



(CONFERENCE)

New Directions in the Foundations of Physics

Mathematical Association of America Carriage House

1781 Church Street NW, Washington, DC

May 11 - 13, 2012

Sponsored by the University of Maryland, College Park (College of Arts and Humanities, Logic and Philosophy of Science Research Group of the Philosophy Department, Institute for Physical Science and Technology), Georgetown University (Graduate School, Georgetown College, Philosophy Department), and Johns Hopkins University Philosophy Department, with the support of the Max Planck Institute for the History of Science, Berlin, and coordinated through the Foundations of Physics Group (University of Maryland at College Park, Johns Hopkins University, Georgetown University).

Friday, May 11

Session 1 (Morning):

Can the Quantum State be Interpreted Epistemically: I?

Chair :

TERRY RUDOLPH

Physics, Imperial College

9:30 - 10:50 ["On the reality of the quantum state"](#)

**MATTHEW
PUSEY**

Physics
Imperial College
London

10:50 - 11:10 Coffee Break

11:10 - 12:30 ["Is a system's wave function in one-to-one correspondence with its elements of reality?"](#)

**ROGER
COLBECK**

Institute for
Theoretical Physics
ETH, Zurich

12:30 - 2:30 Lunch

Session 2 (Afternoon):

Can the Quantum State be Interpreted Epistemically: II?

Chair :

JON BARRETT

Mathematics, Royal Holloway

2:30 - 3:50 - ["Poking and prodding the PBR result"](#)

**ALLEN
STAIRS**

Philosophy
U Maryland

3:50 - 4:10 Coffee Break

4:10 - 5:30 - ["Why I am not a psi-ontologist"](#)

**ROB
SPEKKENS**

Perimeter Institute
Waterloo, Canada

7:00 - midnight Buffet Party

Saturday, May 12

**Session 3 (Morning):
Space and Time**

Chair :

WAYNE MYRVOLD

Philosophy, University of Western Ontario

9:30 - 10:50 - ["Rethinking Principia"](#)

**SIMON
SAUNDERS**

Philosophy of
Physics
Oxford

10:50 - 11:10 Coffee Break

11:10 - 12:30 - ["Explaining' inertial motion and the foundations of classical space-time theories"](#)

**JAMES
WEATHERALL**

Logic and
Philosophy of
Science, UC-Irvine

12:30 - 2:30 Lunch

**Session 4 (Afternoon):
Time and Quantum Mechanics: I**

Chair :

HARVEY BROWN

2:30 - 3:50 - ["The limits of correspondence: How the methods of quantum mechanics proved insufficient in electrodynamics \(1925-1932\)"](#)

CRISTOPH LEHNER, ALEXANDER BLUM

Max Planck
Institute
for the History of
Science, Berlin

3:50 - 4:10 Coffee Break

4:10 - 5:30 - ["Proper time before relativity – from Fermat's Principle to the Pauli phase"](#)

JÜRGEN RENN, DON SALISBURY, ALEXANDER BLUM

Max Planck
Institute
for the History of
Science, Berlin

Sunday, May 13

Session 5 (Morning): Time and Quantum Mechanics: II

Chair :

MATHIAS FRISCH

Philosophy, University of Maryland

9:30 - 10:50 - ["The past of a quantum particle"](#)

LEV VAIDMAN

Physics
Tel Aviv University

10:50 - 11:10 Coffee Break

11:10 - 12:30 - ["Quantum theory without beables: a desert pragmatist view"](#)

RICHARD HEALEY

Philosophy
University of
Arizona

Confirmed discussants include: Newshaw Bahreini (Physics, U Albany), Howard Barnum (Physics and Astronomy, University of New Mexico), Jonathan Barrett (Mathematics, Royal Holloway), Katherine Boyce-Jacino (Humanities Center, JHU), Howard Brandt (US Army Lab), Dieter Brill (Physics, UMD), Harvey Brown (Philosophy of Physics, Oxford), Jeffrey Bub (Philosophy and IPST, UMD), Eric Cavalcanti (School of Physics, University of Sydney), William Demopoulos (Philosophy, U Western Ontario), Rob DiSalle (Philosophy, U Western Ontario), Lucas Dunlap (Philosophy, UMD), Michael Fisher (Physics and IPST, UMD), Mathias Frisch (Philosophy, UMD), Shelley Goldstein (Mathematics, Rutgers), Philip Goyal (Physics, SUNY-Albany), Alexei Grinbaum (CEA-Saclay, SPEC/LARSIM), Genco Guralp (Philosophy, JHU), Melissa Jacquart (Philosophy, U Western Ontario), Michel Janssen (Hist of Science, U Minnesota), Michael Jarrett (Physics, UMD), Ruth Kastner, Adrian Kent (DAMTP, Cambridge), Michael Kiessling (Mathematics, Rutgers), Fred Kronz (NSF), Paul Lopata (LPS, UMD), Tracy Luper (Philosophy, James Madison), James Mattingly (Philosophy, Georgetown U), Tim Maudlin (Philosophy, NYU), Vishnya Maudlin (Philosophy, Rutgers), Charles Misner (Physics, UMD), Florin Moldoveanu (LPS Research Group, UMD), Alberto Montina (Perimeter Institute), Wayne Myrvold (Philosophy, U Western Ontario), Tom Pashby (HPS, U Pittsburgh), Terry Rudolph (Physics, Imperial College), Rob Rynasiewicz (Philosophy, JHU), Steve Savitt (Philosophy, UBC), Michiel Seevinck (Quantum Probability Research Group, Radboud U, Nijmegen), Noel Swanson (Philosophy, Princeton), Morgan Tait (Philosophy, U Western Ontario), Jos Uffink (Philosophy, U Minnesota), David Wallace (Philosophy of Physics, Oxford), Ken Wharton (Physics and Astronomy, San Jose State), Adrian Wüthrich (HPS, U Pittsburgh).

The conference will take place at the Mathematical Association of America Carriage House Conference Center at 1781 Church Street NW in Washington, DC, a block from Dupont Circle. For general information about Washington, DC, see [WashingtonInfo](#).

The number of participants is limited by available seating, so we regret that participation is by invitation only.

For further information, contact James Mattingly at jmm67@georgetown.edu.

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