Jason A. Kamin

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CONTACT INFORMATION
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CITIZENSHIP
USA

CURRENT EMPLOYMENT

University of Illinois at Chicago, Chicago, IL, USA

Postdoctoral Research Associate (stationed at CERN) *April 2015 to present*

- Experimental Nuclear Particle Physicist for the CMS experiment at CERN.

  Investigating initial and final state nuclear effects via heavy flavor production in p+p, p+Pb, and Pb+Pb. Design, validation, implentation of heavy ion (HI) triggers. Wrote/maintain CMS trigger emulation software for full trigger correlation matrices. Geometric modeling of nuclear overlap function and Glauber HI centrality variables. Analyses: Z-jet correlations in Pb+Pb; DPS double-quarkonia correlations in p+Pb. Development of statistical tools for HI.

EDUCATION

Stony Brook University, Stony Brook, NY USA

Ph.D., Experimental Nuclear Physics *September 2012*

- *A Search for Charm and Beauty in a Very Strange World* *7 Aug 2012*

  Dielectron Mass and p_T Spectra in d+Au Collisions in PHENIX at RHIC.

M.A., Physics and Astronomy *December 2006*

Hampshire College, Amherst, MA USA

B.A., Physics and Astronomy *May 2004*

- Senior Thesis: *Performance Studies of Serial and Parallel Gas Distribution Systems in Monitored Drift Tube Chambers for the ATLAS detector at LHC, CERN*

TEACHING EXPERIENCE

CERN, Genève, Switzerland

Summer Student Supervisor *2013-2014*

- Advisee: Alena Loesle - *Material Budget Estimation Using Zero-Field Data*
- Advisee: Miguel Campos - *Fast-MC development for PHOS and EMCal at ALICE*
- Advisee: Malte Hecker - *Neutral pion reconstruction w/ full efficiency calc. in PHOS*

PhD Student Mentor *2013-2015*

- Advisee: Haitao Zhang - *Neutral pion invariant yield in the EMCal, pp ($\pi^0 \rightarrow \gamma\gamma$)*
- Advisee: Hongsheng Zhu - *Neutral pion invariant yield in the PHOS, p-Pb ($\pi^0 \rightarrow \gamma\gamma$)*

Helmholtz Research School, Frankfurt, Germany

Instructor/Lecturer *2012*

- Lecture-week for 1^{st} and 2^{nd} year graduates students in Bosau, Germany.
- Organized and implemented daily lectures (Intro to Experimental Research).
- Designed and instructed hands-on daily research activities.

Stony Brook University, Stony Brook, NY USA

Master's Student Supervisor *2011-2012*

- Advisee: Morgan Lynch - *Systematic uncertainty calculations for dilepton measurements*

Teaching Assistant *August 2004 to June 2005*

- Physics 121/122 - Undergraduate Physics Laboratory.

REU Summer Student Supervisor *2004, 2005, 2006, 2007*

- Rebuild/upgrade of Hadron Blind Detector for PHENIX.
- CsI photocathode production and quantum efficiency testing facility.
- Technique development for thin-film CsI evaporation.
- Fast-MC implementation for PHENIX.

Private Tutoring, Long Island, NY USA
Physics Tutor - high school through undergraduate level *2006 to 2010*

Hampshire College, Amherst, MA USA
Teaching Assistant - Hampshire College *2002 to 2003*

- Physics 1 & 2 - Undergraduate Physics and Laboratory.
- Physics of Musical Acoustics.

RESEARCH EXPERIENCE

Goethe Universität Frankfurt AM Main, Frankfurt, Germany
Postdoctoral Research Associate (stationed at CERN) *Oct 2012 to April 2015*

- Convener for EMCal Neutral Meson Working Group.
- π^0 spectral analysis in p+p and p+Pb collisions.

  Investigating "cold" nuclear matter baseline for neutral pion production at unprecedented LHC energies. Pion data from both p+p and p+Pb collisions are vital as fundamental baselines for direct photon, dilepton, and other measurements.
- Energy calibrations for the electromagnetic calorimeter in ALICE.

