

# Marco Guzzi: Curriculum Vitae

## Personal Information

### Field of interests

Theoretical Physics, Hadron Collider Phenomenology,  
Quantum Field theory of the strong interactions,  
BSM Phenomenology.

### Current Employment

**Associate Professor of  
Theoretical Particle Physics**  
Kennesaw State University  
Department of Physics  
370 Paulding Ave, #1204  
Kennesaw, GA 30144, U.S.A.

### Contact details

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From Aug 7 2017 to present  
Office Phone: +1 470-578-4783  
Office number: SC436

## Higher education

- **Full Member of the Graduate Faculty at Kennesaw State University.** Full Membership in the Graduate Faculty carries permission to teach courses in theoretical particle physics up to and including the doctoral level. **07/26/2021 - 10/31/2026**
- **Italian National Scientific Qualification for Associate Professor of Theoretical Physics of Fundamental Interactions** (Abilitazione Scientifica Nazionale) II Fascia, 02/A2 -Theoretical Physics of Fundamental Interactions - FIS/02 Theoretical Physics, Mathematical models and methods Italy, **28/03/2017 - 28/03/2023**
- **Ph.D.** University of Salento, Italy, **September 28, 2006**
  - Ph.D. Thesis: “QCD Studies at Hadron Colliders and in Deeply Virtual Neutrino Scattering”. e-Print: [hep-ph/0612355](https://arxiv.org/abs/hep-ph/0612355). Advisor: Prof. Claudio Corianò.
- **Master degree (Laurea)** in Theoretical Physics, University of Salento, Italy, **July 24, 2002**
  - Thesis: “Perturbative aspects of QCD in the presence of supersymmetry”. Advisor: Prof. Claudio Corianò.

## Peer reviewed articles

I have **105** citable papers available at: <https://inspirehep.net/literature?sort=mostrecent&size=25&page=1&q=find%20a%20guzzi%2C&ui-citation-summary=true>.

The total number of my citations is **11855** (as of Jan 6, 2026). My Hirsch "h" index is **32**.

I am the **4<sup>th</sup>** most cited faculty member at Kennesaw State University according to the Google Scholar record.

## Research Grants - Extramural Fundings

- National Science Foundation PHY-2412071, Kidonakis, N. (PI), Guzzi, M. (Co-PI), Grant, "Theoretical Calculations for Particle Physics at Hadron Colliders", \$360,000
- National Science Foundation PHY-2112025, Kidonakis, N. (PI), Guzzi, M. (Co-PI), Grant, "Particle Theory for High-Energy Collider Physics", Sep. 2021 - Aug. 2024, \$300,000
- National Science Foundation PHY-1820818, Guzzi, M. (PI) "Precision theory at the LHC: strong interaction dynamics and new physics searches", Sep. 2018 - Aug. 2021, \$108,830

## Awards and Honors

- Birla Carbon stipend of \$2,000 in June and \$2,000 in July (total: \$4,000) 2025, for Birla-Carbon award of KSU student Casey Hampson.
- Birla Carbon stipend of \$2,000 in June and \$2,000 in July (total: \$4,000) 2024, for Birla-Carbon award of KSU student Jonathan DeMont.
- Recipient of the KSU College of Science and Mathematics Outstanding Research and Creative Activity Faculty Award 2022 January 7, 2022 (College of Science Level).
- Recipient of the Kennesaw State University Outstanding Early Career Faculty Award 2021, April 6, 2021 (University Level).
- Recipient of the KSU College of Science and Mathematics Outstanding Early Career Faculty Award 2020/2021, January 8, 2021 (College of Science Level).

