Vince Cianciolo
Curriculum Vitae, 10/3/2015

Personal Data

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Executive Summary

Technical expertise in high-precision, large channel-count nuclear particle detectors.
Significant project management and line management experience.
Leadership roles in major experiments covering a wide range of fundamental nuclear physics.

Professional Experience

Group Leader, Physics Division, Oak Ridge National Laboratory 2002-present

- *Line management responsibility (program development, budget, safety, scientific output) for group with 8-10 staff members, annual budget of $3-4M.*
- *Nurtured fundamental neutron physics research program at the Spallation Neutron Source.*

Research Staff Member, Oak Ridge National Laboratory 1997-present

– nEDM Project Manager 2009-present

- *Project management responsibilities for experiment to improve measurement of neutron electric dipole moment by two orders of magnitude.*

– nEDM Collaboration Member 2009-present

- *Carried out R&D and analysis of neutron scattering in non-metallic vacuum window materials, activation of experimental components, backgrounds due to ambient gamma rays, optimization of operating magnetic field and temperature, techniques for blind analysis of experimental data, development of specialized electrodes and optimization of cryogenic light collection.*

– nEDM ORNL ES&H Representative 2006-2009

- *Produced CD-1 Preliminary Hazard Identification Analysis document.*

– Member, nEDM Publications Committee 2006-2009

- *Provide internal review of all nEDM publications.*

– Member, nEDM Executive Council 2006-present

- *Provide scientific guidance for the experiment.*

– Chair, PHENIX Low-energy Task Force 2008

- *Outlined scientific directions for PHENIX during the low-energy scans motivated by the search for the QCD critical point.*

– Member, PHENIX Speaker's Bureau 2004-2005, 2007-2009

- *Secure optimum representation for PHENIX at scientific conferences, ensure talks distributed equitably.*

– Member, PHENIX Executive Council 2004-2006

- *Provide scientific guidance for the experiment.*

– Co-convenor, PHENIX Heavy Flavor Physics Working Group 2002-2004

- *Guide and vet physics analyses; push to publication.*

– Subsystem Manager, PHENIX VTX Stripixel Front-end Electronics 2005-2009

- *Responsible for detailed design of electronics chain from detector to standard PHENIX Data Acquisition interface modules; served as expert consultant for associated production and commissioning (~250,000 channels).*

– PHENIX Publication Responsibilities 2000-present

- *Paper Preparation Groups (14) – Small group of scientists tasked with producing a publication once related analysis approved.*
- *Internal Review Committees (4) – Small group of scientists tasked with internal review of a publication before submission to a refereed journal.*

– Member PHENIX Shift Task Force 1999

- *Defined shift personnel and associated responsibilities, determined shift format and collaboration shift requirements.*

– Subsystem Manager, PHENIX Muon Identifier Front-end Electronics 1997-2012

- *Responsible for detailed design of electronics chain from detector to standard PHENIX Data Acquisition interface modules; responsible for associated production and commissioning (~8,000 channels).*

– Subsystem Expert, PHENIX Muon Identifier 1997-2012

- *Responsibility for on-call assistance and on-site shifts.*
- *Coordinated with RHIC accelerator physicists to identify and minimize beam-related backgrounds.*

– Coordinating physicist, PHENIX Muon Identifier Mechanics 1997-1998

- *Conducted R&D to optimize operating parameters (gas, high voltage) and final design; local supervision of ~$4M construction and installation of Muon Identifier detector panels (~40 people) that was on the critical path for the completion of RHIC.*

Postdoctoral Research Associate, Lawrence Livermore National Laboratory 1995-1996

- *Participated in the design, construction, operation and analysis of the E910 Experiment to measure the centrality-dependence of particle production in proton nucleus collisions.*
- *Developed capacitive beam position monitor for heavy-ion fusion accelerator prototype.*

Postdoctoral Research Associate, Massachusetts Institute of Technology 1994

- *Performed Monte Carlo sensitivity analysis for the PHOBOS experiment.*

Education

Massachusetts Institute of Technology, Ph.D. (Physics) 1988-1994

- *Thesis: "Bose-Einstein Correlations of Kaons in 14.6 A·GeV Si+Au Collisions"*
- *First BEC measurement with kaons; developed high-level triggering; significant development of experiment's GEANT-based Monte Carlo code and infrastructure; developed data analysis software suite.*

