ASL
Association for Symbolic Logic

ASL NEWSLETTER   September 2017

- **In Memoriam: Matatyahu Rubin.** Matatyahu (Mati) Rubin passed away on February 6, 2017, at the age of 70, after a struggle with lung cancer. He was a remarkable, devoted, mathematician and a unique person. He contributed to set theory and model theory, ordered algebraic structures, and general topology, but most significantly to the theory of Boolean algebras and to the study of reconstruction problems. His contributions to the study of the problem of reconstructing various structures from groups of their automorphisms have, by now, become a fundamental part of the theory and a standard tool in the study of the problem.

  Born in Tel-Aviv, Israel in 1946, Mati received his education at the Hebrew University of Jerusalem. An extremely thorough and assiduous scholar, Mati decided that to truly understand first order logic, he had to study at depth a specific example. In his M.Sc. thesis under the supervision of Gaifman, he investigated the theory of linear orders. Despite being a well known example already studied by central figures in the field, Mati obtained significant new results. His first published paper *Theories of linear order*, based on this work, is still a standard reference in the subject, and a canonical example of classical model theoretic analysis (in the spirit of Tarski and Robinson) without good quantifier elimination.

  Following Gaifman's advice, Mati started his Ph.D. as Shelah's first student, upon the latter's arrival at the Hebrew University. His dissertation *On Boolean Algebras and Their Automorphism Groups*, already touched upon the main themes that would occupy Mati throughout his career: Boolean algebras, automorphism groups and reconstruction problems. The problem of reconstructing a Boolean algebra from its group of automorphism was formulated by Monk in 1975, with rudimentary answers due to Monk and McKenzie (around 1977). Mati's work greatly extended the subject in several directions.

  In view of McKenzie's (and independently Shelah's) proof that Boolean algebras, in general, cannot be reconstructed from their automorphism groups, Mati embarked on a long term project of finding the most general homogeneity conditions for which reconstruction theorems do exist. Realizing that in most cases the reconstruction results he obtained did not depend on the group G, he worked with the full group of automorphisms. Mati also started studying sufficient conditions for groups of automorphisms from which homogeneous enough Boolean algebras could be reconstructed. It is one of Mati's most striking results that the most important of those conditions is first order expressible in the language of groups (i.e., not even in the language of permutation groups). Mati's work on the subject continued during his 1977 assistant professorship in Boulder, Colorado, and upon his return in 1978 to Israel, as a lecturer at Ben Gurion University. This work, culminated in a fairly complete solution of Monk's problem in his 1989 paper, *On the reconstruction of Boolean algebras from their automorphism groups*, which appeared in the Handbook of Boolean algebras.

  Rubin's contributions to the theory of Boolean algebras was not limited to reconstruction problems. One of his best works on the subject appeared as *A Boolean algebra with few subalgebras, interval Boolean algebras and retractiveness'*, where, using $\diamond$, Mati constructed a restrictive Boolean algebra B of cardinality $\aleph_1$ with only $\aleph_1$ sub-algebras, and such that B is not embeddable in an interval algebra, refuting conjectures of Monk, McKenzie and Rotman.

  Mati's character as a meticulous, hard working and independent researcher manifested itself already as a student. During his Ph.D. he deliberately steered away from directions suggested to him by Shelah, in order to maintain his independence as a researcher and pave his own path in mathematics. When faced with tough problems which others would have set aside for a later time, Mati never gave up. He chain smoked his way through long days and nights of hard work, until the problem was solved.

  After a decade or so of work around the reconstruction of Boolean algebras, Rubin realized its solution

could help in many other reconstruction problems. Expanding significantly the seminal work of Whittaker on the reconstruction of Euclidean manifolds, Mati introduced the notion of *local movement systems* and proved a reconstruction theorem for such systems. In his 1989 paper *On the reconstruction of topological spaces from their groups of homeomorphisms* Mati re-proved via his new method basically all known results in the area and obtained many spectacular new results concerning groups of differentiable and Lipschitz homeomorphisms of differentiable manifolds, groups of measure-preserving automorphisms of measure algebras, and groups of automorphisms of certain linear orderings and Boolean algebras.