## Previous positions held

- **Assistant Professor of Theoretical Particle Physics.** Kennesaw State University. Kennesaw, GA, USA. **Aug. 2017 to Aug. 1, 2022.**
- **Postdoctoral Research associate** at the Elementary Particle Theory Group of the University of Manchester, United Kingdom. **Nov. 1, 2014 to Aug. 6, 2017 .** with Prof. Mike Seymour and Dr. Mrinal Dasgupta.
- **Postdoctoral Research associate: affiliated theorist of the CMS experiment**  
2-year position at DESY Hamburg, **Oct 1 2012 - Oct 31 2014**, Hamburg Germany with: Dr. Katerina Lipka (CMS group at DESY Hamburg), Prof. Sven-Olaf Moch (DESY Hamburg and University of Hamburg).
- **Postdoctoral Research associate**, 3-year position at Southern Methodist University **Sep 1 2009 - Aug 31 2012** , Dallas, USA. With: Prof. Pavel Nadolsky.
- **INFN Research Fellow:** 2-year position at INFN and Salento U. **Mar 1 2007 - Feb 28 2009**, Lecce, Italy. With: Prof. Claudio Corianò.
- **INFN Research Fellow:** 1-year position at INFN and University of Insubria, Como, Italy, **Sep. 1 2004 - Nov 30 2005** With: Prof. Philippe G. Ratcliffe.

## Visiting positions

- **Short-Term Visit. Invited** at the Erwin Schrödinger International Institute for Mathematical Physics (ESI), Vienna, Austria. **Jul 31- Aug 5, 2023.** “Quantum Field Theory at the Frontiers of the Strong Interaction”.
- **Short-Term Visit. Invited** at the Erwin Schrödinger International Institute for Mathematical Physics (ESI), Vienna, Austria. **19-25 July, 2021.** “Quantum Field Theory at the Frontiers of the Strong Interaction”. **Cancelled due to COVID-19**
- **Short-Term Visit. Invited** at University of Salento & INFN sez. Lecce, Lecce, Italy. **June 10 - Aug 2, 2020.** Collaboration with Prof. Claudio Corianò and the Lecce HEP Theory group. **Cancelled due to COVID-19**
- **Short-Term Visit. Invited** at DESY Hamburg & The CMS Collaboration, Hamburg, GE. **July 15 - July 22, 2020.** Coll. with Prof. K. Lipka and Prof. S.-O. Moch. **Cancelled due COVID-19.**

- **Short-Term Visit. Invited** at University of Salento & INFN sez. Lecce, Lecce, Italy. **June 8 - Aug 9, 2019**. Collaboration with Prof. Claudio Corianò and the Lecce HEP Theory group.
- **Short-Term Visit. Invited** at University of Salento & INFN sez. Lecce, Lecce, Italy. **June 21 - Aug 7, 2018**. Collaboration with Prof. Claudio Corianò and the Lecce HEP Theory group.
- **Short-Term Visit. Invited** at the Erwin Schrödinger International Institute for Mathematical Physics (ESI), Vienna, Austria. **24-29 July, 2016**. “Challenges and Concepts for Field Theory and Applications in the Era of LHC Run-2”.
- **Short-Term Visit.** DESY Hamburg, Germany. **8-14 July, 2016**. Collaboration with Prof. S.-O. Moch and Dr. K. Lipka (CMS Collaboration)
- **Short-Term Visit. Invited** at Southern Methodist University, Dallas, TX, USA. **April 20 - May 8, 2015**. Collaboration with Prof. Pavel Nadolsky and the CTEQ group.
- **Short-Term Visit. Invited** at Southern Methodist University, Dallas, TX, USA. **Feb 16 - March 10, 2014**. Collaboration with Prof. Pavel Nadolsky and the CTEQ group.
- **Short-Term Visit. Invited** as the “**Theorist of the week**”, **23-30 April 2012**, “**Physics of the Terascale**”, DESY Hamburg 04/24 and DESY Zeuthen 04/25.  
DESY’s “**Theorist of the week**” program brings a prominent theorist from around the globe to spend a week at the lab’s analysis center in Hamburg, Germany.
- **Short-Term Visit Invited** at the State University of New York at Stony Brook, NY USA. **April 10-15 2012**. Invited by Prof. John Hobbs, leader of the group performing the measurements of the mass of the  $W$  vector boson, (D0 experimental collaboration, Tevatron).
- **Short-Term Visit. Invited** at the University of “Tor Vergata” Rome **April 17 - 24, 2008**. Collaboration with the String theory group, Prof. F. Fucito.
- **Short-Term Visit. Invited** at the University of Liverpool UK, on Royal Society funds **Jan 27 2008 - Feb 15 2008**. Collaboration with Prof. Alon Faraggi
- **Short-Term Visit. Invited** at the University of “Tor Vergata” Rome **Nov 26 - 30, 2007**. Collaboration with the String theory group, Prof. F. Fucito.
- **Short-Term Visit. Invited** at the University of Liverpool UK, on Royal Society funds **Oct 14 2007 - Nov 2 2007**. Collaboration with Prof. Alon Faraggi
- **Short-Term Visit. Invited** at the University of Yoannina, Greece. **1 week, November 2005**. Collaboration with Prof. Kyriakos Tamvakis
- **Short-Term Visit. Invited** at the University of Crete, Greece. **3 weeks, March 2005**. Collaboration with Prof. Theodor Tomaras

