S. Chatrchyan *et al.* [CMS Collaboration], “The CMS experiment at the CERN LHC,” *Journal of High Energy Physics* **3**, S08004 (2008).
- [32] BaBar Collaboration, “Observation of Decays  $B^0 \rightarrow D_s (*) + \pi^-$  and  $B^0 \rightarrow D_s (*) - K^+$ ,” *Physical Review Letters* **98**, 081801 (2007).
- [33] BaBar Collaboration, “A study of the rare decays  $B^0 \rightarrow D_s^{(*)+} \pi^-$  and  $B^0 \rightarrow D_s^{(*)-} K^+$ ,” *Physical Review Letters* **90**, 181803 (2003).

### Non-reviewed articles

- [1] K. M. Black, S. Jindariani, D. Li, F. Maltoni, P. Meade, D. Stratakis, D. Acosta, R. Agarwal, K. Agashe and C. Aimè, *et al.* “Muon Collider Forum Report,” arXiv:2209.01318 [hep-ex].
- [2] CMS Collaboration, Search for nonresonant Higgs boson pair production in the  $WW\gamma\gamma$  channel in  $pp$  collisions at  $\sqrt{s}=13$  TeV, CMS-PAS-HIG-21-014, 2022.
- [3] US CMS Collaboration, “Technical Design Report for the US HL-LHC Upgrade of the Compact Muon Solenoid,” <https://cms-docdb.cern.ch/cgi-bin/DocDB/ShowDocument?docid=14076>, 2020.
- [4] CMS Collaboration, “A MIP Timing Detector for the CMS Phase-2 Upgrade: Technical Design Report,” CERN-LHCC-2019-003 ; CMS-TDR-020, 2019.
- [5] CMS Collaboration, “The Phase-2 Upgrade of the CMS Barrel Calorimeters Technical Design Report,” CERN-LHCC-2017-011; CMS-TDR-015, 2017.
- [6] CMS Collaboration, “Higgs to WW measurements with  $15.2 \text{ fb}^{-1}$  of 13 TeV proton-proton collisions,” CMS-PAS-HIG-16-021, 2017.
- [7] US CMS Collaboration, “Conceptual Design Report for the US HL-LHC Upgrade of the Compact Muon Solenoid,” <https://cms-docdb.cern.ch/cgi-bin/DocDB/ShowDocument?docid=13151>, 2016.
- [8] LHC Higgs Cross Section Working Group “Handbook of LHC Higgs Cross Sections: 4. Deciphering the Nature of the Higgs Sector,” doi:10.23731/CYRM-2017-002, arXiv:1610.07922 [hep-ph], 2016.

- [9] CMS Collaboration, “Search for  $H(bb)H(\text{gammagamma})$  decays at 13TeV,” CMS-PAS-HIG-16-032, 2016.
- [10] CMS Collaboration, “Search for high mass Higgs to WW with fully leptonic decays using 2015 data,” CMS-PAS-HIG-16-023, 2016.
- [11] CMS Collaboration, “First results on Higgs to WW at  $\sqrt{s} = 13$  TeV,” CMS-PAS-HIG-15-003, 2016.
- [12] CMS Collaboration, “Measurement of the WW cross section pp collisions at  $\sqrt{s}=13$  TeV,” CMS-PAS-SMP-16-006, 2016.
- [13] CMS Collaboration, “Search for new physics in final states with low transverse energy photon and missing transverse energy,” CMS-PAS-HIG-14-024, 2015.
- [14] CMS Collaboration, “Search for High-Mass Diphoton Resonances in pp Collisions at  $\sqrt{s}=8$  TeV with the CMS Detector,” CMS-PAS-EXO-12-045, 2015.
- [15] CMS Collaboration, “VH with  $H \rightarrow WW \rightarrow \ell\nu\ell\nu$  and  $V \rightarrow jj$ ,” CMS-PAS-HIG-13-017, 2013.

