

# Association for Symbolic Logic

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# ASL NEWSLETTER

January 2020

• In memoriam: Gerald Sacks. Gerald E. Sacks, age 86, Professor Emeritus of Mathematics at Harvard and M.I.T., passed away on October 4, 2019 at his home in Falmouth, Maine, after a long illness. Sacks was born in Brooklyn and graduated from Brooklyn Technical High School. He interrupted his college studies at Cornell University to serve in the U.S. Army from 1953-56, but returned and received his Ph.D. in 1961 as a student of J. Barclay Rosser. He began his academic career at Cornell University, but moved to M.I.T. in 1966, and later accepted a joint appointment at M.I.T. and Harvard. During his career, he held visiting positions at the Institute for Advanced Study and many prestigious universities.

Sacks's mathematical interests were broadly distributed across mathematical logic and he made fundamental contributions to computability theory, set theory and model theory. He was fascinated by situations in which understanding the mathematical objects being studied rested upon understanding the means needed to speak about them. For him, mathematical logic was about definability: its essential nature, its hidden structure, and its extent and limitations. In addition to its focus on definability, Sacks's work was marked by marvelous technical force and innovation. He was a self-identified problem solver. Intractable problems caught his interest, and he provided solutions to many of them.

Sacks began his career with an in-depth study of the computably enumerable sets, those for which there is a computer program to list their elements. In his early papers, he revealed a rich internal structure to relative computability among these sets. One highlight of this period is the Sacks Density Theorem, which states that the ordering of degrees of information represented by these sets is dense.

Sacks's collaboration with Georg Kriesel shifted his attention permanently from definability as computability to definability in the large. Sacks sought to understand the common structure of relative definability, as the scope of allowed definitions ranged over varieties of mathematical objects such as initial segments of Gödel's constructible sets or finite types in Kleene's recursion in finite types. He found some of the first connections between set-theoretic structure and definability-theoretic characteristics. His Plus-One Theorem connects Kleene's recursion in finite types to admissible set theory, and his Least-Admissible Set Theorem connects countable admissible ordinals to relative computability. He derived Sacks forcing, now a standard device in set theory, from the constructions of sets of minimal Turing degree introduced by Clifford Spector, which Sacks later refined.

In addition to producing beautiful mathematics, Sacks was a prodigious producer of mathematicians. He supervised more than 30 doctoral dissertations and populated the mathematics departments of eminent universities with his students. Founded in his honor in 1994, the Sacks Prize is awarded annually by the Association for Symbolic Logic for the most outstanding doctoral dissertation in mathematical logic.

Sacks made important contributions to the mathematical logic community through his service and teaching. His book Saturated Model Theory was a popular choice for a first course in model theory for several generations of students, while his book Higher Recursion Theory was the introduction and bible for those studying that topic. His monograph Degrees of Unsolvability was a tour de force for computability theory in the 1960s, and the open questions it listed drove much of the research in computability theory for decades thereafter. He prided himself on his teaching, whose style brought clarity and comprehensibility to the material covered. He was sought after for many colloquium talks and invited addresses, including a plenary address at the International Congress of Mathematicians in 1978, because he was able to describe the important work in mathematical logic in ways understandable to mathematicians in other fields. He was an editor of the Journal of Symbolic Logic at a time when that journal was substantially upgraded, and was one of the founding editors of the Perspectives in Mathematical Logic book series, a series that grew to house some of the most important books in the field.

Survivors include his wife, Margaret D. Philbrick; his four children, Matthew S. Sacks, Natalie R. Sacks, M.D. (John MacGregor, M.D.) and Paul M. Sacks (Kristen Kaplan) with his former wife Naomi Lavori, and Ella Raposo-Sacks with his former wife Luisa Raposo; three stepchildren, John Philbrick, Katherine Vorenberg, and Louise Philbrick; five grandchildren, Jacob S. MacGregor, Daniel, Kevin and Harrison Philbrick, and Emma Vorenberg; and his brother, Michael H. Sacks, M.D. A memorial service will be held in the spring of 2020.