## International Conferences and Talks

### Plenary Talks

- Talk given at “LoopFest 2025” LoopFest XXIII, Univ. of Alberta, Edmonton, Canada May 21-23, 2025.
- **Invited Speaker** at the “2025 Fall CTEQ Gathering”, Oct 21, 2025, Argonne National Laboratory Online.
- **Invited Speaker** at the “CTEQ Spring 2025 Meeting”, April 23, 2025. Online.

- Talk given at the “PDF4LHC” workshop, CERN, Swiss, Dec 2, 2024. Online.
- **Invited Speaker** at the “2024 Fall CTEQ meeting”. Christopher Newport U., VA, Nov 21 2024. Online.
- Talk given at “Higgs Cross Section Working Group” CERN, June 26, 2024 Online
- Talk given at the “QCD@Work2024 International Workshop on QCD Theory and Experiment”. Trani, Italy, June 08, 2024.
- Talk given at “LoopFest 2024”, Southern Methodist University, Dallas TX, May 21, 2024
- Talk given at the “PDF4LHC” workshop. CERN, Swiss, Nov 17 2023. Online.
- **Invited Speaker** at the “CTEQ meeting”. Michigan State U., MI, Jun 29 2023. Online.
- **Invited Speaker** at the “CTEQ annual meeting”. Fermilab, Batavia, IL, Nov 15 2022. Online.
- **Invited Speaker** at the “QCD@Work2022 International Workshop on QCD Theory and Experiment”. Lecce, Italy, June 2022.
- **Invited Speaker** at the “2nd Forward Physics Facilities Meeting”, online, May 28 2021.
- **Invited Speaker** at the “QCD@Work2020 International Workshop on QCD Theory and Experiment”. Lecce, Italy, June 2020. **Cancelled due to COVID-19**
- Talk given at the “BOOST2018 - 10<sup>th</sup> Conference on boosted objects” Talk: “Top taggers: an analytical perspective”. “Universite Pierre et Marie Curie” (UPMC), Paris, France, July 16-20, 2018
- **Invited Speaker** at the “QCD@Work International Workshop on QCD Theory and Experiment”. Talk: “Parton Distribution Functions with Intrinsic Charm and Other News from CTEQ”. 25-28 June 2018, “Ex Ospedale di San Rocco”, Matera, Italy.
- Talk given at the “Lancaster-Manchester-Sheffield Consortium for Fundamental Physics” meeting. Talk: “LHC precision challenges: structure of the proton, substructure of jets”. University of Sheffield, Hicks Building, Lecture Theatre E, Sheffield, United Kingdom, Jun. 20, 2017
- **Invited Speaker** at the “Epiphany 2017: Particle Theory meets first data from LHC run II” conference. Talk: “Impact of the HERA I+II combined data on the CT14 QCD global analysis”. 9-12 January 2017, “H. Niewodniczanski Institute of Nuclear Physics PAN”, Krakow, Poland.
- **Invited Speaker** at the “PSR2016, Parton Showers, Event Generators and Resummation” conference. Talk: “Threshold expansions and applications to differential top-quark pair production at the LHC: exploratory PDF analyses”. 4-6 July 2016, “Universite Pierre et Marie Curie” (UPMC), Paris, France.
- **Invited Speaker** at the “QCD@work2016” conference. Talk: “Recent developments in QCD global analyses of PDFs of the proton”, on behalf of the CTEQ collaboration. 27-30 June 2016, Martina Franca, Italy.
- **Invited Speaker** at the “From 1D Fragmentation towards 3D Correlated Fragmentation” conference. Talk: “Non-perturbative TMD parameters and the  $p_T$  spectra of electroweak bosons”, 26-30 October 2015, ECT\* (European Center for Theoretical Physics), Trento, Italy.
- **Invited Speaker** at the “XLV International Symposium on Multiparticle Dynamics”. Talk: “Parton distribution functions and the structure of the proton: the CT14 QCD global analysis”, 4-9 October 2015, Wildbad Kreuth, Germany.
- **Plenary Summary Talk - Invited Convener** for the Heavy-flavor session of DIS2015 conference. “DIS2015 XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects”, April 27 to May 1 2015, Southern Methodist University, Dallas, TX, USA.

