

**ASSOCIATION FOR SYMBOLIC LOGIC**  
**2010 NORTH AMERICAN ANNUAL MEETING**

George Washington University  
Washington DC

March 17-20, 2010

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Program Committee: W. Gasarch, J. Hamkins, A. Kolesnikov, R. Rynasiewicz, P. Selinger, R. Solomon (Chair).

Local Organizing Committee: J. Chubb, A. Enayat, A. Eskandarian, M. Friend, J. Goodrick, V. Harizanov (Chair), A. Kolesnikov.

Please see [www.gwu.edu/~as12010](http://www.gwu.edu/~as12010) for additional information.

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All lectures will be held in the MPA building on the campus of George Washington University. Registration and the book exhibit will be in Room 267 Monroe Hall (2115 G Street NW). Coffee and refreshments will be in the 2nd Floor Lobby of Monroe Hall.

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WEDNESDAY, MARCH 17

Morning, MPA B07

- 8:15 – 8:45 Registration (267 Monroe Hall), Coffee and Snacks (2nd Floor Lobby Monroe Hall)
- 8:45 – 9:00 Opening Remarks
- 9:00 – 10:00 Invited Lecture: **Dilip Raghavan** (University of Toronto), *Cofinal types of ultrafilters*
- 10:15 – 11:15 Invited Lecture: **Rebecca Weber** (Dartmouth College), *Degree invariance in the  $\Pi_1^0$  classes*
- 11:30 – 12:30 Tutorial Lecture 1: **Bob Coecke** (Oxford University), *Quantum information processing: a new light on the quantum formalism and quantum foundations*

Afternoon, MPA 305, 309, 310

- 2:00 – 3:40 Special sessions: Categorical Logic, Model Theory, Set Theory. *See pages 3, 4, 5.*
- 4:00 – 6:00 Contributed talks: Sessions A, B, C. *See page 6.*
- 6:00 – 7:30 Welcoming Reception

## THURSDAY, MARCH 18

### Morning, MPA B07

- 8:30 – 9:00 Registration, Coffee and Snacks (Monroe Hall)  
9:00 – 10:00 Invited Lecture: **Zoé Chatzidakis** (Université Paris 7), *Some consequences of the Canonical Base Property*  
10:15 – 11:15 Invited Lecture: **Bjørn Kjos-Hanssen** (University of Hawai'i at Mānoa), *Democracy is the best form of randomness extraction*  
11:30 – 12:30 Tutorial Lecture 2: **Bob Coecke** (Oxford University), *Quantum information processing: a new light on the quantum formalism and quantum foundations*

### Afternoon, MPA 305, 309, 310

- 2:00 – 3:40 Special sessions: Categorical Logic, Logic and Foundations of Physics. *See pages 3, 4.*  
4:00 – 6:00 Contributed talks: Sessions D, E, F. *See page 7.*

## FRIDAY, MARCH 19

### Morning, MPA B07

- 8:30 – 9:00 Registration, Coffee and Snacks (Monroe Hall)  
9:00 – 10:00 Invited Lecture: **Lawrence S. Moss** (Indiana University), *Natural logic*  
10:15 – 11:15 Invited Lecture: **Henry Towsner** (University of California, Los Angeles), *Infinite models for finite combinatorics*  
11:30 – 12:30 Tutorial Lecture 3: **Bob Coecke** (Oxford University), *Quantum information processing: a new light on the quantum formalism and quantum foundations*

### Afternoon, MPA B07, 305, 309, 310

- 2:00 – 3:00 Gödel Lecture (MPA B07) **Alexander Razborov** (University of Chicago), *Complexity of propositional proofs*  
3:30 – 5:50 Special sessions: Computational Complexity, Logic and Foundations of Physics, Model Theory, Set Theory. *See pages 3, 4, 5.*