- We also report, with sorrow, the untimely passing of Erik Palmgren, of Stockholm University.
- The 2019 ASL Election. In the 2019 election, the members of the ASL elected Russell Miller (Queens College, CUNY) and Reed Solomon (University of Connecticut) as Co-Secretary-Treasurers; Anuj Dawar (Cambridge) and Paola D'Aquino (Campania) to the Executive Committee; and Ralf Schindler (Münster) and Keita Yokoyama (JAIST) to the ASL Council. All terms are for three years beginning January 1, 2020.
- 2019 Sacks Prize. The ASL Committee on Prizes and Awards has selected Gabriel Goldberg of Harvard University to receive the 2019 Sacks Prize. The prize consists of a cash award and five years membership in the ASL. Goldberg received his Ph.D. in 2019 at Harvard University under the supervision of W. Hugh Woodin. In his thesis, The Ultrapower Axiom, he isolates and develops a powerful new structural hypothesis for inner models of set theory. The Ultrapower Axiom holds in all inner models built using the current methodology. On the other hand, Goldberg shows it has sweeping structural consequences: the linearity of the Mitchell order on countably complete ultrafilters, a characterization of strong compactness in terms of supercompactness, and GCH above a strongly compact cardinal. The Prize Committee noted the transformational quality of Goldberg's thesis work within the Inner Model Program.
- 2020 Sacks Prize. The ASL invites nominations for the 2020 Sacks Prize for the most outstanding doctoral dissertation in mathematical logic. Nominations must be received by September 30, 2020. The Sacks Prize was established to honor Professor Gerald Sacks of MIT and Harvard for his unique contribution to mathematical logic, particularly as adviser to a large number of excellent Ph.D. students. The Prize was first awarded in 1994 and became an ASL Prize in 1999. The Fund on which the Prize is based is now administered by the ASL and the selection of the recipient is made by the ASL Committee on Prizes and Awards. The Sacks Prize will consist of a cash award plus five years free membership in the ASL. For general information about the Prize, visit http://aslonline.org/asl-information/prizes-and-awards/. Anyone who wishes to make a nomination for the 2020 Sacks Prize should consult the webpage http://aslonline.org/asl-information/prizes-and-awards/sacks-prize-recipients/sacks-prize-nominations-and-other-information/ for the precise details.

Students who defend their dissertations (equivalent to the American doctoral dissertation) between October 1, 2019, and September 30, 2020, are eligible for the Prize this year. This is an international prize, with no restriction on the nationality of the candidate or the university where the doctorate is granted. Nominations should be made by the thesis adviser, and consist of: name of student, title and 1–2 page description of dissertation, date and location of the thesis defense, letter of recommendation from the adviser, an electronic copy of the thesis in pdf form, or the address of a website from which an electronic copy in pdf form can be downloaded, and an independent second letter of recommendation. Nominations and questions about the Prize should be sent to the Committee Chair, Justin Moore; pdf files sent as attachments by email to justin@math.cornell.edu are preferred. The form of such letters and other pertinent details can be found at the website above, and need to be read prior to submitting a nomination.

Those wishing to contribute to the Sacks Prize Fund may send contributions to the ASL Business Office (see address at the top of this Newsletter). All such contributions are tax-deductible within the USA.

• ASL Sponsorship of Meetings. The ASL often sponsors research meetings and conferences in logic, all over the world. Sponsorship is granted to those meetings that uphold high standards of scholarship and rigor and whose purpose is in concert with the mission of the ASL. Student members of the ASL may apply to the ASL for travel support to attend sponsored meetings, as described below, and a report on each sponsored meeting subsequently appears in the *Bulletin of Symbolic Logic*. Meeting organizers who wish to request ASL sponsorship of their meetings should do so at least six months before the beginning of the meeting, following the instructions at http://aslonline.org/sponsorship-of-meetings/.

# STUDENT TRAVEL AWARDS

• Student Travel Awards: ASL and ASL-Sponsored Meetings. Student members of the ASL may apply for travel grants to ASL and 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. Application by email is encouraged; put "ASL travel application" in the subject line of your message.