- **Invited Speaker** at the “TOP LHC Working Group meeting”. Talk: “Phenomenology of top-quark pair production at the LHC: studies with DIFFTOP”, 12 - 13 January 2015, CERN Geneva.
- Talk given at the “Proton Structure in the LHC Era - School and Workshop”, Sep. 29 - Oct. 2 2014, DESY, Hamburg, Germany. Determination of Parton Distribution function of the proton with the DIFFTOP code.
- Talk given at the “Top Quark PAG Meeting” CERN, Geneva Aug 5 2014. Discussion with the experimental group involved in top-quark related analyses at the LHC CMS experiment.
- Talk given at the “PDF@CMS” workshop. CERN, Geneva July 17 2014.
- **Invited Speaker** at the “QCD@Work 2014, International Workshop on QCD, theory and experiment” workshop. 16-19 June 2014, Giovinazzo, (Bari), Italy.
- **Invited Speaker** at the “Studies of 3D structure of nucleon” conference. Feb 24-28, 2014 Institute for Nuclear Theory (INT), Seattle, USA.
- **Invited Speaker** at the “Physics at the Terascale” conference. Dec 2-4 2013 KIT, Karlsruhe, Gemany.
- **Invited Speaker** at the “Terascale Working-group Meeting: Semi-inclusive QCD Processes at the LHC” workshop. October 27-29 2013 Liebenberg (Berlin), Gemany.
- **Invited Speaker** at the “Flavor Structure of the Nucleon Sea” conference, European Center for Theoretical Physics, ECT\*, July 1-5, 2013 Villazzano, Trento, Italy.
- Talk given at the “QCD Evolution Workshop 2012” conference. May 14 - 17, 2012 Thomas Jefferson National Accelerator Facility Newport News, VA, USA.
- **Invited Speaker**, talk given at the “Winter Workshop on Recent QCD Advances at the LHC” workshop. Les Houches, France, February 13-18, 2011.
- Talk given at the “U.S. ATLAS Analysis Jamboree: UTA” workshop. University of Texas at Arlington, Arlington TX, USA, May 17-19, 2010.
- Talk given at the “CTEQ Meeting” workshop. Nov. 13, 2009, Northwestern University, Evanston, IL 60208, USA.
- **Invited Speaker** at the “Brainstorming and Calculation Shop on the Low Energy Frontier” workshop. DESY, Theory Group, Notkestrasse 85, Hamburg, Germany, 11-14 June 2008.
- Talk given at the “MCWS”, II Monte Carlo Workshop, Physics and Simulations at the LHC. INFN Frascati National Laboratories, Italy May 22-23 2006.
- Talk given at: “The International Workshop on Transverse Polarisation Phenomena in Hard Processes” (Transversity 2005), Villa Olmo Como, Sep. 7-10 2005.

### Parallel sessions

- **Invited Speaker** at “CIPANP2025”, 15th Conference on the Intersections of Particle and Nuclear Physics, University of Wisconsin-Madison, WI, USA. Title: “Subtraction and Residual PDFs: heavy-quark treatments in global QCD analyses”, June 9, 2025.
- **Invited Speaker** at “LHCP 2024” 12<sup>th</sup> edition of the LHC Physics Conference, Northeastern University, Boston, MA, USA. Title: “Progress in top-quark pair production cross section calculations and impact on PDFs”. June 05, 2024.
- Talk given at the “DIS2024 XXXI International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Grenoble, France. Title: “A GMVFN scheme for Z boson associated with a heavy quark production at hadron colliders”. April 09, 2024.

