

ASSOCIATION FOR SYMBOLIC LOGIC
2018 NORTH AMERICAN ANNUAL MEETING

Western Illinois University
Macomb, Illinois

May 16 -19, 2018

Program Committee: T. Carlson, B. Csima, T. Eisworth, M. Glanzberg, I. Kalantari, D. Marker (Chair), M. Soskova.

Local Organizing Committee: J. Chisholm, R. Dimitrov, C. Ealy, D. Haugen, I. Kalantari (Chair), D. LaFountain, J. Marikova, S. Martinelli, M. Moniri, G. Pettit, B. Powell, C. Pynes, N. Vakil, G. Weitkamp, L. Welch.

Please see <http://www.wiu.edu/cas/math/asl-conference-2018> for additional information.

The conference will take place primarily in Morgan Hall.

All plenary and tutorial lectures will be held in Morgan Hall 109. All special session and contributed talks will be in Morgan Hall 220, 222, 226, 228 and 230. The welcoming reception will be held at 6:45 pm on Wednesday, May 16 in the William Brattain Lounge of the Western Illinois University Union. The conference banquet will be held at 6:30 pm on Friday, May 18 in the Ballroom of the Western Illinois University Union.

WEDNESDAY, May 16

Morning

- 9:00 – 9:45 Registration, Coffee and Snacks.
- 9:45 – 10:00 Opening Remarks
- 10:00 – 11:00 Invited Lecture: **Bradd Hart** (McMaster), *In defence of ultraproducts*.
- 11:15 – 12:15 Tutorial: **Theodore Slaman** (University of California, Berkeley), *Recursion theory and Diophantine approximation I*

Afternoon

- 2:00 – 4:00 Special Sessions A1, B1, C1, D1 and E1. See pages 3–6.
- 4:15 – 5:15 Invited Lecture: **Julia Knight** (Notre Dame), *Roots of polynomials in fields of generalized power series*.
- 5:25 – 6:30 Karp Prize Presentation and Lecture.
- 6:40 – 6:45 Group Photo: Sherman Hall steps.
- 6:45 – 9:30 Welcoming Reception: Western Illinois University Union – William Brattain Lounge.
- 8:30 – 11:00 ASL Council Meeting: Western Illinois University Union – Board Room.

THURSDAY, May 17

Morning

- 8:00 – 9:00 Coffee and Snacks.
9:00 – 11:00 Special Sessions A2, B2, C2, D2 and E2. See pages 3–6.
11:15 – 12:15 Invited Lecture: **Dima Sinapova** (University of Illinois, Chicago),
Stronger tree properties and the SCH.

Afternoon

- 2:00 – 3:00 Tutorial: **Andrew Marks** (UCLA), *Descriptive set theory and geometrical paradoxes I.*
3:15 – 4:15 Invited Lecture: **Artem Chernikov** (UCLA), *Local distality and distal expansions of stable theories.*
4:30 – 6:30 Contributed Talks. See pages 7–8.

FRIDAY, May 18

Morning

- 8:00 – 9:00 Coffee and Snacks.
9:00 – 10:00 Invited Lecture: **Andreas Weiermann** (Ghent), *Generalized Goodstein principles and notation systems for finite numbers.*
10:15 – 11:15 Tutorial Lecture **Theodore Slaman** (University of California, Berkeley),
Recursion theory and Diophantine approximation II
11:30 – 12:30 Invited Lecture **J C Beall** (University of Connecticut), *Logic from a subclassical point of view.*

Afternoon

- 2:00 – 3:00 Tutorial Lecture: **Andrew Marks** (UCLA), *Descriptive set theory and geometrical paradoxes II.*
3:15 – 4:15 Invited Lecture **Joel Nagloo** (Bronx Community College), *Model theory and classical differential equations.*
4:30 – 6:05 Contributed Talks. See pages 7–8.
6:30 – 9:30 Conference Banquet: Western Illinois University Union – Ballroom.