Expanding the scope of his techniques Mati addressed reconstruction problems for trees in his 1993 monograph, *The reconstruction of trees from their automorphism groups*, and for $\aleph_0$-categorical structures, Banach spaces, and more in his 2005 research monograph, written in collaboration with Y. Yomdin, *Reconstruction of manifolds and subsets of normed spaces from subgroups of their homeomorphism groups*.

In 1988 Rubin was diagnosed with cancer for the first time. He fought the disease fiercely, never stopping to work (or to smoke), coming to his office even on the day he received chemotherapy treatments.

As the son of Hanan Rubin, a socialist leader who served in the Kneset (the Israeli parliament) for 13 years, Mati was a socially aware person, who never created any distance between himself and his students, as witnessed by the ever overflowing crowd of students attending his office hours. His graduate students became his friends and collaborators.

About a year after his retirement in 2015, Rubin was diagnosed with cancer for the second time. As in the first time, he fought the disease, he kept working, and remained optimistic. Unfortunately, the disease and the harsh treatments overcame him. He will be greatly missed by his colleagues at Ben Gurion University, his many co-authors, with whom he was always keen to cooperate and share his knowledge, and his friends.

- **The 2017 ASL Election.** At the end of this year the ASL will elect two members of the Executive Committee of the Council and two members of the Council. All terms are for three years beginning January 1, 2018. The ballot will be sent to all ASL members with the November Newsletter. The 2017 Nominating Committee has nominated Philip Ehrlich (Ohio) and Maryanthe Malliaris (Chicago) for the Executive Committee positions, and Mariya Soskova (Madison) and Yang Yue (Singapore) for the Council positions. The Nominating Committee consisted of Sam Buss, Zoé Chatzidakis, Su Gao, Antonio Montalbán, Justin Moore, Byunghan Kim, and Alasdair Urquhart (Chair).

  Additional nominations may be made by petition signed by 20 or more ASL members; such petitions should be received by the ASL Secretary-Treasurer (email `asl@vassar.edu` or ASL, Box 742, Vassar College, 124 Raymond Ave., Poughkeepsie, N.Y. 12604, USA) no later than November 1, 2016. In a contested election, each candidate has the opportunity to make a 100-word statement to be distributed with the ballot.

- **The 2016 Sacks Prize Awarded jointly to W. Johnson and L. Patey.** The ASL Committee on Prizes and Awards has selected Will Johnson of Niantic, Inc. and Ludovic Patey of the Université Claude Bernard Lyon 1 as the recipients of the 2016 Sacks Prize. The prize consists of a cash award plus five years free membership in the ASL for each awardee.

  Johnson received his Ph.D. in 2016 from the University of California, Berkeley, under the supervision of Tom Scanlon. Johnson's thesis, *Fun with Fields* contains a number of outstanding results in the model theory of fields, including the classification of the fields K whose theories have the property of *dp-minimality*, a strong form of "not the independence property". Johnson's main breakthrough is the construction of a definable topology on K, when K is not algebraically closed, introducing vastly new ideas and techniques into the subject.

  Patey received his Ph.D. in 2016 from the the Université Paris VII under the supervision of Laurent Bienvenu and Hugo Herbelin. In his thesis, *The Reverse Mathematics of Ramsey-type Theorems*, he solved a large number of problems in the reverse-mathematical and computability-theoretic analysis of combinatorial principles. In doing so, he combined great technical ability with a powerful eye for unification, isolating several notions that have helped systematize the area.

- **Call for Nominations: Karp Prize.** The Karp Prize, established in 1973 in memory of Professor Carol Karp, is awarded every five years for a "connected body of research, most of which has been completed in the time since

the previous prize was awarded." The ASL invites nominations for the 2018 Karp Prize. Nominations should be submitted to Thomas Scanlon (`scanlon@math.berkeley.edu`), Chair-elect of the ASL Committee on Prizes and Awards. The deadline for nominations is December 31, 2017.