### Conference Proceedings

- [1] T. J. Orimoto, on behalf of the CMS Collaboration, “High precision electromagnetic calorimetry with 40 MHz readout: the CMS crystal ECAL for the High-Luminosity LHC,” doi:10.1109/NSSMIC.2017.8532642. Prepared for the 2017 IEEE Nuclear Science Symposium and Medical Imaging Conference, Atlanta, GA (virtual).
- [2] T. Orimoto, on behalf of the CMS Collaboration, “Design studies for the Phase II upgrade of the CMS Barrel Electromagnetic Calorimeter,” Proceeding of Science **ICHEP2016**, 232 (2016). Prepared for the 2016 International Conference on High Energy Physics (ICHEP), Chicago, IL.
- [3] T. Orimoto, on behalf of the CMS Collaboration, “Search for new physics in the low MET monophoton channel with the CMS Detector,” arXiv:1511.00337 [hep-ex]. Prepared for the 2015 Meeting of the American Physical Society Division of Particles and Fields, Ann Arbor, Michigan.
- [4] T. J. Orimoto, on behalf of the CMS Collaboration, “Searches for high mass resonances with the CMS detector,” European Physical Journal Web of Conferences **28**, 09010 (2012). Prepared for Hadron Collider Physics Symposium 2011, Paris, France.
- [5] T. J. Orimoto, on behalf of the CMS Collaboration, “Commissioning of the CMS electromagnetic calorimeter with first collisions,” Nuclear Physics B - Proceedings Supplements **215**, 116 (2011). Prepared for the Innovative Particle and Radiation Detectors 2010, Siena, Italy.
- [6] T. J. Orimoto, on behalf of the CMS Collaboration, “First CMS results with LHC beam,” arXiv:0905.4814 [hep-ex]. Prepared for the 2009 Lake Louise Winter Institute, Lake Louise, Canada.

- [7] T. J. Orimoto, on behalf of the CMS ECAL Collaboration, “The CMS electromagnetic calorimeter: Construction, commissioning and calibration,” Proceeding of Science **EPS-HEP2009**, 129 (2009). Prepared for the 2009 Europhysics Conference on High Energy Physics (EPS-HEP), Krakow, Poland.
- [8] T. J. Orimoto, on behalf of the CMS ECAL Collaboration, “The commissioning of the CMS electromagnetic calorimeter light monitoring system,” doi:10.1109/NSSMIC.2008.4774803. Prepared for the 2008 IEEE Nuclear Science Symposium and Medical Imaging Conference, Dresden, Germany.
- [9] T. Orimoto, on behalf of the CMS ECAL Collaboration, “The CMS ECAL laser monitoring system,” Astroparticle, Particle and Space Physics, Detectors and Medical Physics Applications: Proceedings of the 10th Conference. Prepared for the 10th ICATPP Conference on Astroparticle, Particle, Space Physics, Detectors and Medical Physics Applications 2007, Villa Olmo, Como, Italy.
- [10] S. Walston *et al.*, “Resolution of a High Performance Cavity Beam Position Monitor System,” Conference Proceedings C **070625**, 4090 (2007) [IEEE Nuclear Science Symposium Conference Record, 4090 (2007)].
- [11] T. Orimoto, on behalf of the Babar Collaboration, “New measurements of the angle  $\gamma$  from the BaBar experiment,” SLAC-PUB-11783, Frascati Physics Series **41**, 361 (2006). Prepared for the 2006 International Workshop on Discoveries in Flavour Physics at e+e- Colliders, Frascati, Italy.
- [12] Babar Collaboration, “A search for the rare decay  $B^0 \rightarrow D_s^+ \rho^-$ ,” SLAC-PUB-10602, BABAR-CONF-04-005, hep-ex/0408029. Prepared for the 32nd International Conference on High-Energy Physics 2004, Beijing, China.
- [13] “A study of the rare decays  $B^0 \rightarrow D_s^{(*)+} \pi^-$  and  $B^0 \rightarrow D_s^{(*)-} K^+$ ,” SLAC-PUB-9302, BABAR-CONF-02-034, hep-ex/0207053. Prepared for the 31st International Conference on High Energy Physics 2002, Amsterdam, The Netherlands.
- [14] “Evidence for the  $b \rightarrow u$  transition  $B^0 \rightarrow D_s^+ \pi^-$  and a search for  $B^0 \rightarrow D_s^{*+} \pi^-$ ,” SLAC-PUB-9231, BABAR-CONF-02-08, hep-ex/0205102. Prepared for Flavor Physics and CP Violation 2002, Philadelphia, Pennsylvania.

