

Jeff Klukas

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Education

Ph.D. (Physics) University of Wisconsin · Madison, Wisconsin · May 2012 (anticipated) · Thesis topic: Search for exotic WZ resonances with leptonic decays in pp collisions at $\sqrt{s} = 7$ TeV.

B.S. Wittenberg University · Springfield, Ohio · May 2006 · Majors in physics and French language & literature · Summa Cum Laude · Departmental honors in physics · Thesis topic: Influencing dynamics in neural networks.

Teaching Experience

Lecturer · UW–Whitewater · 2010–2011 · Taught three 24-student sections of a tutorial-based introductory physics course for education majors and one section of a more traditional algebra-based introductory course for non-majors · Used online learning management system, online homework engine, and electronic response system.

MCAT Preparation Instruction · UW–Madison · 2009–2010 · Developed, managed, and taught a 30-hour module for a class of 20 pre-med students.

Teaching Workshop Developer · UW–Madison · 2007–2009 · Co-developed with Prof. Michael Winokur a training workshop to orient teaching assistants to use active techniques in their discussion sections.

Teaching Assistant · UW–Madison · 2006, 2009 · Facilitated discussion sections and lab exercises for first-semester introductory physics courses, both calculus and non-calculus based.

Physics & Mathematics Tutor · Naval ROTC, UW–Madison · 2007–2009 · Highly rated among students for drop-in tutoring six hours a week for all levels of physics and math.

Tutor · Wittenberg University · 2004–2006 · Drop-in tutoring in both physics and French.

Writing Advisor · Wittenberg University · 2004–2006 · Nominated by faculty and trained in techniques for one-on-one tutoring. The Writing Workshop is an integral part of the English program and a resource widely used for work in other departments across the curriculum.

Teaching Workshops

Forum of the Center for the Integration of Research, Teaching, and Learning · 2011 · UW–Madison · Two-day workshop focused on approaches to preparation of the nation's future faculty.

Opening Workshop for New STEM Educators · 2010 · Marshfield, Wisconsin · Attendance funded through UW–Whitewater · Two-day workshop focused on promoting strategies for active learning associated with increased success for members of underrepresented groups.

Teaching & Learning Symposium · 2010 · UW–Madison · Two-day workshop focused on sharing best practices for teaching and enriching the UW–Madison learning experience.

Teaching and Assessing Student Abilities Workshop · 2009 · Alverno College, Milwaukee, Wisconsin · Attendance invited through CIRTL · Day-long workshop investigating Alverno's abilities-based curriculum.

Teaching Presentations

Don Gillian-Daniel, Bob Mathieu, Mark Connolly, Jeff Klukas, and Adam Hoffman. **Meeting of the International Society for the Scholarship of Teaching & Learning**. Participated in a panel discussing the approach and experience of UW–Madison’s Delta program. 22 October, 2011.

Don Gillian-Daniel and Jeff Klukas. **Delta Teaching & Learning Philosophy Workshop**. Co-facilitated workshop for grads and postdocs preparing for the teaching job market. 30 September, 2011.

Jeff Klukas and Michael Winokur. **CIRTL Forum 2008** (Center for the Integration of Research, Teaching, and Learning): Aligning the Preparation of Graduate Students for STEM Early Faculty Careers. Presented poster showcasing cooperative group learning workshop. 16 June 2008.

Jeff Klukas and Michael Winokur. **UW–Madison Teaching and Learning Symposium Showcase**. Presented poster showcasing cooperative group learning workshop. 22 May 2008.

Jeff Klukas. **UW–Madison Physics Department**. Facilitated an original workshop for all new physics TAs on how to successfully lead cooperative group work. August 2007 & August 2008. **UW–Madison Engineering Teaching Improvement Program**. Adapted the same workshop for TAs across the STEM fields. January 2008 & January 2009.

Grants, Honors, Certificates, & Awards

CIRTL Network Exchange Fellow · 2010 · Funded to travel for a week to the University of Colorado at Boulder to present research work in both teaching and physics.

Vilas Travel Grant · 2009 · UW–Madison · Awarded for travel to the CERN laboratory in Geneva, Switzerland.

Delta Certificate in Research, Teaching, & Learning · 2009 · UW–Madison · Recognizing both experience in teaching and knowledge of foundational scholarship on teaching and learning.

Emanuel R. Piore Award · 2007 · UW–Madison · Recognizing the top score on the Department of Physics’ graduate qualifying exam.