For ASL travel grants for students and recent Ph.D.'s attending the 2020 European Summer Meeting, details will be announced soon: please watch aslonline.org/student-travel-awards/ for updated information. The deadline for applications will be April 13, 2020. For all other ASL or ASL-sponsored meetings, applications (from student members of the ASL) and recommendations must be received at least three months prior to the start of the meeting, via email to asl@uconn.edu or at the ASL Business Office (address at the top of this Newsletter). Decisions will be communicated at least two months prior to the meeting.

# ASL MEETINGS

• 2020 ASL North American Annual Meeting March 25–28, 2020, University of California at Irvine. The invited speakers are J. Avigad, O. Ben-Neria, R. Dechter, H.J. Keisler, J. Kennedy, B. Monin, S. Müller, and A. Razborov. Tutorials will be offered by H. Pastén, J. Väänänen, and A. Zamansky. The topics of the seven special sessions to be held are Finite Model Theory and Descriptive Complexity; Forcing and Ramsey Theory; Logic and Graph Limits; Model Theory; Philosophy and Logic; Proof Theory; and Reverse Mathematics and Computability Theory of Ramsey-Theoretic Principles. The program and meeting poster are attached to electronic copies of this Newsletter, and are also available at http://aslonline.org/meet/.

The members of the Program Committee are L. Cohen, J. Cummings, D. Hirschfeldt (chair), P. Kolaitis, M. Malliaris, and T. Meadows. The Local Organizing Committee consists of M. Foreman, I. Goldbring (chair), P. Maddy, T. Meadows, K. Wehmeier and M. Zeman. To register, visit https://sites.uci.edu/asl2020/.

- 2020 ASL Winter Meeting (with APA) April 8-12, 2020, San Francisco, California. This meeting will be held in conjunction with the Annual Meeting of the Pacific Division of the American Philosophical Association. The ASL invited speakers are A. Bacon, E. Cresto, R. French, M. Fusco, H. Lin, and S. Shieh. The members of the Program Committee are G. Russell, G. Sagi (chair), and S. Walsh. The program is attached to electronic copies of this Newsletter. For more information, see https://www.apaonline.org/events/event\_list.asp?cid=6956.
- 2020 ASL European Summer Meeting (Logic Colloquium) July 13-17, 2020, Poznań, Poland. This meeting will be hosted by Adam Mickiewicz University in Poznań, and organized by the AMU Faculty of Psychology and Cognitive Science and the AMU Faculty of Mathematics and Computer Science. The plenary speakers are A. Chernikov, V. Fischer, N. Greenberg, B. Monin, L. Motto Ros, E. Pimentel, F. Pfenning, L. Westrick, and R. Williams. Tutorials will be offered by K. Krupinski and A. Marks. There will be special sessions on Computability; Logic and Cognitive Science and Linguistics; Modal and Epistemic Logic; Model Theory; Proofs and Programs; and Set Theory.

The members of the Program Committee are W. Buszkowski, A. Dawar, G. Primiero, M. Soskova, H. Towsner, M. Viale, and B. Zil'ber (chair). The Local Organizing Committee consists of W. Buszkowski, J. Golińska-Pilarek, L. Kołodziejczyk, P. Łupkowski, R. Murawski (co-chair), M. Nasieniewski, J. Pogonowski, T. Skura, K. Świrydowicz, M. Urbański (co-chair), and A. Wiśniewski. The deadline for submitting abstracts of contributed talks is March 31, 2020; abstracts should satisfy the ASL's *Rules for Abstracts* (below). Applications for travel funding for students and recent Ph.D.'s are due by April 13, 2020. More information will be available soon; see http://aslonline.org/student-travel-awards/ and at http://aslonline.org/meet/ for links.