### **Other Articles:**

- [1] S. Argiro, R. Hirosky, W. Lusterhann, T. Orimoto, “Upgrading the CMS Electromagnetic Calorimeter Readout Electronics for Phase-2,” CERN Experimental Physics Division Newsletter, Mar 2023.
- [2] T. Orimoto, “How the Higgs boson could reveal the fate of our universe,” New Scientist, Nov 2022.
- [3] T. Orimoto, “The Higgs boson as a probe for new physics,” CERN Experimental Physics Division Newsletter, June 2019.

## 1.6 Presentations

### Conference Presentations

- Invited Talks

1. “Precision Electromagnetic Calorimetry and Timing at the Large Hadron Collider,” on behalf of the CMS Collaboration, 2023 Fall Meeting of the Division of Nuclear Physics of the American Physical Society and Physical Society of Japan, Hawaii, USA, Oct 2023.
2. “Exploring the High Energy Frontier: My Path to Physics with the World’s Largest Science Experiment,” 2023 Conference for Undergraduate Women in Physics (CUWiP), Providence, RI, Jan 2023.
3. “Recent Run 2 Results from the CMS Collaboration,” on behalf of the CMS Collaboration, US LHC Users Association (USLUA) Annual Meeting, Berkeley, CA, Nov 2016.

- Contributed Plenary Talks

1. “Results from CMS,” on behalf of the CMS Collaboration, Miami Conference, Fort Lauderdale FL, Dec 2017.
2. “Other Exotic Signatures,” on behalf of the CMS Collaboration, Implications of LHC results for TeV-scale physics: WG3 meeting, CERN, Geneva, Switzerland, Dec 2011.
3. “High Mass Resonance Searches with the CMS Experiment,” on behalf of the CMS Collaboration, Hadron Collider Physics Symposium 2011, Paris, France, Nov 2011.
4. “Status of the CMS Experiment,” on behalf of CMS Collaboration, Symmetries and Spin 2010 (SPIN-Praha-2010), Prague, Czech Republic, July 2010.
5. “First beam at LHC as seen by CMS,” on behalf of the CMS Collaboration, Lake Louise Winter Institute, Lake Louise, Canada, Feb 2009.
6. “New Measurements of the Angle  $\gamma$  from the Babar Experiment,” on behalf of the Babar Collaboration, International Workshop on Discoveries in Flavour Physics at  $e^+e^-$  Colliders, Frascati, Italy, Feb 2006.

- Contributed Parallel Talks

1. “Higgs boson rare production and decays at ATLAS and CMS,” on behalf of the ATLAS and CMS Collaborations, Large Hadron Collider Physics 2023 Conference, Belgrade, Serbia, May 2023.
2. “Imposter Syndrome Workshop,” 2023 Conference for Undergraduate Women in Physics (CUWiP), Boston, MA, Jan 2023.
3. “Diversity and Inclusion in the CMS Collaboration,” on behalf of the CMS Collaboration, 2022 International Conference for High Energy Physics (ICHEP), Bologna, Italy, July 2022 (virtual).