- **Ph.D. Abstracts in Logic to be Published in the Bulletin of Symbolic Logic.** Beginning in 2018, the Association for Symbolic Logic will begin publishing abstracts of Ph.D. theses in logic in the *Bulletin of Symbolic Logic*. Christian Rosendal is the editor for this new section of the *BSL*. For further information, visit `http://aslonline.org/LogicThesisAbstracts.html`.

- **Call for Proposals: 2019 AMS-ASL Joint Special Session.** The ASL Committee on Logic in North America seeks proposals for an AMS-ASL Joint Special Session to be held at the Joint Mathematics Meetings in Baltimore, Maryland, January 16–19, 2019. Proposals or requests for more information should be sent to the Committee Chair, Reed Solomon (email: `david.solomon@uconn.edu`). The deadline for receipt of proposals is January 5, 2018.

- **Discounted Dues for New ASL Individual Members.** The ASL offers a 50% discount on dues for new individual members during each of the first two years of membership. For more information, visit `http://www.aslonline.org/membership-individual.html`.

- **Free Individual ASL Membership Program for Individuals in Developing Economies.** The ASL invites applications for an initial two-year free membership in the Association for new and lapsed members from countries classified as developing economies. The list, found at `http://www.aslonline.org/worldbankeconomies.html` includes Brazil, Bulgaria, China, Colombia, India, Iran, South Africa, and many other countries classified as 'upper middle income' or below on the World Bank's annual list for four of the last five years. To apply, please send an email to the ASL Committee on Membership at `asl-membership@googlegroups.com`. Include your name, full mailing address, and your academic affiliation. For information about the ASL and membership benefits, visit `http://www.aslonline.org/membership-individual.html`. After the initial two-year period new members under this program will pay the reduced membership dues, currently at US$18, as long as their country of residence is on the ASL's list of developing economies (see `http://www.aslonline.org/worldbankeconomies.html`).

- **Emeritus ASL Individual Membership.** The ASL offers retired individual members two membership options. Emeritus membership includes all the privileges of regular individual membership and is available to retired individuals who have been members of the ASL for 15 years. The dues for Emeritus membership for 2017 are US$47 and will increase to US$51 in 2018. The privileges attached to Retired membership include the ASL Newsletter and the right to vote in ASL elections, but do not include subscriptions to the ASL journals. Retired membership is offered to retired individuals who have been members of the Association for 20 years and is free. For more information about both options, visit `http://www.aslonline.org/membership-individual.html`.

- **New ASL Books.** The newest *Lecture Notes in Logic* volume is *Descriptive Complexity, Canonisation, and Definable Graph Structure Theory* by M. Grohe, vol. 47; see `http://www.aslonline.org/books-lnl_47.html`. To see all new books in the ASL's *Lecture Notes in Logic* and *Perspectives in Logic* series, visit `http://www.aslonline.org/books-lnl-available.html` for LNL volumes and `http://www.aslonline.org/books-perspectives_cup_springer.html` for Perspectives volumes.

- **Book and Journal Discounts for ASL Members.** Several publishers offer discounts on books and journals to ASL members. For a detailed description of these discounts, visit `http://www.aslonline.org/members-discounts.html`, or write to the ASL Business Office.

ASL MEETINGS

- **Student Travel Awards: The 2018 ASL North American Annual Meeting, 2018 ASL European Summer Meeting, and other ASL or ASL-Sponsored Meetings.** The ASL will make available modest travel awards to graduate students in logic so that they may attend the 2018 ASL North American Annual Meeting

in Macomb, Illinois or the 2018 ASL European Summer Meeting in Udine, Italy; see below for information about these meetings. Student members of the ASL also may apply for travel grants to other ASL or ASL-sponsored meetings. To be considered for a travel award, please (1) send a letter of application, and (2) ask your thesis supervisor to send a brief recommendation letter. The application letter should be brief (preferably one page) and should include: (1) your name; (2) your home institution; (3) your thesis supervisor's name; (4) a one-paragraph description of your studies and work in logic, and a paragraph indicating why it is important to attend the meeting; (5) your estimate of the travel expenses you will incur; (6) (for citizens or residents of the USA) citizenship or visa status; and (7) (voluntary) indication of your gender and minority status. Women and members of minority groups are strongly encouraged to apply. In addition to funds provided by the ASL, the program of travel grants is supported by a grant from the US National Science Foundation; NSF funds for meetings outside of North America may be awarded only to students at USA universities and to citizens and permanent residents of the USA. Air travel paid for using NSF funds must be in accordance with the Fly America Act. Application by email is encouraged; put "ASL travel application" in the subject line of your message.