SATURDAY, May 19

Morning

- 8:00 – 9:00 Coffee and Snacks.
9:00 – 10:00 Invited Lecture: **Slawomir Solecki** (Cornell), *Fraïssé limits and compact spaces*.
10:15 – 12:15 Special Sessions A3, B3, C3, D3 and E3. See pages 3–6.

SPECIAL SESSIONS

A. Computability Theory

(Organized by Laurent Bienvenu and Karen Lange)

Session A1: Wednesday, May 16 in Morgan Hall 220

- 2:00 – 2:25 **Damir Dzhafarov** (University of Connecticut), *Joins in the strong Weihrauch degrees*.
2:30 – 2:55 **Mathieu Hoyrup** (INRIA & Nancy), *Extending computable real functions*.
3:00 – 3:25 **Rachel Epstein** (Georgia College), *Computable reducibility and agreement on a set A* .
3:30 – 3:55 **Dan Turetsky** (Notre Dame), *Which Harrison-orderings look most like ordinals?*.

Session A2: Thursday, May 17 in Morgan Hall 220

- 9:00 – 9:25 **Christopher P. Porter** (Drake), *Aspects of Bernoulli randomness*.
9:30 – 9:55 **François G. Dorais** (University of Vermont), *Reverse mathematics of countable second-countable spaces*.
10:00 – 10:25 **Steffen Lempp** (University of Wisconsin, Madison), *The complexity of countable models of strongly minimal theories*.
10:30 – 10:55 **Henry Towsner** (University of Pennsylvania), *Disentangling the complexity of Ramsey's Theorem, the first-order part*.

Session A3: Saturday, May 19 in Morgan Hall 220

- 10:15 – 10:40 **Denis Hirschfeldt** (University of Chicago), *The reverse mathematics of Hindman's theorem for sums of exactly two elements*.
10:45 – 11:10 **Grégory Laffitte** (Montpellier), *Higher order computability musings and absoluteness*.
11:15 – 11:40 **Paul Shafer** (Leeds), *Reverse mathematics, Ekeland's variational principle and Caristi's fixed point theorem*.
11:45 – 12:10 **Linda Brown Westrick** (University of Connecticut), *Determined Borel codes in reverse math*.

B. Logic and Philosophy

(Organized by Curtis Franks)

Session B1: Wednesday, May 16 in Morgan Hall 230

- 2:00 – 2:50 **Farzaneh Derakhshan** (Carnegie Mellon), *Computational interpretation of substructural proofs.*
- 3:00 – 3:50 **Rosalie Iemhoff** (Utrecht), *The elimination of strong quantifiers in nonclassical logics.*

Session B2: Thursday, May 17 in Morgan Hall 230

- 9:00 – 9:50 **Sebastiaan A. Terwijn** (Nijmegen), *Constructive logic and sets of reals.*
- 10:00 – 10:50 **Fan Yang** (Helsinki), *Analyzing Arrow's Theorem through dependence and independence logic.*

Session B3: Saturday, May 19 in Morgan Hall 230

- 10:15 – 11:05 **Walter Dean** (Warwick), *Undecidability and intensionality via arithmetized completeness.*
- 11:15 – 12:05 **Graham Leach-Krouse** (Kansas State), *Burali-Forti as a purely logical paradox.*

C. Model Theory

(Organized by James Freitag and Jana Marikova)

Session C1: Wednesday, May 16 in Morgan Hall 222

- 2:00 – 2:25 **Christopher Miller** (Ohio State University), *Component-closed expansions of the real line.*
- 2:30 – 2:55 **Gabriel Conant** (Notre Dame), *Independence in generic incidence of structures.*
- 3:00 – 3:25 **Saugata Basu** (Purdue), *O-minimal versions of Szemerédi-Trotter and Elekes-Ronyai theorems.*
- 3:30 – 3:55 **Vahagn Aslanyan** (Carnegie Mellon), *Ax -Schanuel and strongly minimal sets in reducts of differentially closed fields.*