• Rules for Abstracts. The rules for abstracts of contributed talks at ASL meetings (including those submitted "by title") may be found at http://aslonline.org/meetings/rules-for-abstracts/. 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

- PhDs in Logic XII April 27–29, 2020, Berlin, Germany. PhDs in Logic is an annual graduate conference organized by graduate students. The 2020 edition will be organized by local students from Berlin as well as students from Bochum and Munich. This interdisciplinary conference welcomes contributions to various topics in mathematical logic, philosophical logic, and logic in computer science. It involves tutorials (approximately 60-90 minutes) by established researchers as well as short presentations by PhD students, master students and first-year postdocs on their research. Confirmed invited speakers include: Peter Verdée, Christoph Benzmüller, Alexander Steen, and Marianna Antonutti. Conference website: https://www.mi.fu-berlin.de/phdsinlogic2020/.
- Antalya Algebra Days XXII May 23–27, 2020, Sirince, Izmir, Turkey. Antalya Algebra Days is an annual meeting taking place in Turkey, which serves as an international platform for exchanging ideas and establishing contacts. Each meeting has a focus: for the 22nd meeting in 2020 the focus will be model theory. Topics will include model theory and also number theory, algebraic geometry, ring and module theory. Confirmed speakers include: T. Altinel, J. Bell, Z. Chatzidakis, G. Conant, P. Cubides Kovacsics, G. Dill, M. Kamensky (tentative), K. Krupiński, A. Kwiatkowska, S. Moconja, D. Palacin, O. León Sánchez (tentative), and T. Xiang Zou. For more information, visit https://nesinkoyleri.org/en/events/2020-antalya-algebra-days-xxii/.
- Model Theory and Applications June 1-5, 2020, Cetraro, Italy. This meeting will present an overview of recent developments in model theory and its applications. It will inlude tutorials by I. Farah and K. Peterzil, and talks by M. Bays, A. Chernikov, A. Fornasiero, N. Hempel, M. Hils, T. Ibarlucía, K. Krupinski, F. Point, N. Ramsey, C. Rosendal, P. Simon, K. Tent, F. Wagner, and A. Zucker. The organizers are I. Ben Yaacov, P. D'Aquino, S. Starchenko, and T. Tsankov. Website: http://www.matfis.unicampania.it/home-model-theory.
- Model Theory: from Geometric Stability to Tame Geometry June 8-12, 2020, Luminy, France. This conference will take place at the CIRM in Luminy. The Scientific Committee comprises E. Bouscaren, A. Ducros, D. Macpherson, and T. Scanlon, while the Organizing Committee is mad eup of A. Hasson, S. Rideau-Kikuchi, and F. Wagner. The website is https://conferences.cirm-math.fr/2173.html.
- Model Theory Conference in celebration of Ludomir Newelski's 60th birthday June 22–26, 2020, Szklarska Poreba, Poland. Confirmed speakers include: M. Bays, A. Berenstein, E. Bouscaren, J. Gismatullin, L. Haykazyan, E. Hrushovski, A. Ivanov, F. Jahnke, T. Kaiser, D. Macpherson, R. Moosa, L. Newelski, A. Pillay (tentatively), N. Ramsey, T. Rzepecki, P. Simon, P. Tanović, K. Tent, C. Terry, T. Tsankov, and F. Wagner. For more information, visit http://www.math.uni.wroc.pl/~pkowa/ln20.html.
- Leeds Computability Days June 24–26, 2020, University of Leeds. This will be a satellite meeting of the CCR meeting in Cambridge the following week (see below), featuring talks by R. Alvir, A. Bard, G. Barmpalias, V. Brattka, P. Cholak, D. Dzhafarov, M. Fernández, M. Fiori Carones, J. Knight, S. Lempp, A. Melnikov, K. Miyabe, A. Montalbán, L. Patey, M. Soskova, and W. Wang. The organizers are R. Downey, E. Mayordomo, and P. Shafer. For further information please visit www.computability.org/LCD2020/.
- Computability, Complexity, and Randomness 2020 June 29-July 3, 2020, Cambridge, UK. This year's edition of CCR will take place as a workshop at the Isaac Newton Institute at Cambridge University, organized by R. Downey, E. Mayordomo, and P. Shafer. It follows up on the 2012 programme at the INI entitled Symtax and Semantics: A Legacy of Alan Turing. More information is available at www.newton.ac.uk/event/sasw09.
- Computability in Europe 2020 June 29–July 3, 2020, Salerno, Italy. CiE 2020 will be hosted by the University of Salerno, at its Fisciano campus. The invited speakers are P. Boldi, V. Bruyère, E. Fokina, A. Pouly,