  Overall calorimeter energy calibration based on test-beam data, GEANT3 monte carlo simulations, and real data.
- Member in good standing of ALICE Collaboration

Stony Brook University, Stony Brook, NY USA
Research Assistant with PHENIX *May 2005 to Sept 2012*

- Invariant mass spectra of e^+e^- pairs in $p + p$ and $d + Au$ collisions.

  Established the crucial "cold" nuclear matter baseline for observed heavy ion phenomena in the dielectron mass spectrum from the Quark-Gluon Plasma. Pioneered a measurement of the charm ($\sigma_{c\bar{c}}$) and beauty ($\sigma_{b\bar{b}}$) cross-sections for inelastic d+Au collisions utilizing next-to-leading order pQCD calculations.
- Design, construction and commissioning of the Hadron Blind Detector.

  4.5 years experience with all aspects of GEM cleaning, testing and assembly including clean room and ultra-dry glovebox techniques, high-vacuum chambers, crystal deposition, gas systems and high voltage operation including automation software development.
- Member in good standing of PHENIX Collaboration

Research Experience for Undergraduates,
NSF Physics Summer Program *2003*

- Investigation of the Cronin Effect in relativistic heavy ion collisions at RHIC

  The magnitude of the Cronin Effect, an empirical p_T dependent particle suppression in heavy ion collisions, is observed to exhibit a mass ordering. This project attempted to explain the phenomenon with a simple picture of relativistic kinematics.

Laboratori Nazionali di Frascati, Frascati, Italia
DOE-NSF/INFN Fellowship *Aug 2003 to Nov 2003*

- Test beam data analysis for the muon spectrometer in the ATLAS detector at the LHC at CERN
- Supervisor - Dr. Bellisario Esposito

OUTREACH

CERN/Fermilab Summer School Discussion Leader
Moderated post-lecture discussion/Q&A sessions for heavy ions *2015*

Official ALICE Tour Guide
Lead public/private tours of ALICE detector & underground cavern facility *2013 to 2015*

International Masterclass Moderator
Moderate video-conferencing for high school students analyzing LHC data *2014 to present*

High School Science Fair Judge
Long Island Science and Engineering Fair - Physics/Space *2008*

Publications as Leading Author/ Contributor

1. **Improved Monte Carlo Glauber results for nuclear collisions at the LHC and beyond**
   D. D'enterria, J. Kamin, C. Loizides. *in preparation for journal submission* **2017**

2. **Study of Z+jet correlations in PbPb and pp collisions at $\sqrt{s_{NN}} = 5.02$ TeV**
   V. Khachatryan *et al.* [CMS Collaboration] *submitted to PRL* **2017**

3. **Neutral meson production at high-p_T in pp collisions at $\sqrt{s_{NN}} = 2.76$ TeV**
   B. Abelev *et al.* [ALICE Collaboration] *submitted to EPJC* **2017**

4. **Neutral pion production at midrapidity in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV**
   B. Abelev *et al.* [ALICE Collaboration] *Eur.Phys.J C, 74:3108* **2014**

5. **Performance of the ALICE Experiment at the CERN LHC**
   B. Abelev *et al.* [ALICE Collaboration] *Int.J.Mod.Phys. A29, 1430044* **2014**

6. **The Cross Section for $b\bar{b}$ Production in d+Au Collisions at $\sqrt{s_{NN}} = 200$ GeV**
   A. Adare *et al.* [PHENIX Collaboration] *Phys.Rev.C91:014907* **2015**

7. **Nuclear modification of ψ', χ_c, and J/ψ production in d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**
   A. Adare *et al.* [PHENIX Collaboration] *Phys.Rev.Lett.111.202301* **2013**

8. **Direct photon production in d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV**
   A. Adare *et al.* [PHENIX Collaboration] *Phys.Rev.C87:054907* **2013**

9. **Design, Construction, Operation and Performance of a Hadron Blind Detector for the PHENIX Experiment**
   W. Anderson *et al.* *NIM A, Vol 646.1* **2011**