For the 2018 ASL North American Annual Meeting, applications and recommendations should be received before the deadline of March 9, 2018, by the Program Chair: David Marker, email: `marker@uic.edu`. Applications are to be submitted by email only.

For the 2018 ASL European Summer Meeting, applications for student travel grants and recommendations should be received between January 1, 2018 and the deadline of May 4, 2018. They should be submitted electronically, by email to `LC18grant@uniud.it` (see the application instructions at `https://lc18.uniud.it/applications`, beginning in January 2018). If electronic submission is not possible, applications and recommendations should be mailed to: Prof. H. Dugald Macpherson, PC chair: Logic Colloquium 2018, School of Mathematics, University of Leeds, Leeds LS2 9JT, UK.

For ASL student member travel grants to ASL or ASL-sponsored meetings (other than the 2018 North American Annual Meeting and the 2018 European Summer Meeting), applications and recommendations should be received at least three months prior to the start of the meeting at the ASL Business Office: ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, New York 12604, USA; Fax: 1-845-437-7830; email: `asl@vassar.edu`. Decisions will be communicated at least two months prior to the meeting.

- **2017-18 ASL Winter Meeting (with APA).** *January 3–6, 2018, Savannah, Georgia.* This meeting will be held jointly with the Annual Meeting of the Eastern Division of the American Philosophical Association. The program includes two invited sessions: *Epistemology and Consistency*, with the speakers M. Detlefsen and J. Walsh; and *Modal Logic*, with the speakers G. Bezhanishvili, A. Bjorndahl, and P. Kremer. The members of the Program Committee are R. Heck (Chair) and T. Lando. Information about registration and hotel reservations can be found at `http://www.apaonline.org/event/2018eastern`.

- **2017-18 ASL Winter Meeting (with Joint Mathematics Meetings).** *January 12–13, 2018, San Diego, California.* This meeting will take place in conjunction with the Joint Mathematics Meetings taking place January 10-13, 2018. The invited speakers include: C. Hill, A. Kolokolova, A. Panagiotopoulos, E. Riehl, S. Thomas, S. Vasey, and K. Yokoyama. The Joint Mathematics Meetings program includes a joint AMS-ASL special session, *Set Theory, Logic and Ramsey Theory*, organized by A. Caicedo and J. Mijares. The members of the Program Committee are J. Reimann (Chair), P. Scowcroft, and A. Tserunyan. For meeting registration information, visit `http://jointmathematicsmeetings.org/meetings/national/jmm2018/2197_reg`, and for hotel information, see `http://jointmathematicsmeetings.org/meetings/national/jmm2018/2197_hsgpre`.

- **2018 ASL North American Annual Meeting.** *May 16–19, 2018, Macomb, Illinois.* The invited speakers include: JC Beall, A. Chernikov, B. Hart, J. Knight, J. Nagloo, D. Sinapova, S. Solecki, and A. Weiermann. Tutorials will be offered by A. Marks and T. Slaman. The special sessions planned (with organizers in parentheses) include: Computablity (L. Bienvenu and K. Lange) Model Theory (J. Freitag and J. Mǎríková), Proof Theory (H. Towsner), and Set Theory (D. Sinapova and A. Tserunyamn). The members of the Program Committee include: T. Carlson, B. Csima, T. Eisworth, M. Glanzberg, I. Kalantari, D. Marker (Chair), and M. Soskova.

The members of the Local Organizing Committee are: J. Chisholm, R. Dimitrov, C. Ealy, D. Haugen, I. Kalantari (Chair), J. Măríková, M. Moniri, G. Pettit, B. Powell, C. Pynes, N. Vakil, G. Weitkamp, and L. Welch.