Session C2: Thursday, May 17 in Morgan Hall 222

- 9:00 – 9:25 **Minh Chieu Tran** (University of Illinois, Urbana-Champaign), *The groups \mathbb{Z} and \mathbb{Q} with predicates for being square free.*
- 9:30 – 9:55 **Erik Walsberg** (University of Illinois, Urbana-Champaign), *First order expansions of the additive group of reals.*
- 10:00 – 10:25 **Alf Onshuus** (Los Andes), *Definably amenable groups and invariant means.*
- 10:30 – 10:55 **Hunter Chase** (University of Illinois, Chicago), *Machine learning and stability.*

Session C3: Saturday, May 19 in Morgan Hall 222

- 10:15 – 10:40 **Nick Ramsey** (University of California, Berkeley), *Measures in simple theories.*
- 10:45 – 11:10 **Philipp Hieronymi** (University of Illinois, Urbana-Champaign), *Properties of structures with o-minimal open cores.*
- 11:15 – 11:40 **Patrick Speissegger** (McMaster), *Analytic continuation of functions definable in $\mathbb{R}_{\text{an},\text{exp}}$.*
- 11:45 – 12:10 **Caroline Terry** (University of Maryland), *Dividing lines and jumps in growth rates of hereditary properties.*

D. Proof Theory

(Organized by Henry Towsner)

Session D1: Wednesday, May 16 in Morgan Hall 226

- 2:00 – 2:50 **Colin McLarty** (Case Western), *Class field theory in exponential function arithmetic (EFA).*
- 3:00 – 3:25 **Daniyar Shamkanov** (NRU School of Economics/Steklov Institute), *Cut-elimination for the modal logic of transitive closure via non-well-founded proofs.*
- 3:30 – 3:55 **Takayuki Kihara** (Nagoya), *Weihrauch counterparts of reverse mathematical principles.*

Session D2: Thursday, May 17 in Morgan Hall 226

- 9:00 – 9:50 **Liron Cohen** (Cornell), *Cycles for the sake of induction.*
- 10:00 – 10:25 **Angeliki Koutsoukou-Argyraiki** (Cambridge), *Proof mining mathematics, formalizing mathematics.*
- 10:30 – 10:55 **Ulrich Kohlenbach** (Darmstadt), *Proof-theoretic methods in convex optimization.*

Session D3: Saturday, May 19 in Morgan Hall 226

- 10:15 – 11:05 **Vijay Ganesh** (Waterloo), *On the unreasonable effectiveness of boolean SAT solvers.*
- 11:15 – 11:40 **Noah Schweber** (University of Wisconsin, Madison), *Topological games and reverse mathematics.*

E. Set Theory

(Organized by Dima Sinapova and Anush Tserunyan)

Session E1: Wednesday, May 16 in Morgan Hall 228

- 2:00 – 2:50 **James Cummings** (Carnegie Mellon), *Iteration theorems old and new.*
3:00 – 3:25 **Nam Trang** (University of California, Irvine), *Large cardinals, determinacy and forcing axioms.*
3:30 – 3:55 **Omer Ben-Neria** (UCLA), *Ordinal definable sets and singular cardinals.*

Session E2: Thursday, May 17 in Morgan Hall 228

- 9:00 – 9:25 **Garrett Ervin** (Carnegie Mellon), *Sierpiński’s cube problem for linear orders.*
9:30 – 9:55 **William Chan** (North Texas), *$L(\mathbb{R})$ with determinacy satisfies the Suslin hypothesis.*
10:00 – 10:25 **Aristotelis Panagiotopoulos** (Caltech), *Menger compacta and projective Fraïssé limits.*
10:30 – 10:55 **Joseph Zielinski** (Carnegie Mellon), *Roelcke precompact sets and locally Roelcke precompact Polish groups.*

Session E3: Saturday, May 19 in Morgan Hall 228

- 10:15 – 11:05 **Natasha Dobrinen** (University of Denver), *Ramsey theory of homogeneous k -clique-free graphs.*
11:15 – 12:05 **Robin Tucker-Drob** (Texas A&M), *Conjugation invariant means on groups and inner amenability.*