10. **Detailed measurement of the e^+e^- pair continuum in p+p and Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV and implications for direct photon production**
    A. Adare *et al.* [PHENIX Collaboration] *Phys.Rev.C81:034911* **2010**

11. **Enhanced production of direct photons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV and implications for the initial temperature**
    A. Adare *et al.* [PHENIX Collaboration] *Phys.Rev.Lett.104:132301* **2010**

12. **Dilepton mass spectra in p+p collisions at $\sqrt{s} = 200$ GeV and the contribution from open charm**
    A. Adare *et al.* [PHENIX Collaboration] *Phys.Lett.B670:313-320* **2009**

As member of PHENIX Collaboration, 106 publications.
As member of ALICE Collaboration, 81 publications.
As member of CMS Collaboration, 5 publications.

Conference Proceedings

13. **Hot and Cold Nuclear Effects in p-Pb Collisions at the LHC**
    Jason A. Kamin *Eur.Phys.J.95:03018* **2015**

14. **Characterizing cold nuclear matter effects through dielectrons in d + Au collisions at $\sqrt{s} = 200$ GeV at PHENIX**
    J. Kamin *et al.* *J.Phys.G38:124181,2011.* **2011**

15. **A Hadron Blind Detector for the PHENIX experiment at RHIC**
    Jason A. Kamin for the PHENIX Collaboration *Eur.Phys.J.C49:177-180* **2007**

INVITED COLLOQUIA/ SEMINARS/ PUBLIC TALKS

1. **International Conference on High Energy Physics** Chicago, Illinois, USA - *Aug 2016*
   Double Parton Scattering at hadron colliders

2. **ECT* - New Observables in Quarkonium Production** Trento, IT - *Mar 2016*
   Quarkonium-Pair Production at the SPS, the Tevatron and the LHC

3. **Southern Methodist University Physics Seminar** Dallas, Texas, USA - *Oct 2015*
   Quarkonia in Heavy Ions

4. **QCD@LHC 2015** London, UK - *Sept 2015*
   Quarkonia Results in Heavy Ions from CMS

5. **International Conference on New Frontiers in Physics** Kolymbari, GR - *Aug 2014*
   Hot and Cold Nuclear Matter Effects in p-Pb Collisions at the LHC

6. **Nuclear Physics Colloquium** Goethe-Universität Frankfurt, DE - *June 2013*
   Dileptons at RHIC

7. **Heavy Quark Production** Utrecht, NL - *Nov 2012*
   Heavy Flavor Dileptons at PHENIX

8. **Quark Matter '11** Annecy, FR - *May 2011*
   Characterizing Cold Nuclear Matter Effects Through Dielectrons in $d + Au$ Collisions at PHENIX

9. **ECT* - EM Probes of Strongly Interacting Matter** Trento, IT - *Sept 2010*
   Photons and Dileptons from RHIC

10. **ECT* - EM Probes of Strongly Interacting Matter** Trento, IT - *Sept 2010*
    Hadron Blind Detector: Upgrade to the PHENIX Dielectron Program

11. **RIKEN BNL Research Center Workshop** Ridge, New York, USA - *May 2010*
    Photons and Dileptons: What Have We Learned at RHIC?

12. **APS - April Meeting** Washington, DC, USA - *Feb 2010*
    Characterizing Cold Nuclear Matter Effects Through Dielectrons in $d + Au$ Collisions at PHENIX

13. **APS - DNP '09** Waikoloa Village, Hawaii, USA - *Oct 2009*
    Characterizing Cold Nuclear Matter Effects Through Dielectrons in $d + Au$ Collisions at PHENIX

14. **Quark Matter '09** (poster) Knoxville, Tennessee, USA - *Apr 2009*
    Dielectron Continuum in $p+p$ Collisions at $\sqrt{s} = 200GeV$ measured by PHENIX at RHIC

15. **APS - DNP '08** Oakland, California, USA - *Oct 2008*
    Dielectron Continuum in $p+p$ Collisions at $\sqrt{s} = 200GeV$ measured by PHENIX at RHIC

16. **Hot Quarks '06** Sardegna, IT - *May 2006*
    A Hadron Blind Detector for the PHENIX Experiment at RHIC

Internal collaboration talks and presentations omitted.