- Talk given at the “DIS2023 XXX International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Michigan State University. Title: “Top-quark pair production in global QCD analyses: updates from CTEQ”. East Lansing, MI, March 28, 2023.
- **Invited Speaker** at the “DIS2022 XXIX International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Virtual event at Santiago de Compostela, Spain. Title: “Charm- and bottom-quark production in central and forward LHC processes”. Online talk May 4, 2022.
- Talk given at the “DIS2022 XXIX International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Virtual event at Santiago de Compostela, Spain. Title: “13 TeV Top-quark pair production impact on CT18 PDFs of the proton”. Online talk May 4, 2022.
- **Invited Speaker** at the SnowMass2021 Energy Frontier Workshop EF03/EF06 - Talk title: “Probing heavy-flavor parton distribution functions at hadron colliders”. Brown University, remote talk. Mar 30, 2022
- **Invited Speaker** at the SnowMass2021 Energy Frontier Workshop EF03 - Restart, Talk title: “Heavy-flavor production in central and forward LHC processes”. Virtual event. Dec 16, 2021
- **Invited Speaker** at the SnowMass2021 Energy Frontier Workshop EF06 - Restart, Talk title: “Heavy-flavor production in central and forward LHC processes”. Virtual event. Dec 8, 2021
- **Invited Speaker** at the SnowMass2021 Energy Frontier Workshop - Restart, Talk title: “Top-quark pair production impact on CTEQ PDFs of the proton”. Virtual event. Sep 2, 2021
- Talk given at the European Physical Society conference on high energy physics 2021, EPS2021. Talk title: “Photon PDF and Impact from heavy-flavors in the CT18 global analysis”. Virtual event, hosted by DESY Hamburg and Hamburg University. Presenters: Keping Xie and Marco Guzzi for the CTEQ Collaboration, July 26, 2021
- Talk given at the “2021 Meeting of the Division of Particles and Fields of the American Physical Society (DPF2021)”. Conference, online. Hosted by Florida State University. July 12, 2021.
- Talk given at PHENO2021 Symposium” Conference, online. Hosted by The University of Pittsburgh May 24, 2021. Convener of the “Flavor I” parallel session on May 24 2021.
- Flash Talk given at the “DIS2021 XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Virtual event at SUNY at Stony Brook. NY, USA. April 13 2021.
- **Invited Speaker** at the “SnowMass2021” Workshop, Energy Frontier Group, Online Talk: “Constraining heavy-flavor PDFs at hadron colliders: an update”. 10 Dec 2020
- **Invited Speaker** at the “SnowMass2021” Workshop, Energy Frontier Group, Online Talk: “Constraining heavy-flavor PDFs at hadron colliders”. 07 July 2020
- Accepted abstract for a Talk at the “DIS2020 XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects” Conference. Stony Brook University, New York, NY, USA, April 2020. **Canceled due COVID-19.**
- Talk given at “CIPANP2018, Thirteenth Conference on the Intersections of Particle and Nuclear Physics”. Hyatt Regency Indian Wells, Palm Springs, CA, USA. May 28 - June 3 2018
- Talk given at the “DIS2017 XXV International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. University of Birmingham, Birmingham, United Kingdom. April 3-7 2017.
- **Invited speaker** at the “37th International conference on High energy Physics ICHEP 2014” conference. Valencia Conference Centre, Valencia, Spain. July 2-9, 2014.
- Talk given at the “DIS2014 XXII International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. University of Warsaw, Warsaw, Poland. April 28 to May 2 2014.