4. “Search for non-resonant Higgs boson pair production in the  $bb\gamma\gamma$  final state at CMS,” on behalf of the CMS Collaboration, Higgs 2021 Conference, Stony Brook, NY, Oct 2021 (virtual).
5. “Optimizing the performance of the CMS Electromagnetic Calorimeter for LHC Phases I & II,” on behalf of the CMS Collaboration, IEEE Nuclear Science Symposium and Medical Imaging Conference, Boston, MA, Oct 2020 (virtual).
6. “Higgs as a Tool for New Physics,” on behalf of the CMS Collaboration, American Physical Society April Meeting, Denver, CO, April 2019.
7. “High precision electromagnetic calorimetry with 40 MHz readout: the CMS crystal ECAL for the High-Luminosity LHC,” on behalf of the CMS Collaboration, IEEE Nuclear Science Symposium and Medical Imaging Conference, Atlanta, GA, Oct 2017.
8. “Design studies for the Phase II upgrade of the CMS Barrel Electromagnetic Calorimeter”, on behalf of the CMS Collaboration, International Conference on High Energy Physics (ICHEP16), Chicago, IL, Aug 2016.
9. “Search for New Physics in the Low MET Monophoton Channel with the CMS Detector,” on behalf of the CMS Collaboration, American Physical Society Meeting of the Division of Particles and Fields Meeting 2015, Ann Arbor, MI, Aug 2015.
10. “Search for New Physics in the Low MET Monophoton Channel with the CMS Detector,” on behalf of the CMS Collaboration, Phenomenology Symposium 2015, Pittsburgh, PA, May 2015.
11. “Mono- and Di-photon Searches at the LHC,” on behalf of the CMS Collaboration, Astroparticle Physics 2014, Amsterdam, NL, June 2014.
12. “Commissioning of the CMS Electromagnetic Calorimeter with First Collisions,” on behalf of the CMS Collaboration, 12th Topical Seminar on Innovative Particle and Radiation Detectors (IPRD10), Siena, Italy, June 2010.
13. “The CMS Electromagnetic Calorimeter: Construction, Commissioning and Calibration,” on behalf of the CMS ECAL Group, 2009 Europhysics Conference on High Energy Physics (EPS-HEP), Krakow, Poland, July 2009.
14. “Nanometer Resolution Beam Position Monitors for the ILC,” on behalf of the NanoBPM Collaboration, American Physical Society Division of Particles and Fields Joint Meeting of Pacific Region Particle Physics Community, Honolulu, Hawaii, Oct 2006.
15. “Study of the Decay  $B^0 \rightarrow D_s^+ \rho^-$  at the Babar Detector,” on behalf of the Babar Collaboration at the American Physical Society April Meeting, Tampa, FL, April 2005.
16. “Study of the Decays  $B^0 \rightarrow D_s^{(*)+} \pi^-$ ,” on behalf of the Babar Collaboration, Meeting of the Division of Particles & Fields of the American Physical Society, Williamsburg, VA, May 2002.

- Poster Presentations

1. “The Commissioning of the CMS Electromagnetic Calorimeter Light Monitoring System,” on behalf of the CMS ECAL Group, IEEE Nuclear Science Symposium and Medical Imaging Conference, Dresden, Germany, Oct 2008.
2. “The CMS ECAL Laser Monitoring System,” on behalf of the CMS ECAL Group, 10th ICATPP Conference on Astroparticle, Particle, Space Physics, Detectors and Medical Physics Applications, Villa Olmo, Como, Italy, Oct 2007.

## Colloquia

1. “Exploring the High Energy Frontier with Precision Electromagnetic Calorimetry: CMS ECAL & the Search for di-Higgs Production,” Florida State University, April 2018.
2. “Hunting for the Higgs with the CMS Detector,” Drexel University, Philadelphia, PA, Mar 2013.
3. “The Search for the Higgs in the Two Photon Decay Channel with the CMS Detector,” University of Texas, Austin, Mar 2012.
4. “Diphotons with the CMS Detector: Probes for Discovery at the LHC,” University of Texas, Dallas, Mar 2012.
5. “The Search for the Higgs in the Diphoton Channel with the CMS Detector,” University of Oregon, Eugene, OR, Mar 2012.
6. “Photons with the CMS Detector: A Probe for Discovery at the LHC,” Northeastern University, Boston, MA, Mar 2012.
7. “Extra Dimensions at the LHC: Searches with Diphotons with the CMS Detector,” University of Alabama, Tuscaloosa, AL, Mar 2011.

## Seminars

1. “Exploring the High Energy Frontier with the World’s Largest Science Experiment,” Mount Holyoke College, Mount Holyoke, MA, April 2023.
2. “Exploring the High Energy Frontier with Precision Electromagnetic Calorimetry: CMS ECAL & the Search for Di-Higgs Production in  $bb\gamma\gamma$ ,” Tufts University, Medford, MA, Dec 2017.
3. “Search for New Physics in the Low MET Monophoton Channel with the CMS Detector,” University of Massachusetts, Amherst, MA, Oct 2015.
4. “Search for New Physics in the Low MET Monophoton Channel with the CMS Detector,” University of Chicago, Chicago, IL, Mar 2015.
5. “Search for Higgs Boson Decays to  $Z+\gamma$  with the CMS Detector,” Boston University, Boston, MA, Nov 2013.
6. “Diphotons with the CMS Detector: Probes for Discovery at the LHC,” University of Texas, Austin, Mar 2012.