## SATURDAY, MARCH 20

### Morning, MPA B07

- 8:30 – 9:00 Registration, Coffee and Snacks (Monroe Hall)  
9:00 – 10:00 Invited Lecture: **Nicolaas P. Landsman** (Radboud University Nijmegen), *Intuitionistic quantum logic*  
10:15 – 11:15 Invited Lecture: **Ernest Schimmerling** (Carnegie Melon University), *Inner model theory*  
11:30 – 12:30 Invited Lecture: **Tom Scanlon** (University of California, Berkeley), *The logic of differentiating numbers*

## Special Sessions on Categorical Logic

Session A, WEDNESDAY, MARCH 17  
MPA 309

- 2:00 – 2:30 **Steve Awody** (Carnegie Mellon University), *Homotopy type theory*  
2:35 – 3:05 **Robin Cockett and Xiuzhan Guo** (University of Calgary),  
*Reconstructing a theorem of Boris Schein*  
3:10 – 3:40 **Robert Paré** (Dalhousie University), *Double categories of models*

Session B, THURSDAY, MARCH 18  
MPA 309

- 2:00 – 2:30 **Michael Shulman** (University of Chicago), *Unbounded quantifiers via  
2-categorical logic*  
2:35 – 3:30 **Michael Makkai** (McGill University), *Model theory for essentially  
algebraic 2-dimensional categories*

## Special Session on Computational Complexity

FRIDAY, MARCH 19  
MPA 309

- 3:30 – 4:00 **Jin-Yi Cai** (University of Wisconsin–Madison), *Computational complexity  
theory and holographic algorithms*  
4:05 – 4:35 **Kenneth W. Regan** (University of Buffalo), *High-degree polynomials and  
arithmetic lower bounds*  
4:40 – 5:10 **Ryan Williams** (IBM Almaden Research Center), *Time-space lower  
bounds for NP-hard problems*  
5:15 – 5:45 **Nisheeth Vishnoi** (Microsoft Research), *Computational models optimal  
assuming the unique games conjecture*

## Special Session: Logic and Foundations of Physics

Session A, THURSDAY MARCH 18  
MPA 310

- 2:00 – 2:30 **Samson Abramsky** (Oxford University), *Coalgebras, Chu spaces, and representations of physical systems*  
2:35 – 3:05 **Maarten Van den Nest** (Max Planck Institute), *Quantum computations that can be simulated classically*  
3:10 – 3:40 **Noson Yanofski** (Brooklyn College), *An operadic view of computation*

Session B, FRIDAY, MARCH 19  
MPA B07

- 3:30 – 4:00 **Bob Coecke** (Oxford University), *Quantum structuralism and pictorialism*  
4:05 – 4:35 **John Harding** (New Mexico State University), *Daggers, kernels, Baer \*-semigroups, and orthomodularity*  
4:40 – 5:10 **Peter Selinger** (Dalhousie University), *Planar traced categories*  
5:15 – 5:45 **Allen Stairs** (University of Maryland), *Could logic be empirical?*

## Special Session: Model Theory

Session A, WEDNESDAY MARCH 17  
MPA 310

- 2:00 – 2:30 **John Goodrick** (University of Maryland), *The Schröder-Bernstein property for weakly minimal theories*  
2:35 – 3:05 **Jana Maříková** (Western Illinois University), *Valuations on o-minimal fields*  
3:10 – 3:40 **Salih Azgin** (McMaster University), *Reverse quantifier elimination for valued fields*

Session B, FRIDAY, MARCH 19  
MPA 310

- 3:30 – 4:00 **Alice Medvedev** (University of Illinois at Chicago), *Groups in  $T_A$*   
4:05 – 4:35 **Alex Wilkie** (Oxford University), *Semi-germs of definable holomorphic functions*  
4:40 – 5:10 **Alf Dolich** (East Stroudsburg University), *On notions of “dependence minimality”*  
5:15 – 5:45 **Sergei Starchenko** (University of Notre Dame), *On definability of Riemann theta functions*