University of Michigan, Ann Arbor, B.S., Honors (Physics) 1984-1988

- *Thesis: "β Decay of ^{187}Rhenium"*
- *Developed Rhenium-coated anode for SWPC; responsible for data collection and analysis.*

Honors Received

Presidential Early Career Award for Scientists and Engineers 2001

- *"For innovative definition of a unique measurement program for an experiment on the Relativistic Heavy Ion Collider and leadership in organizing and designing a principal detector that has been implemented at the facility"*

Lockheed Martin Technical Achievement Award 1999

- *"For innovative definition of a unique measurement program for an experiment on the Relativistic Heavy Ion Collider and leadership in organizing and designing a principal detector that has been implemented at the facility"*

Grants Received

ORNL LDRD - $670k 2013

- *"High-voltage Electrode Development for a neutron Electric Dipole Moment Experiment at the SNS."*

ORNL Seed Money - $190k 2012

- *"Optimization of Light Collection Efficiency from Liquefied Noble Gases."*

ORNL/NCSU Joint Seed Money - $150k 2004

- *"Development of a Position-Sensitive Neutron Detector for Use at the High Flux Source Facilities: SNS and HFIR"*

ORNL Seed Money - $125k 2003

- *"Development of Readout Electronics Architecture for a Silicon Strip Vertex Detector Upgrade to the PHENIX Experiment."*

Synergistic Activities

Reviewer for: DOE, NSF, Physical Review, IEEE TNS	1995-present
Co-organizer, Workshop on Neutron EDM Experimental Techniques	2012
Member, Nuclear Science Advisory Committee	2008-2010
Member, Quark Matter 2009 Organizing Committee	2009
Deputy Program Chair, IEEE Nuclear Science Symposium	2006
Co-organizer, RHIC Heavy Flavor Workshop	2004

Memberships

American Physical Society, Division of Nuclear Physics	1988-present
nEDM Collaboration	2003-present
PHENIX Collaboration	1997-present
E910 Collaboration	1995-2003
E802 Collaboration	1988-2003

References

Doug Beck	dhbeck@illinois.edu
David Dean	deandj@ornl.gov
Brad Filippone	bradf@caltech.edu
Geoff Greene	ggreene@utk.edu
Glenn Young	gyoung@jlab.org
Bill Zajc	zajc@nevis.columbia.edu

Selected Publications

Selection requires significant contribution.

1. "Cold nuclear matter effects on heavy-quark production at forward and backward rapidities in d+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV", A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, to be published in Phys. Rev. Lett. (2014).
2. "Quadrupole anisotropy in dihadron azimuthal correlations in central d+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV", A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **111**, 212301 (2013).
3. "Nuclear-Modification Factor for Open-Heavy-Flavor Production at Forward Rapidity in Cu+Cu Collisions at $\sqrt{s_{NN}}$ = 200 GeV", A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **C86**, 024909 (2012).
4. "Discovering the New Standard Model: Fundamental Symmetries and Neutrinos", V. Cianciolo *et al*. (White Paper for 2012 Fundamental Symmetries and Neutrinos Town Meeting), http://arxiv.org/pdf/1212.5190v1 (2012).
5. "Ground and Excited Charmonium State Production in p+p Collisions at $\sqrt{s}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **D85**, 092004 (2012)**.**
6. "Heavy Quark Production in p+p and Energy Loss and Flow of Heavy Quarks in Au+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **C84**, 044905 (2011).
7. "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), including V. Cianciolo, Phys. Rev. Lett. **104**, 132301 (2010).
8. "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), including V. Cianciolo, Phys. Rev. **C81**, 034911 (2010).
9. "Dilepton Mass Spectra in p+p Collisions at $\sqrt{s}$ = 200 GeV and the Contribution from Open Charm," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Lett. **B670**, 313 (2009).
10. "J/Ψ Production in $\sqrt{s_{NN}}$ = 200 GeV Cu+Cu Collisions," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **101**, 122301 (2008).
11. "Radiation Damage Study for PHENIX Silicon Stripixel Sensors," J. Asai et al., including V. Cianciolo, http://arxiv.org/abs/0710.2676 (2007).
12. "Enhancement of the Dielectron Continuum in $\sqrt{s_{NN}}$ = 200 GeV Au+Au Collisions," S. Afanasiev *et al*. (PHENIX Collaboration), including V. Cianciolo, nucl-ex arXiv 0706.3034 (2007).
13. "Measurement of Single Muons at Forward Rapidity in p+p Collisions at $\sqrt{s}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **D76**, 092002 (2007).
14. "J/Ψ Production in Au+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **98**, 232301 (2007).
15. "J/Ψ Production Versus Transverse Momentum and Rapidity in p+p Collisions at $\sqrt{s}$ = 200 GeV," A. Adare *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **98**, 232002 (2007).
16. "Production of ω Mesons at Large Transverse Momentum in p+p and d+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **C75**, 051902 (2007).