7. “Photons with the CMS Detector: A Probe for Discovery at the LHC,” University of Oregon, Eugene, OR, Mar 2012.
8. “Photons with the CMS Detector: A Probe for Discovery at the LHC,” Massachusetts Institute of Technology, Cambridge, MA, Mar 2012.
9. “Diphotons with the CMS Detector: Early Searches with 7 TeV LHC Data,” University of California, Davis, CA, Mar 2011.
10. “Diphotons with the CMS Detector: Early Searches with 7 TeV LHC Data,” New York University, New York, NY, Mar 2011.
11. “Diphotons with the CMS Detector: Early Searches with 7 TeV LHC Data,” Northwestern University, Evanston, IL, Mar 2011.
12. “The CMS Experiment: First Collisions and Plans for Early Data,” Research Progress Meeting seminar at Lawrence Berkeley National Laboratory, Berkeley, CA, Feb 2010.
13. “Photon Physics with the CMS Detector,” University of Minnesota, Minneapolis, MN, Feb 2009.
14. “The NanoBPM Project: Nanometer resolution beam position monitors for the International Linear Collider,” Caltech, Pasadena, CA, Jan 2006.

## 2 Teaching and Advising

### 2.1 Courses Taught

- PHYS1145, Physics for Life Sciences 1: Fall 2013 (87 students), 2015 (88 students)
- PHYS1157 (Physics for Engineers, Interactive Learning Seminar): Fall 2020 (2 sections, 24 & 38 students), 2021(2 sections, 24 & 37 students)
- PHYS1161, Physics 1: Fall 2016 (70 students)
- PHYS1165, Physics 2: Spring 2014 (40 students), 2016 (35 students), 2017 (56 students), 2018 (37 students), 2019 (48 students), 2021 (43 students), 2023 (35 students)

### 2.2 Thesis Committees

#### Internal Ph.D. Thesis Committees

1. Gabriel Madigan (Physics 2023), “A search for leptoquarks decaying to muons and bottom quarks in proton-proton collisions at  $\sqrt{s} = 13$  TeV with the full Run II data recorded by CMS,” PhD advisor Prof. Emanuela Barberis
2. Vivian Nguyen (Physics 2023), “A Search for Higgs Boson Pair Production in the  $bbZZ(llqq)$  Channel with the CMS Detector,” PhD advisor Prof. Emanuela Barberis
3. Bingran Wang (Physics 2020), “Measurements of the dilepton  $p_T$  spectrum in the  $2l2\nu$  channel of  $ZZ$  production & search for anomalous triple gauge couplings at 13 TeV,” PhD advisor Prof. Darien Wood

4. Chad Freer (Physics 2020), “The Hunt for Physics Beyond the Standard Model: Dark Matter, Large Extra Dimensions & the Higgs Portal in pp Collisions at  $\sqrt{s} = 13$  TeV,” PhD advisor Prof. Darien Wood
5. Andrew Wisecarver (Physics 2020), “Measurement of the strong coupling constant using ratios of W boson + jets cross section,” PhD advisor Prof. Emanuela Barberis
6. Andrew Spisak (Physics 2017), “Probing Coannihilation Regions of Supergravity Unification at the LHC,” PhD advisor Prof. Pran Nath
7. David Nash (Physics 2016), “The Search for Single Production of First and Second Generation Leptoquarks in  $pp$  collisions at the LHC,” PhD advisor Prof. Darien Wood
8. David Francescone (Physics 2015): “Supergravity Unification, Dark Matter and LHC Signatures Post Higgs Boson Discovery,” PhD advisor Prof. Pran Nath
9. Sujeet Akula (Physics 2014): “Exploring Models of Supergravity Grand Unification with LHC and Dark Matter Phenomenology,” PhD advisor Prof. Pran Nath

### **External Ph.D. Thesis Committee**

1. Christopher Gubbels (University of British Columbia, Canada, Physics 2022), “Searches for Higgs pair production in the 4 b-jet final state with the ATLAS Detector at the LHC,” PhD advisor Prof. Maximilian Swiatlowski
2. Abhishek Sharma (University of Adelaide, Australia, Physics 2021), “Jigsaws Falling into Place: Advances in Event Reconstruction and Electroweak Supersymmetry at ATLAS,” PhD advisor Prof. Paul Jackson
3. Andrew Buccilli (University of Alabama, Physics 2018), “Search for new physics in diphoton final state with the CMS Detector,” PhD advisor Prof. Conor Henderson