## Special Sessions on Set Theory

Session A, WEDNESDAY MARCH 17

MPA 305

- 2:00 – 2:30 **Andreas Blass** (University of Michigan),  *$F_\sigma$ -generic ultrafilters*  
2:35 – 3:05 **Bart Kastermans** (University of Colorado, Boulder), *Formalizing set theory*  
3:10 – 3:40 **Joel David Hamkins** (The College of Staten Island), *Set-theoretic geology*

Session B, FRIDAY, MARCH 19

MPA 305

- 3:30 – 4:00 **Natasha Dobrinen** (University of Denver), *Tukey types of ultrafilters*  
4:05 – 4:35 **John Krueger** (University of North Texas), *On the weak reflection principle*  
4:40 – 5:10 **Martin Zeman** (University of California, Irvine), *Inner model reflection*  
5:15 – 5:45 **Jindrich Zapletal** (University of Florida), *Homogeneous sets of outer measure one*

## CONTRIBUTED TALKS

Session A, WEDNESDAY, MARCH 17  
MPA 310

- 4:00 – 4:25 **William C. Calhoun** *Turing degrees of  $K_m$ -trivial reals*  
4:30 – 4:55 **Mingzhong Cai** *Array nonrecursiveness and relative recursive enumerability*  
5:00 – 5:25 **Paul Shafer** *Coding second-order arithmetic into the closed Medvedev degrees*  
5:30 – 5:55 **Wesley Calvert, Russell Miller\*** *BSS-reducibility and algebraic real numbers*

Session B, WEDNESDAY, MARCH 17  
MPA 309

- 4:00 – 4:25 **Jean-Martin Albert** *Hilbert spaces over non-archimedean fields*  
4:30 – 4:55 **Ahuva C. Shkop** *Schanuel's conjecture and algebraic roots of exponential polynomials*  
5:00 – 5:25 **Vincent Guingona** *Dependence, isolated extensions and definability of types*  
5:30 – 5:55 **Lynn Scow** *The relationship of Ramsey classes to the modeling property for certain generalized indiscernible sequences*

Session C, WEDNESDAY, MARCH 17  
MPA 305

- 4:00 – 4:25 **Martín Escardó, Paulo Oliva\*** *Instances of bar recursion as products of selection functions*  
4:30 – 4:55 **James Worthington** *Determinizing, forgetting, and automata in monoidal categories*  
5:00 – 5:25 **Peter Lefanu Lumsdaine** *Fixed point theorems, constructively*  
5:30 – 5:55 **François G. Dorais, Carl Mummert\*** *Stationary and convergent strategies in Choquet games*

Session D, THURSDAY, MARCH 18  
MPA 310

- 4:00 – 4:25 **Rodney G. Downey, Asher M. Kach, Steffen Lempp\*, Daniel C. Turetsky** *Comparing effective notions of categoricity, Part I*  
4:30 – 4:55 **Rodney G. Downey, Asher M. Kach, Daniel C. Turetsky\*** *Comparing effective notions of categoricity, Part II*  
5:00 – 5:25 **Tyler Markkanen** *Separating the degree spectra of structures*  
5:30 – 5:55 **Tamara Lakins** *Ramsey's theorem for trees*

Session E, THURSDAY, MARCH 18  
MPA 309

- 4:00 – 4:25 **Justin Brody** *On rational limits of Shelah-Spencer graphs*  
4:30 – 4:55 **Karel Hrbacek** *Nonstandard analysis based on the concept of level*  
5:00 – 5:25 **Can Başkent** *Completeness of public announcement logic in topological spaces*  
5:30 – 5:55 **Benedikt Löwe** *Patterns of cofinality and measurability on small uncountable cardinals*

Session F, THURSDAY, MARCH 18  
MPA 305

- 4:00 – 4:25 **Jaakko Hintikka** *Definitions require quantifier independence*  
4:30 – 4:55 **Matthew P. Szudzik** *The computable universe hypothesis*  
5:00 – 5:25 **Katalin Bimbó** *Rational semantics for an extension of  $R_+$*   
5:30 – 5:55 **Andrea Pedemferri** *Second order categoricity and invariance*