- Talk given at the “DIS2013 XXI International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Conference Centre of Marseilles, Provence, France. April 22th to 26th, 2013.
- Talk given at the “2011 Fall Joint Meeting Texas Section of **American Physical Society (APS)**” conference. October 06-08, 2011. Department of Physics and Astronomy Texas A& M University-Commerce, Commerce, TX, USA.
- Talk given at the “DIS2011 XIX International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Newport News Marriott at City Center Newport News, VA, USA. April 11-15, 2011.
- Talk given at the “Pheno 2010 Symposium” conference. University of Wisconsin, Madison, USA. 10-12 May, 2010
- Talk given at the “DIS2010 XVIII International Workshop on Deep-Inelastic Scattering and Related Subjects” conference. Convitto della Calza, Firenze, Italy, 19th - 23th April 2010.
- Talk given at the “IFAE 2009 (Incontri di Fisica delle Alte Energie 2009)” conference, Bari, Italy, 15-17 Apr 2009.
- **Invited speaker** for a talk given at the “I.F.A.E. (Incontri di Fisica delle alte Energie)” conference, Ex Convento di S. Cristina, Piazzetta G. Morandi 2, Bologna, Italy, 26-28 Mar 2008.
- Talk given at the “QCD@work 2007” workshop. International Workshop on Quantum Chromodynamics, Theory and Experiment. June 16-20 2007, Martina Franca (TA), Italy.

### Other conferences attended

- RADCOR-LoopFest 2021 (17-21 May 2021). Virtual event, SUNY at Stony Brook, NY, USA.
- Workshop “PDF4LHC meeting” 22-23 March 2021 Virtual Event, DESY, Hamburg, GE
- Conference “QCD@LHC 2013”, September 2-6, 2013, at DESY Hamburg, GE.
- Conference “QCD@LHC 2012”, September 2-6, 2013, DESY Hamburg, GE.
- Workshop “Proton Structure in the LHC era” Oct 22-24 2012, DESY Hamburg, GE.
- Conference: “Standard Model Benchmarks at the Tevatron and LHC”, Fermilab, Batavia IL, USA, 19-20 November, 2010
- Workshop: “The Physics of  $W$  and  $Z$  Bosons”, Riken BNL Research Center, Brookhaven National Laboratory, USA, 24-25 June 2010
- Conference: “LoopFest IX: Radiative Corrections for the LHC and Lepton Colliders”, Stony Brook State University of New York, New York, USA, 21-23 June 2010
- Conference: “Higgs Workshop”, Fermilab, Batavia IL, USA, Nov. 2009
- Conference: “Workshop on Gauge Theory and String Theory”, ETH Zürich, Switzerland, 2-4 July 2008.
- International Conference: “String Phenomenology 2007” INFN Frascati National Laboratories, June 4-8 2007

## Invited Seminars/Lectures

- “*Modern hadron colliders era: proton dynamics, the quest for precision and new physics searches*” Colloquium Seminar, Michigan State University, MI, USA. Nov 09, 2023.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, SCM2000, Kennesaw State University, Oct 24, 2023.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Seminar/Demonstration, PHYS 3011, Kennesaw State University, Apr 19, 2023.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, Kennesaw Mountain High School, Feb 17, Mar 17, May 12, 2023.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, Walton High School, May 05, 2023.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, Marietta’s Physics Merit Badge day. Kennesaw State University, Dec 10, 2022.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, SCM2000, Kennesaw State University, Nov 8, 2022.
- “*The Large Hadron Collider (LHC) Era: proton dynamics and new physics searches*” Colloquium Seminar, Georgia State University, GA, USA. Oct 18, 2022.
- “*Parton distribution functions of the proton. Introductory lectures 1, 2*” “CTEQ2019 Summer School”, University of Pittsburgh, PA, USA. July 16-22, 2019.
- “*Introductory lecture course on Quantum Chromodynamics*” “Department of Physics Seminars”, University of Salento, Lecce, Italy. July 08-11, 2019.
- “*Beyond the Standard Model physics at Hadron Colliders: constraints from QCD global analyses.*” “String Phenomenology Group Seminars”, University of Liverpool, Liverpool, UK. March 10, 2015.
- “*Top-quark pair production phenomenology at hadron colliders*”, “Liverpool High Energy Theory Divisional Seminars”, University of Liverpool, Liverpool, UK. March 11, 2015.
- “*News on top-quark pair production differential cross section: Phenomenological applications in QCD with the DiffTop code*”. Departmental seminar, Southern Methodist University, Dallas, TX, USA. May 6, 2015.
- “*Proton Structure and Hadron Collider Phenomenology: SM craters and BSM Physics*”. Seminar at the Experimental Particle Physics department University of Liverpool, Liverpool, UK. Nov 18, 2015
- “*Developments in the parton distribution functions of the proton and phenomenological applications at hadron colliders*” “Bohr Lunch Seminar University of Manchester”. Manchester UK. October 31, 2014.
- “*Top-quark production at the LHC: differential cross section and phenomenological applications*”. Departmental seminar, Southern Methodist University, Dallas, TX, USA. March 3, 2014.
- “*Heavy-flavor treatment at NNLO in CTEQ PDF analysis*”. DESY-Hamburg, April 24, 2012. **“Theorist of the Week”**
- “*Heavy-flavor treatment at NNLO in CTEQ PDF analysis*”. DESY-Zeuthen, April 25, 2012.
- “*Anomalous Extension of the Standard Model: Unitarity bounds on the D-brane models*”. Theoretical Physics Division, University of Liverpool, Liverpool UK. February 5, 2008.

