

Activity Report, Calendar Year 2011 (includes Fall 2010)

Name: Wouter Deconinck

Major Contributions:

Wouter Deconinck taught two problems sessions in fall 2010, one undergraduate course in spring 2011, and one graduate course in fall 2011. He served on one PhD committee. Wouter has been working with one PhD student on a running experiment at Jefferson Lab. He became co-author on 7 collaboration publications (an additional 5 submitted), and author of 1 conference proceedings contribution. Since fall 2010 Wouter has served on the graduate admissions committee, and since fall 2011 he is serving on the computer committee as well. Wouter is the PI on the Physics Department's REU grant together with co-PI Jack Kossler.

Scholarly and Professional Activities-Research:

Invited Talks:

- "The Qweak Experiment: a Search for New Physics at the TeV Scale," DSPIN-2011, Dubna, Russia.

Contributed Talks/Posters:

- "Recent Results and Future Plans from the A4 Experiment," APS April 2011 meeting.

Refereed Papers Published:

- "Multidimensional Study of Hadronization in Nuclei." A. Airapetian *et al.*, Eur.Phys.J. A47 (2011) 113.
- "Single Spin Asymmetries in Charged Pion Production from Semi-Inclusive Deep Inelastic Scattering on a Transversely Polarized ^3He Target." X. Qian *et al.*, Phys.Rev.Lett. 107 (2011) 072003.
- "Inclusive Measurements of Inelastic Electron and Positron Scattering from Unpolarized Hydrogen and Deuterium Targets." A. Airapetian *et al.*, JHEP 1105 (2011) 126
- "Ratios of Helicity Amplitudes for Exclusive ρ^0 Electroproduction." A. Airapetian *et al.*, Eur.Phys.J. C71 (2011) 1609.
- "Measurement of azimuthal asymmetries associated with deeply virtual Compton scattering on a longitudinally polarized deuterium target." A. Airapetian *et al.*, Nucl.Phys. B842 (2011) 265-298.
- "Effects of transversity in deep-inelastic scattering by polarized protons." A. Airapetian *et al.*, Phys.Lett. B693 (2010) 11-16.
- "Exclusive Leptoproduction of Real Photons on a Longitudinally Polarised Hydrogen Target." A. Airapetian *et al.*, JHEP 1006 (2010) 019.

Unpublished Reports:

- "The Qweak Experiment: a Search for New Physics at the TeV Scale." W. Deconinck, Proc. of the 14th Advanced Research Workshop on High-Energy Spin Physics (DSPIN-2011), Dubna, Russia (in press).
- "Measurement of the Neutron Radius of ^{208}Pb Through Parity-Violation in Electron Scattering." S. Abrahamyan *et al.*, arXiv:1201.2568.
- "Measurement of the virtual-photon asymmetry A_2 and the spin-structure function g_2 of the proton." A. Airapetian *et al.*, arXiv:1112.5584.
- "Beam-Target Double Spin Asymmetry A_{LT} in Charged Pion Production from Deep Inelastic Scattering on a Transversely Polarized ^3He Target at $1.4 < Q^2 < 2.7 \text{ GeV}^2$." J. Huang *et al.*, arXiv:1108.0489.
- "New Precision Limit on the Strange Vector Form Factors of the Proton." Z. Ahmed *et al.*, arXiv:1107.0913.

Grants and Awards:

As PI:

- NSF: 07/01/2011-06/30/2014, \$512,958 (denied).
- NIST Precision Measurement Grant, Spring 2011 (denied).
- Jeffress Memorial Trust, Spring 2011: 07/01/2011-06/30/2012, \$30,000 (denied).
- W&M Summer Research Grant: Summer 2011 (approved).

- NSF: 06/01/2012-05/31/2015, \$535,621 (pending).
- DOE Early Career: 07/01/2012-06/30/2017, \$778,112 (pending).
- NSF REU (co-PI: Jack Kossler): 06/01/2012-05/31/2014, \$180,000 (approved).
- W&M Summer Research Grant: Summer 2012 (approved).

As co-PI:

- Brookhaven National Lab Electron-Ion Collider R&D (PI: Dipangkar Dutta, Mississippi State University): 06/01/2012-05/31/2015, \$138,000 (denied).

Teaching:

Courses:

- Fall 2010: Phys107P (two sessions), "Physics for the Life Sciences," teaching effectiveness: 4.38 & 4.38.
- Spring 2011: Phys301/ApSc445, "Intro to Mathematical Physics," teaching effectiveness: 3.89 (first time).
- Fall 2011: Phys601, "Classical Mechanics," teaching effectiveness: 4.00 (first time).

Senior/Honor Theses (none)

Summer Research Students (none)

Graduate Students:

- Juan Carlos Cornejo: Compton polarimetry for the Qweak experiment at JLab, started Fall 2009, anticipated graduation Fall 2013.

Post Docs (none)

Service:

Department:

- Fall 2010-present: Graduate admissions committee
- Fall 2011-present: Computer committee
- January 2011: Dissertation defense committee Stephen Coleman
- Hosted four colloquium speakers (two of whom are APS fellows)

University:

- Fall 2011: Scientific advisor for Environmental Science and Policy course, "Media Production for Scientists."

Physics Community:

- Coordinator for electron beam polarimetry at the Electron-Ion Collider.
- Co-organizer (with Armstrong) of Qweak collaboration meeting at W&M (5 days, 50 attendees).
- PI on Jefferson Science Associates Initiatives Fund "Promising Young Physicist" project: selection of JLab postdocs for mock job interviews, including review and feedback on job application dossiers and presentations.
- LGBT issues/gender diversity: co-organizer discussion session at APS April 2011 meeting, co-organizer invited session (with APS Committee on Minorities and Status of Women in Physics) at APS March 2012 meeting.

Public Outreach:

- Reader for the Virginia Junior Academy of Science science fair, Spring 2011.
- Co-organizer PhysicsFest, Fall 2011.
- Participant PhysicsFest "on the road" at Berkeley Middle School, Fall 2011.