Presidential Scholarship · 2005 · Wittenberg University · Awarded to top 3% of the junior class.

Weaver Prize · 2005 · Wittenberg University · Awarded to the junior physics major showing the greatest potential for a career in physics.

Research Experience

High-energy particle physics · CMS experiment at the Large Hadron Collider · Ongoing since 2006 · Worked in analysis looking for technicolor, extra dimensions, and unification through the $W^\pm + Z \rightarrow \ell^\pm + \nu_\ell + \ell'^+ + \ell'^-$ channel · Contributed to maintenance of the muon trigger system through software validation, performance studies, and taking shifts at the detector.

Biophysics · Indiana University · Summer 2005 · Developed software to detect neuron firing patterns in slices of rat brain *in vitro*; results published in the 2006 Wittenberg *Spectrum* nonfiction literary magazine.

Cultural studies · Dakar, Senegal, West Africa · Spring 2005 · Conducted an independent study investigating the relative importance of national, ethnic, socioeconomic, and gender identities to residents of Dakar through interviews and participant observation; results published in the 2006 Wittenberg *Spectrum* nonfiction literary magazine.

Selected Publications

In the high-energy physics community, journal articles bear the names of everyone in the collaboration (2000+ for CMS); you can find a full list of my CMS publications on the [Inspire Literature Database](#). Individual effort is catalogued by internal analysis notes (bearing only the names of those directly involved), some of which lead to public analysis summaries.

BOOK CHAPTERS

John Beggs, Jeffrey Klukas, and Wei Chen. **Connectivity and dynamics in local cortical networks**. In *Handbook of Brain Connectivity*, pages 91–116. Springer Berlin / Heidelberg, 2007.

PUBLIC ANALYSIS SUMMARIES

The CMS Collaboration. **Search for W' (or techni- ρ) to WZ** . CMS Physics Analysis Summary [CMS-PAS-EXO-11-041](#), 2011.

The CMS Collaboration. **Measurement of the WW , WZ , and ZZ cross sections at CMS**. CMS Physics Analysis Summary [CMS-PAS-EWK-11-010](#), 2011.

The CMS Collaboration. **Search for Technicolor with the CMS experiment**. CMS Physics Analysis Summary [CMS-PAS-EXO-09-007](#), 2009.

ANALYSIS NOTES

Vuko Brigljevic, Tulika Bose, Cory Fantasia, Jeff Klukas, Christos Leonidopoulos, Yurii Maravin, Srecko Morovic. **Search for Exotic WZ resonances at CMS**. CMS Analysis Note AN-2011/333.

Aytul Adiguzel, Vuko Brigljevic, Tulika Bose, Claude Charlot, Nicola De Filippis, Senka Duric, Cory Fantasia, Jeff Klukas, Arabella Martelli, Srecko Morovic, Salvatore Tupputi. **Measurement of the WZ cross section at the CMS experiment**. CMS Analysis Note AN-2011/259.

L. Agostino et al. **The 2009 CMS trigger reviews**. CMS Analysis Note AN-2010/022.

A. Everett, R. Bellan, C. Botta, T. Danielson, Z. Gecse, J. Klukas, D. Miller, N. Neumeister, J. Richman, A. Svyatkovskiy, D. Trocino, J.R. Vlimant, H. Yoo. **Muon high-level trigger in CMS**. CMS Analysis Note AN-2010/234.

N. Adam, V. Brigljevic, T. Bose, E. Carrera, S. Duric, V. Halyo, M. Herndon, J. Klukas, Y. Maravin, S. Morovic, T. Svintradze. **Search for Technicolor with the CMS Experiment**. CMS Analysis Note AN-2009/099.

Outreach

UW–Madison Physics Fair · 2011 · Organized display to introduce families to particle physics and the physics program of the Large Hadron Collider.

The Wonders of Physics · 2008–2009 · UW–Madison · Helped in preparation and performance of a free physics demonstration show, attracting nearly 3000 visitors annually.

References

Matt Herndon · Graduate Advisor, UW–Madison · herndon@hep.wisc.edu · 608-262-8509 · 1150 University Avenue, Madison, WI, 53706

Steven Sahyun · Chair, Department of Physics, UW–Whitewater · sahyuns@uww.edu · 262-472-5113 · 800 W Main Street, Whitewater, WI, 53190

Don Gillian-Daniel · Delta Associate Director, UW–Madison · dldaniel@wisc.edu · 608-265-9969 · 1645 Linden Drive, Madison, WI, 53706