- “*Z' Searches at the LHC: Some QCD Precision Studies*”. Dept. of Physics University of Liverpool, Liverpool UK. January 31, 2008.
- “*Z' Searches at the LHC*”. Theoretical Physics Division, University of Liverpool, Liverpool UK. October 16, 2007.

## Teaching experience

### Teaching/Mentoring activities at Kennesaw State University 2017-2026

**Spring 2026:** PHYS4260 “Quantum Mechanics II”, PHYS3110 “Directed Methods”, PHYS2211L “Principles of Physics I laboratory”.

**Fall 2025:** PHYS4270K “Computational Physics II”, PHYS2212L “Principles of Physics II Lab”, PHYS3110 “Directed Methods”.

**Spring 2025:** PHYS4260 “Quantum Mechanics II”, PHYS3110 “Directed Methods”.

**Fall 2024:** PHYS2212L “Principles of Physics II Lab”, PHYS1112L “Introductory Physics II Lab”, PHYS3110 “Directed Methods”.

**Spring 2024:** PHYS4260 “Quantum Mechanics II”, PHYS2212L “Principles of Physics II Lab”, PHYS3110 “Directed Methods”.

**Fall 2023:** PHYS2212 “Principles of Physics II”, PHYS2212L “Principles of Physics II Lab”, PHYS3110 “Directed Methods”.

**Spring 2023:** PHYS3500K “Computational Physics I”.

**Fall 2022:** PHYS2211 “Principles of Physics I”.

**Spring 2022:** PHYS3500K “Computational Physics I”, PHYS2211L “Principles of Physics I Lab”, PHYS3110 “Directed Methods”.

**Fall 2021:** PHYS3710 “Modern Physics”, PHYS2212L “Principles of Physics II Lab”.

**Spring 2021:** PHYS2212 “Principles of Physics II”, PHYS2212L “Principles of Physics II Lab”.

**Fall 2020:** PHYS3710 “Modern Physics”, PHYS1112L “Introductory Physics II Lab”.

**Spring 2020:** PHYS2211 “Principles of Physics I”, PHYS3110 “Directed Methods”.

**Fall 2019:** PHYS3710 “Modern Physics”, PHYS2212L “Principles of Physics II Lab”.

**Spring 2019:** PHYS2211 “Principles of Physics I”.

**Fall 2018:** PHYS3710 “Modern Physics”, PHYS1111L “Introductory Physics Lab I”, PHYS2211L “Principles of Physics I Lab”.

**Spring 2018:** PHYS2211 “Principles of Physics I”,

**Fall 2017:** PHYS2211 “Principles of Physics I”,

### Internship projects - KSU Affiliated activities

- Benjamin Gibson: “Elementary Particle Physics ”, Jan 2024 - May 2024.
- Bradley McGhee: “Elementary Particle Physics ”, May 2023 - Dec 2023.
- Andrew McEntaggart: “Hired as a Research intern at KSU”, July 2021 - May 2023.
- Andrew McEntaggart: “Studies in Quantum Field Theory II”, Oct 2020 - July 2021.
- Dustin Del Rosario: “Numerical implementation of the Drell-Yan process for studies at the LHC”. Aug 18 2020 - Dec 17 2020. (KSU student)
- Mr. Austen Day: “Elementary particle collisions and Fundamental interactions of Nature ”, Aug 31 - Nov 18 2020.
- Mr. Andrew McEntaggart: “Studies in Quantum Field Theory”, April 2020 - Oct 2020.
- Mr. Andrew McEntaggart: “Elementary Particle Theory and the Physics of the LHC”, Feb 1 - June 7 2019.