Abstracts for contributed talks submitted by ASL members will be published in *The Bulletin of Symbolic Logic* if they satisfy the Rules for Abstracts (see below). Abstracts must be received by the deadline of February 23, 2018, at the ASL Business Office: ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, New York 12604, USA; Fax: 1-845-437-7830; email: `asl@vassar.edu`.

- **2018 ASL European Summer Meeting (Logic Colloquium '18).** *July 23–28, 2018, Udine, Italy.* The Program Committee members are: S. Demri, A. Kechris, C. Laskowski, D. Macpherson (Chair), A. Marcone, A. Montalbán, P. Pudlak, G. Sher, and D. Sinapova. The Local Organizing Committee includes: G. D'Agostino (Co-Chair), V. Dimonte, A. Marcone, A. Montanari (Co-Chair), F. Parlamento, and C. Piazza.

  Abstracts of contributed talks submitted by ASL members will be published in The Bulletin of Symbolic Logic if they satisfy the Rules for Abstracts (see below). Abstracts should be submitted as pdf files at `https://easychair.org/conferences/?conf=lc18`; for submission instructions see `https://lc18.uniud.it`, beginning in January 2018. The deadline for submissions is April 27, 2018. If electronic submission is not possible, abstracts should be mailed to: Prof. H. Dugald Macpherson, PC chair: Logic Colloquium 2018, School of Mathematics, University of Leeds, Leeds LS2 9JT, UK.

- **Rules for Abstracts.** The rules for abstracts of contributed talks at ASL meetings (including those submitted "by title") may be found at `http://www.aslonline.org/rules_abstracts.html`. Please note that abstracts *must* follow the rules as set forth there; those which do not conform to the requirements will be returned immediately to the authors who submitted them. Revised abstracts that follow the rules will be considered if they are received by the announced deadline.

ASL SPONSORED MEETINGS

- **Symposium on Logical Foundations of Computer Science (LFCS 18).** *January 8–11, 2018, Deerfield Beach, Florida.* This conference series provides an outlet for the fast-growing body of work in the logical foundations of computer science, e.g., areas of fundamental theoretical logic related to computer science. The LFCS General Chair is A. Nerode, the Chair of the Program Committee is S. Artemov, and the Chair of the Local Organizing Committee is R. Lubarsky. Note that the deadline for ASL student members to apply for ASL travel grants (see above) has been extended to November 2, 2018. For further information, visit `http://lfcs.ws.gc.cuny.edu/lfcs-2018/`

- **Four Conferences during the Model Theory, Combinatorics and Valued fields: Trimester at the Institut Henri Poincaré.** *January 8–April 6, 2018, Paris, France.* The three themes of trimester-long program are: Model theory and application to combinatorics, Model theory of valued fields and applications, and Applications of model theory in geometry, analysis and number theory. In addition to weekly seminars and courses, the trimester will have four meetings (with dates in parentheses), all ASL sponsored: *Model theory, combinatorics and valued fields* (introductory preschool of the trimester, January 8–12, 2018, at CIRM, Luminy), *Model theory and combinatorics* (January 29–February 2, 2018, at IHP), *Model theory of valued fields* (March 5–9, 2018, at IHP), and *Model theory and applications* (March 26–30, 2018, at IHP). Note that the deadline for ASL student members to apply for ASL travel grants (see above) to the first two of these conferences, *Model theory, combinatorics and valued fields* and *Model theory and combinatorics* has been extended to November 2, 2018; the deadline for each of the last two is 3 months prior to the the start of the meeting. The Scientific Committee includes: E. Bouscaren, E. Breuillard, E. Hrushovski, F. Loeser, A. Pillay, and T. Scanlon. The members of the Organizing Committee are: E. Bouscaren, Z. Chatzidakis, M. Hils, D. Macpherson, and F. Wagner. For further information visit `http://modvac18.math.ens.fr/`.