CONTRIBUTED TALKS

THURSDAY, May 17

Session I Thursday, May 17 Morgan Hall 222

- 4:30 – 4:50 **Victoria Noquez**, *Vaught's two cardinal theorem and quasi minimality in continuous logic.*
- 4:55 – 5:15 **James Hanson**, *Separable and inseparable Gromov-Hausdorff categoricity in continuous logic.*
- 5:20 – 5:40 **Alexi Block Gorman**,* **Philipp Hieronymi** and **Elliot Kaplan**, *Pairs of theories satisfying a Mordell-Lang condition.*
- 5:45 – 6:05 **Danul K. Gunatilleka**, *Counting countable models of Baldwin-Shi hypergraphs.*
- 6:10 – 6:30 **John Baldwin**, *The paradigm shift in model theory.*

Session II Thursday, May 17 Morgan Hall 226

- 4:30 – 4:50 **Tejas Bhojraj**, *Quantum Solovay randomness.*
- 4:55 – 5:15 **Wesley Calvert**,* **Sergei S. Goncharov**, **Valentina Harizanov**, **Andrei Morozov**, **Alexandra Soskova** and **Daniel Turetsky**, *Semigroups of partial automorphisms.*
- 5:20 – 5:40 **Linda Lawton**, *Decidability of the AE-theory of Π_1^0 classes modulo finite differences.*
- 5:45 – 6:05 **Russell Miller**, *Hilbert's Tenth Problem does not respect Turing equivalence.*

Session III Thursday, May 17 Morgan Hall 230

- 4:30 – 4:50 **Sean C. Ebels-Duggan**, *Identifying cardinal abstracts via embeddings into induced models.*
- 4:55 – 5:15 **Landon D. Elkind**, *A theorem of infinity for Principia Mathematica.*
- 5:20 – 5:40 **Damon Scott**, *Modeling mathematical practice with well-formed mathematical contexts.*
- 5:45 – 6:05 **Bernd Buldt**, *On properties sufficient for Gödel's Second Incompleteness Theorem.*

Session IV Thursday, May 17 Morgan Hall 228

- 4:30 – 4:50 **Francesco Parente**, *On regular ultrafilters, Boolean ultrapowers and Keisler's order.*
- 4:55 – 5:15 **Assaf Shani**, *Borel equivalence relation and weak choice principles.*
- 5:20 – 5:40 **Kameryn Williams**, *Minimal models for second order set theories.*
- 5:45 – 6:05 **Yong Cheng**, *Analysis of the Martin-Harrington theorem in higher order arithmetic.*

FRIDAY, May 18

Session V Friday, May 18 Morgan Hall 222

- 4:30 – 4:50 **Santiago Camacho**, *The exponential field of transseries with a monomial set is undecidable.*
- 4:55 – 5:15 **Nigel Pynn-Coates**, *Differential-henselianity and maximality of asymptotic valued differential fields.*
- 5:20 – 5:40 **Travis Nell**, *Distal and non-distal behavior in pairs.*
- 5:45 – 6:05 **Reid Dale**, *Is there a really good definition of mass?*

Session VI Friday, May 18 Morgan Hall 228

- 4:30 – 4:50 **Gabriel Goldberg**, *The ultrapower axiom.*
- 4:55 – 5:15 **Itay Neeman and Zach Norwood***, *Remarkable cardinals and coding along trees.*
- 5:20 – 5:40 **Iván Ongay-Valverde**, *Splitting localization and prediction numbers.*

Session VII May Friday, May 18 Morgan Hall 226

- 4:30 – 4:50 **Joachim Mueller-Theys**, *Soundness of the provability predicate.*
- 4:55 – 5:15 **Fedor Pakhomov and James Walsh***, *Reflection ranks of axiomatic theories.*
- 5:20 – 5:40 **Wim Ruitenburg**, *A constructive logic and Fregean set theory which avoids Russell's paradox.*