## **3 Service**

### **3.1 Service to the Institution**

#### **3.1.1 Departmental Service**

##### **Executive Committee**

- 2016 - 2023: Representative to Executive Committee for Experimental Particle Physics (EPP) group
- 2012 - 2016: Alternate representative to Executive Committee for Experimental Particle Physics (EPP) group

##### **Colloquium & Seminar Committee**

- 2017 - 2019: Chair of Colloquium & Seminar Committee



- 2012 - 2017: Member of Colloquium & Seminar Committee
- Organized 15 physics department colloquia and 8 high energy physics seminars
- Helped organize 2 Nobel Physics Colloquia

### **Faculty Mentorship**

- Prof. Tsuguo Aramaki, Assistant Professor, 2021-present
- Prof. Louise Skinnari, Assistant Professor, 2019-present

### **Search Committees**

- 2022: Member of INVEST search committee for Physics Department (hired Prof. Johan Bonilla Sebastian)
- 2019: Chair of search committee for experimental particle physics faculty (hired Prof. Tsuguo Aramaki)
- 2018: Member of search committee for experimental particle physics faculty (hired Prof. Louise Skinnari)
- 2015: Member of search committee for high energy theory faculty (hired Prof. James Halverson)

### **Graduate Committee & Graduate Recruitment**

- 2013 - present: Many in-person & video-conference meetings with prospective students
- 2013 - present: Development, proctoring, & grading of graduate qualifying exam
- 2013, 2015, 2017: Attended Open House for prospective graduate students
- 2013 - 2015: Member of Graduate Committee

### **Undergraduate Recruitment**

- 2013 - present: Presentations at NU Welcome Day
- 2013 - present: Many individual meetings with prospective physics majors
- 2015: Represented Physics at NU Fall Preview Day & Meet the Majors Fair
- 2014: Attended COS International Students Luncheon
- 2013 - 2018: Participation in Annual Phonathon for admitted students

### **Undergraduate Awards**

- 2019 - present: Chair of Undergraduate Awards Committee member
- 2016 - present: Developed relationships with donors
- 2016 - 2022: Developed new donor-funded Undergraduate Research Award for Women in Physics; producing annual report for donor

- 2020: Member of Northeastern University Churchill Scholarship Committee
- 2015 - 2019: Member of Undergraduate Awards Committee

### Society of Physics Students (SPS)

- 2016 - 2018: Organized Q&A sessions on applying to graduate school & funding undergraduate research
- 2016: Participated in COS Family Feud event with SPS
- 2014 - 2019: Organized Annual SPS Bowling Night
- 2013 - 2019: Co-advisor for SPS group

### Diversity, Equity, & Inclusion

- 2020 - present: Chair of Physics Department Diversity, Equity, & Inclusion Committee

### Graduate & Undergraduate Women in Physics

- 2014 - present: Informal advisor to undergraduate women in physics, organizing dinners, outings, and other activities and including graduate women since 2018
- 2022, 2023: Organized NU Women in Physics Lighting Talks
- 2021: Organized NU Women in Physics Alumnae Career Panel Discussion, in collaboration with University Advancement
- 2015: Faculty mentor for APS Women in Physics Group grant application

### **3.1.2 College Service**

#### Diversity Committee

- 2017 - present: Member of College of Science Diversity, Equity, Inclusion, & Justice Committee

#### Panels

- 2024: COS Advancing Women in Science Panelist

### **3.1.3 University Service**

#### Graduate Advising

- 2018: Panelist for Northeastern Academic Job Search Series: Faculty Perspectives

#### Undergraduate Recruitment

- 2017: Attended lunch with American Junior Academy of Science prospective students

- 2014 & 2016: Attended Welcome Day Dinner for Northeastern University Scholars

### University Development/Advancement

- 2015 - present: Working with University Advancement to develop and maintain donor relationships
- 2016 - 2017: Worked with NU ADVANCE and University Advancement on development of Undergraduate Research Award for Women in Physics funded by private donor