## National Science Foundation (NSF) grant affiliated activities

- Mr. Johnny DeMont Research Intern supported by the NSF Grant no. 2412071. Jan 1 2025 - June 2025. (Graduated at KSU)
- Mr. Matthew Garwacke Research Intern supported by the NSF Grant no. 2412071. Jan 31 2025 - present. (KSU student)
- Mr. Casey Hampson Research Intern supported by the NSF Grant no. 2412071. Jan 1 2025 - present. (KSU student)
- Mr. Andrew McEntaggart: Research Intern supported by the NSF Grant no. 2112025. July 6 2021 - May 2023. (Ga-Tech Student)
- Mr. Kener Barrantes: Undergrad. student research assistant supported by the NSF Grant no.: 1820818. Nov 11 2020 - Aug 31 2021. (KSU student)
- Mr. Dustin Del Rosario: Undergrad. student research assistant supported by the NSF Grant no.: 1820818. Aug 18 2019 - May 15 2020. (KSU student)

## Professional Service/Activity at Kennesaw State University 2018-2026

- Member of the Promotion and Tenure Committee (current);
- Served in the ad-hoc Committee Course Academy Transformation, KSU Physics;
- Served as Chair of the Department Faculty Council (DFC);
- Served in the Physics Curriculum Committee (PCC);
- Served in the College of Science and Mathematics (CSM) Activity and Awards Committee.

## Other Professional Service/Activity

- Referee of the Peer-review journals: Journal of High Energy Physics (JHEP), Physical Review D, Physical Review D - Letters, Physical Review Letters, European Physics Journal C (since 2011), Sci-Post, European Physics Journal C Plus, Chinese Physics C, Physics MDPI, International Journal of Modern Physics A, Nuclear Physics A, Symmetry.
- Referee of Grant Proposals submitted to the National Science Foundation.
- Affiliated Theorist of the CMS (Compact Muon Solenoid) Experimental Collaboration at the LHC, hosted in DESY Hamburg, Germany. This activity is done within a cooperative agreement between Kennesaw State University and DESY Hamburg.

## Teaching experience abroad

### Teaching duties at Manchester University 2014/2015 - 2015/2016

Teaching assistant (2 hours a week of teaching during term time). Tutoring two groups of five undergraduate students in second year BSc at the School of Physics and Astronomy.

**Physics core courses:** Introduction to Quantum Mechanics, Electromagnetism, Mathematics of Waves and Fields, Wave Optics, Solid State Physics, Thermal and Statistical Physics.

#### Summer Project supervision at Manchester U.

Mr. Paolo Pichini: "The content of the proton", The University of Manchester, UK. June 2016 - July 2016.

## Lecturing at Manchester U.

I functioned as a substitute lecturer and have given lectures and example classes on Lagrangian Dynamics and Advanced Dynamics in front of 200 first and second year students at the University of Manchester. The lectures were well received.

## Co-Supervision

Co-supervisor of the Master Thesis work of:

- Dr. Roberta Armillis, “*Neutral current analyses in extensions of the Standard Model*”, 2006-2007.
- Dr. Antonio Mariano, “*Extensions of the Next-to-Minimal Supersymmetric Standard Model*”, 2007-2008.

## Supervision and Mentoring

Students I have mentored during the preparation of their Master thesis at Salento U.:

- Dr. Giovanni Antonio Chirilli, (Ph.D. Old Dominion University),
- Dr. Emanuela Dimastrogiovanni, (Ph.D. University of Padua),
- Dr. Simone Morelli (Ph.D. - Univ. of Salento),
- Dr. Elisa Manno (Ph.D. - Univ. of Liverpool).

## Teaching at Salento U. 2007/2008

Teaching activity for graduate students of the theory group.

- 1-month course on “Spontaneous Symmetry Breaking and the Higgs Mechanism”,
- 1-month course on 1-loop calculations “A Higgs decay at 1-loop:  $H \rightarrow \gamma\gamma$ ”.