TECHNICAL REPORTS / INTERNAL NOTES

CMS Internal Analysis Notes

1. *Centrality and Event Plane reconstruction for pPb 2016 data at 5 and 8 TeV* — *2016*
2. *Study of Z+jet correlations in PbPb and pp collisions at* $\sqrt{s_{\rm NN}} = 5.02$ *TeV* — *2016*
3. *Centrality and Event Plane reconstruction for PbPb collisions at 5 TeV in 2015* — *2015*

ALICE Internal Analysis Notes

1. *High* p_T *Merged-Cluster* π^0 *with ALICE EMCal in pp collisions at* $\sqrt{s} = 2.76$ *TeV* — *2015*
2. *Estimating Material Budget Mismatch for TRD and TOF* — *2014*
3. π^0 *Measured by the EMCal in p-Pb collisions at* $\sqrt{s_{NN}} = 5.02$ *TeV* — *2014*
4. *High* p_T π^0 *Measurement in* $\sqrt{s} = 2.76$ *TeV pp Collisions* — *2014*
5. π^0 *Measured by the EMCal in pp collisions at* $\sqrt{s} = 2.76$ *TeV* — *2013*

PHENIX Internal Analysis Notes

6. PYTHIA *and* MC@NLO *simulations for Run8 d+Au dielectron analysis for* $b\bar{b}$ *cross-section extraction at* $\sqrt{s_{NN}} = 200$ *GeV* — *2013*
7. *Measurement of dielectrons in* $p + p$ *collisions in Run9* — *2012*
8. *Calibration of the Drift Chamber Response in* GEANT *using the J/*ψ *and* ϕ *Peaks* — *2011*
9. *Dielectron Continuum in d+Au Collisions at* $\sqrt{s_{NN}} = 200$ *GeV* — *2009*

COMPUTING & SOFTWARE

Languages: C/C++/STL, python, Fortran
Operating Systems: Unix/Linux, MAC OSX, Windows/DOS
Scripting: csh, perl/Tk
Web: HTML, PHP, XML, twiki
Scientific Software: ROOT, CERNLIB, LaTeX, MathCad
Event Generators: PYTHIA, MC@NLO
Databases: SQL, PostgreSQL
Batch Queue Systems: LSF, Condor

HARDWARE & ELECTRONICS

Front-End Electronics, High Voltage, DAQ:
NIM & CAMAC modules, Lecroy, VME, signal processing, various oscilloscopes (analog and digital).

Clean Room Assembly/Maintenance:
Built and maintained Level 1 Clean Room conditions for GEM assembling, handling and HV testing.

Gas Electron Multipliers:
Design/construct/commissioned the Hadron Blind Detector (HBD) upgrade at PHENIX, the first large-scale photosensitive GEM detector used in a major collider experiment. >4 years experience working directly with GEMs.

Thin-Layer Crystal Deposition:
Evaporated 300 nm layers of photosensitive CsI onto GEM surfaces. Evaporation performed in high vacuum ($\sim 3 \times 10^{-6}$ P). Quantum Efficiency testing and monitoring.

Glovebox Handling/Techniques:
Logged >1000 hours operating large volume (3 m^3) glovebox with <30 ppm of H_2O dry nitrogen environment.

High Pressure Gas Systems, Plumbing, Electrical Wiring, High Vacuum:
High pressure Ar, CO_2, CF_4, N utilized for detector flow and backfilling of vacuum vessels. Vacuum cleaning/storage of GEMs and equipment. 4 years experience working with compressed air tools (auto repair garage).

Workshop/Machine Shop:
Electrical wiring/soldering, large/small scale drilling, metal construction/manipulation including general workshop skills.