### Diversity, Equity, & Inclusion

- NU ADVANCE
  - 2013: Panel member for NU ADVANCE “Insights from Young Investigator Awardees”
  - 2013 - present: Active participant in many workshops and discussions
- Women of Color in the Academy
  - 2021 & 2022: Co-chair of the 5th & 6th Annual Women of Color in the Academy Conference Northeastern University, Boston, MA
  - 2021: Co-host of NU Women of Color in the Academy Sip & Share Meet-up
  - 2019, 2020: Member of Planning Committee for Women of Color in the Academy Conference, Northeastern University, Boston, MA
- New England Future Faculty Workshop
  - 2018, 2020, 2022, 2023, 2024: Presented “Telling Your Science Story: Writing a Research Statement” at New England Future Faculty Workshop
- Provost’s Faculty Diversity Recruitment and Retention Forum
  - 2022, 2020: Panel Member
- Graduate Women in Science & Engineering (GWISE)
  - 2013 - present: GWISE Lightning Résumé reviewer
  - 2019: GWISE Thesis Competition Judge
- NU DREAM
  - 2017: Presented research talk and participated in panel for NU DREAM “Reflections of Faculty Women of Color” event

## 3.2 Service to the Discipline/Profession

### Grant Proposal Reviews/Panels

- Department of Energy and National Science Foundation proposal reviewer and comparative review panel member
- Swiss National Foundation reviewer
- Natural Sciences and Engineering Research Council (NSERC) of Canada reviewer
- New Frontiers in Research Fund for the Tri-agency Institutional Programs Secretariat of the Social Sciences and Humanities Research Council of Canada reviewer

### Letters of Collaboration

- 2023: “Improving Introductory Physics Laboratory Through Targeted Experiments Supplemented with a Computational Component, submitted to National Science Foundation, PIs: Profs. Oleg Batishchev & Baris Altunkaynak
- 2022: “Its always the PSF: Lessons from Cosmology for Robust SciML,” submitted to Department of Energy, PI: Prof. Jacqueline McCleary,
- 2016: “CC\* Integration: SANDIE: SDN-Assisted NDN for Data Intensive Experiments,” submitted to National Science Foundation, PI: Prof. Edmund Yeh

### American Physical Society (APS) Forum on International Physics

- 2021: APS FIP Nominating Committee Member & Election Coordinator
- 2018 & 2019: Organizing FIP sessions for APS March & April Meetings
- 2017 & 2018: Member of selection committee for APS Fellows from FIP
- 2017 - 2019: APS Forum for International Physics Executive Committee Member (Elected)

### US LHC Users Association (USLUA)

- 2022: Organizer for US High Energy Physics Higgs @ 10 Years Celebration
- 2015 - 2017: Elected Member, Executive Committee of US LHC Users Association
- 2016: Organized career panel discussion for USLUA annual meeting
- 2016: Organized USLUA booth at ICHEP2018 Conference
- 2015: Organizer for USLUA annual meeting
- 2014: Observer Member, Executive Committee of US LHC Users Association

### Conference & Workshop Organization

- 2024: Co-chair of the Large Hadron Collider Physics Conference 2024 (LHCP2024), Northeastern University, Boston, MA

- 2024: Organizer for MID-ACT: Workshop on Taking Action for Mid-Career Women in Large Physics Collaborations, University of Tennessee, Knoxville, TN
- 2024: Organizer for Women in Technology Imposter Syndrome Workshop, CERN, Meyrin, Switzerland
- 2021 & 2022: Co-chair of the 5th & 6th Annual Women of Color in the Academy Conference, Northeastern University, Boston, MA
- 2019, 2020: Member of Planning Committee for Women of Color in the Academy Conference, Northeastern University, Boston, MA
- 2019: Co-chair of the 2019 Meeting of APS Division of Particles and Fields (DPF2019), Northeastern University, Boston, MA
- 2019: Organizer for Modern Trends in Particle Physics: A Conference In Honor of Pran Nath, May 2019, Northeastern University, Boston, MA
- 2021: Session convener for “Muon Detection and Precision Timing Detectors at the HL-LHC” at 2021 American Physical Society April Meeting (virtual)
- 2018: Session convener for “Physics at High Energies”, 2018 Conference on the Interactions of Particle and Nuclear Physics (CIPANP2018), Palm Springs, CA
- 2016: Poster judge for the 38th International Conference on High Energy Physics (ICHEP2018) conference poster session
- 2015: Organizer for 2015 USLUA Annual Meeting at Fermilab
- 2015: Session convener for “Detector R&D” at the APS Division of Particles and Fields Meeting (DPF2015), Ann Arbor, MI
- 2012: Session convener for “Standard Model and Higgs Physics” at the 36th International Conference on High Energy Physics (ICHEP2012), Melbourne, Australia
- 2010: Session convener for “Calorimetry” at the 12th Topical Seminar on Innovative Particle and Radiation Detectors (IPRD10), Siena, Italy