- **Thirty-third Annual ACM/IEEE Symposium on Logic in Computer Science (LICS 2018).** *July 9–12, 2018, Oxford, UK.* The LICS Symposium is an annual international forum on theoretical and practical topics

in computer science that relate to logic. LICS 2018 will be organized as part of the the Seventh Federated Logic Conference (FLoC 2018; see below). The Program Committee Chair is M. Hofmann, the Workshop Chair is P. Bouyer, the Publicity and Proceedings Chair is S. Staton, and the General Chair is M. Grohe. The Kleene Award for the best student paper, sponsored by the European Association for Theoretical Computer Science, will be presented at the meeting. For more information, visit `http://lics.siglog.org/lics18/index.shtml`.

CALENDAR OF OTHER MEETINGS

- **Seventh ACM SIGPLAN International Conference on Certified Programs and Proofs (CPP 2018).** *January 8–9, 2018, Los Angeles, California.* This event focuses on research areas related to formal certification of programs and proofs. The invited speakers are B. Pientka and R. Thiemann. The Co-Chairs of the Program Committee are J. Andronick and A. Felty. This event is co-located with POPL 2018 (see below) and is held in cooperation with the Special Interest Group on Logic and Computation (SIGLOG). For further information, visit `http://conf.researchr.org/track/CPP-2018/CPP-2018`.

- **Forty-Fifth ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2018).** *January 10–12, 2018, Los Angeles, California.* This series provides a forum for the discussion of all aspects of programming languages and programming systems. This event is co-located with CPP 2018 (see above). For further information, visit `https://popl18.sigplan.org`.

- **Seventh Federated Logic Conference (FLoC 2018).** *July 6–19, 2018, Oxford, UK.* This event brings together several international conferences related to mathematical logic and computer science. These conferences will participate: the Thirtieth International Conference on Computer-Aided Verification (CAV), the Thirty-first IEEE Computer Security Foundations Symposium (CSF), the Twenty-third International Symposium on Formal Methods (FM), the Third International Conference on Formal Sturctures for Computation and Deduction (FSCD), the Thirty-fourth International Conference on Logic Programming (ICLP), the Ninth International Joint Conference on Automated Reasoning (IJCAR), the Ninth International Conference on Interactive Theorem Proving (ITP), the ASL-sponsored Thirty-third IEEE Symposium on Logic in Computer Science (LICS; see above), and the Twenty-first International Conference on Theory and Applications of Satisfiability Testing (SAT). Pre-conference workshops will be held July 7–8, 2018. The General Chair is M. Vardi and the Steering Committee Co-Chairs are D. Kroening and M. Kwiatkowska. For more information, visit `http://www.floc2018.org`.

- **Twelfth International Conference on Advances in Modal Logic (AiML 2018).** *August 27–31, 2018, Bern, Switzerland.* This conference series is an initiative aimed at presenting the state of the art in modal logic and its various applications. The invited speakers include: A. Ciabattoni, R. Goldblatt, R. Iemhoff (joint AiML-LATD), S. Kikot, and D. Scott. The Co-Chairs of the Program Committee are G. Bezhanishvili and G. D'Agostino, and the Co-Chairs of the Organizing Committee are G. Metcalfe and T. Studer. The deadline for abstracts of full papers is March 11, 2018; for short presentations the deadline is May 20, 2018. AiML 2018 will be co-located with Logic, Algebra and Truth Degrees (LATD 2018, see below). For further information, visit `http://www.aiml2018.unibe.ch`.

- **Logic, Algebra and Truth Degrees (LATD 2018).** *August 28–31, 2018, Bern, Switzerland.* The invited speakers include M. Bílková, N. Galatos, R. Iemhoff (joint AiML-LATD), T. Moraschini, and D. Petrisan.The Chair of the Program Committee is G. Metcalfe, and the Co-Chairs of the Organizing Committee are G. Metcalfe and T. Studer. LATD 2018 will be co-located with AiML 2018 (see above). For further information, visit `http://www.latd2018.unibe.ch/`.

The next Newsletter will be sent in November 2017. Items to be included should reach the Secretary-Treasurer before October 31, 2017.

Submitted by Charles Steinhorn, Secretary-Treasurer.