17. "Azimuthal Angle Correlations for Rapidity Separated Hadron Pairs in d+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **96**, 222301 (2006).
18. **"**Nuclear Modification of Single Electron Spectra and Implications for Heavy Quark Energy Loss in Au+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **96**, 032301 (2006).
19. "Nuclear Modification Factors for Hadrons at Forward and Backward Rapidities in d+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **94**, 082302 (2005).
20. "J/Ψ Production in $\sqrt{s_{NN}}$ = 200 GeV Au+Au Collisions," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **C69**, 014901 (2004).
21. "Production of ϕ mesons at Mid-rapidity in $\sqrt{s_{NN}}$ = 200 GeV Au+Au Collisions at RHIC," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. **C72,** 014903 (2005).
22. "J/Ψ Production in p+p Collisions at $\sqrt{s}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **92**, 051802 (2004).
23. "Centrality Dependence of Charm Production from Single Electrons in Au+Au Collisions at $\sqrt{s_{NN}}$ = 200 GeV," S.S. Adler *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **94**, 082301 (2005).
24. "Formation of Dense Partonic Matter in Relativistic Nucleus-Nucleus Collisions at RHIC: Experimental Evaluation by the PHENIX Collaboration. Status of our Program to Create, Detect and Characterize Quark-Gluon Plasma," K. Adcox *et al*. (PHENIX Collaboration), including V. Cianciolo, Nucl. Phys. **A757**, 184 (2005).
25. "PHENIX Muon Arms," H. Akikawa *et al*., including V. Cianciolo, Nucl. Instrum. **A499,** 537 (2003).
26. "Centrality Dependence of π+/-, K+/-, p and p(bar) Production from $\sqrt{s_{NN}}$ = 130 GeV Au+Au Collisions at RHIC," K. Adcox *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **88**, 242301 (2002).
27. "Measurements of Single Electrons and Implications for Charm Production in Au+Au Collisions at $\sqrt{s_{NN}}$ = 130 GeV," K. Adcox *et al*. (PHENIX Collaboration), including V. Cianciolo, Phys. Rev. Lett. **88**, 192303 (2002).
28. "Measuring Centrality with Slow Protons in Proton Nucleus Collisions at the AGS," I. Chemkin *et al*. (E910 Collaboration), including V. Cianciolo, Phys. Rev. **C60**, 024902 (1999).
29. "Status of Experiments Leading to a Small Recirculator," T.C. Sangster *et al*., including V. Cianciolo, Nucl. Inst. Meth. **A415**, 310 (1998).
30. "Bose-Einstein Correlations of Kaons in Si+Au Collisions at 14.6 A·GeV," Y. Akiba *et al*. (E802 Collaboration), including V. Cianciolo, Phys. Rev. Lett. **70**, 1057 (1993).
31. "Two-Particle Rapidity Correlations from the Bose-Einstein Effect in Central ^{28}Si + Au Collisions at 14.6 A·GeV/c and Intermittency," Y. Akiba *et al*. (E802 Collaboration), including V. Cianciolo, Phys. Rev. **C56**, 1544 (1997).
32. "Impurity Effects on Adhesive Energies," J. R. Smith and T. V. Cianciolo, Surf. Sci. Lett. **210**, L229 (1989).

Conferences / Presentations

Only invited presentations at international conferences are included.

1. HCP'08, Galena, IL, May 2008
   Invited Talk ("Heavy Flavor Physics at RHIC")

2. DNP'03 (APS Division of Nuclear Physics Workshop on QCD, Confinement and Heavy Ion Physics), Tucson, AZ, October 2003
   Invited Talk ("J/Ψ and Open Charm Production in Heavy Ion Collisions")

3. ECT*2002 Charm Workshop, Trento, Italy, June 2002
   Invited Talk ("PHENIX: Current Results and Future Capabilities for Heavy Flavor Production in Relativistic Heavy Ion Collisions")

4. WWND'97 (Thirteenth Winter Workshop on Nuclear Dynamics), Marathon, FL, 1-8 February 1997
   Invited Talk ("Recent Results from Experiment E910")