### **Conference Panels**

- 2024: Rising Stars Workshop Panelist, Columbia University
- 2024: Asian Americans in STEM Conference Panelist, Yale University

### **Presentations**

- 2023: Motivational talk for LHC Early Career Scientist Job Matching Event

### **Schools**

- 2012: Instructor at CMS Data Analysis School, Pisa, Italy

### 3.3 Service to the Community/Public

#### – Presentations

1. 2024: “Particle Physics at the High Energy Frontier: Exploring the Smallest Scales with the World’s Biggest Science Experiment, ”Presentation @ Museum of Science Asian American Heritage Month Celebration, Boston
2. 2023: “Exploring the High Energy Frontier: My Path to Physics with the World’s Largest Science Experiment,” plenary talk for the APS Conference for Undergraduate Women in Physics, Brown University
3. 2023: Workshop on Imposter Syndrome for the APS Conference for Undergraduate Women in Physics, Boston University
4. 2021: NU College of Science Connects Presentation: “Exploring the Smallest Scales with the World’s Biggest Science Experiments”
5. 2019: “Exploring the Smallest Scales with the World’s Biggest Science Experiments” presentation for HubWeek Open Days
6. 2019: Keynote talk for Girl Scout STEM Conference
7. 2019: Keynote talk for ADSE Community College Conference
8. 2014: The Music of the Higgs Boson guest lecture at Berklee College of Music
9. 2012: “The Art of the Higgs Boson” Lecture at TEDxUNIGE, “Empowering the Limitless Mind,” Geneva, Switzerland

#### – Articles

1. 2023: NYTimes article, “Particle Physicists Agree on a Road Map for the Next Decade”
2. 2023: CERN EP Newsletter article, “Upgrading the CMS Electromagnetic Calorimeter Readout Electronics for Phase-2”
3. 2022: New Scientist article, “How the Higgs Boson could reveal the fate of our universe
4. 2019: CERN EP Newsletter article, “The Higgs boson as a probe for new physics”

#### – Northeastern News, Interviews, etc

1. 2019: Northeastern News: “During CERN shutdown, Northeastern University physics professors work with global scientists to understand dark matter and other phenomena beyond the Standard Model”
2. 2015: NUSCI Magazine, “Northeastern faculty conducting research with CERN”
3. 2013: News@Northeastern, “Whats next for particle physicists, post-Higgs?”
4. 2013: NU multimedia presentation, Toyoko Orimoto: Searching the Next Frontier
5. 2013: NU College of Science Twitter Science Chat
6. 2012: News@Northeastern, “3Qs: Doomsday predictions debunked”

#### – Social Media

1. 2019: Instagram takeover of @cmsexperiment account for International Day of Women & Girls in Science
  2. 2017: Guest on @CMSVoices Twitter
  3. 2014: Symmetry magazine “Physicist to Follow” on Twitter
- Other Outreach
1. 2015 - present: Meetings with QuarkNet Master Classes
  2. 2016: K-12 Game-a-thon Judge for the Mind Research Institute
  3. 2014: Panel member for “Looking Back & Moving Forward - Future of the Women’s Movement Panel”
  4. 2012: Adopt-A-Physicist volunteer

### **3.4 Professional Development**

- 2022: Participated in Women of Color in the Academy Writing Retreat
- 2021: Participated in NU ADVANCE Research Leadership Development Initiative (ReDI) Leadership Program
- 2021: Attended NU ADVANCE workshop on: “How to Thrive When You’re the Only — in Your Department” by the National Center for Faculty Diversity and Development