- A. Restivo, and D. Woods, with tutorials offered by V. Williams and M. Ziegler. The co-chairs of the Program Committee are M. Anselmo and A. Pauly. The deadline for registering abstracts is January 3, 2020. Further information is available at cie2020.wordpress.com.
- Australasian Association of Logic Annual Conference July 2-3, 2020, University of Sydney, Australia. The Australasian Association of Logic has held Annual Conferences since 1965. This conference embraces all topics in logic (mathematical, philosophical, computational, etc.). For further information visit http://www-personal.usyd.edu.au/~njjsmith/aal2020/.
- Practical and Structural Model Theory on the Occasion of the 60th +/- Birthdays of Ya'acov Peterzil and Sergei Starchenko July 27-31, 2020, University of Passau, Germany. The scope of this conference will include model theory of o-minimal structures, interactions and applications of o-minimality, and model theoretic generalizations. The Organizing Committee consists of P. Eleftheriou, A. Hasson, and T. Kaiser. Confirmed speakers and more information appears at http://www.fim.uni-passau.de/index.php?id=24850&L=1.
- 27th Workshop on Logic, Language, Information, and Computation 2020 (Wollic 2020) August 4-7, 2020, Universidad de Ingenieria y Tecnologia, Lima, Peru. Wollic is an annual international forum on inter-disciplinary research involving formal logic, computing and programming theory, and natural language and reasoning. Contributions are invited on all pertinent subjects, with particular interest in cross-disciplinary topics. Typical but not exclusive areas of interest are: foundations of computing and programming; novel computation models and paradigms; broad notions of proof and belief; proof mining, type theory, effective learnability; formal methods in software and hardware development; logical approach to natural language and reasoning; logics of programs, actions and resources; foundational aspects of information organization, search, flow, sharing, and protection; foundations of mathematics; philosophy of mathematics; philosophical logic; philosophy of language. Papers must be submitted electronically via EasyChair; see http://wollic.org/wollic2020/instructions. html. The initial deadline is March 29, 2020. The co-chairs of the Program Committee are A. Silva and R. Wasserman. The Organizing Committee consists of E. Quadro-Vargas (local chair), A. G. de Oliveira, and R. de Queiroz (co-chair). For further information, please visit http://wollic.org/wollic2020/.

# CALENDAR OF OTHER MEETINGS

- Days in Logic 2020 January 30-February 1, 2020, Universidade de Lisboa, Lisbon, Portugal. Days in Logic is a biennial general meeting in logic taking place in Portugal since 2004. Invited speakers include Mirna Dzamonja, Paulo Oliva, Luca Tranchini and Cristina Sernadas. Members of the organizing committee: F. Ferreira, G. Ferreira and B. Dinis. For more information, see http://dil2020.campus.ciencias.ulisboa.pt.
- Midwest Computability Seminar February 11, 2020, University of Chicago. This semester's Midwest Computability Seminar will feature talks by R. Alvir, T. Bhojraj, J.L. Goh, and N. Lutz. Abstracts will be available at http://www.math.uchicago.edu/~drh/mcs/Jointseminar.html.
- FoIKS Symposium 2020 February 17–21, 2020, Dortmund, Germany. The 11th International Symposium on Foundations of Information and Knowledge Systems will take place in Dortmund on February 17-21. For details please see http://foiks.org/.
- Robin Gandy Centenary Colloquium February 22, 2020, Oxford, UK. There will be a one-day Colloquium in Wolfson College Oxford to celebrate the centenary of Robin Gandy, a leading figure in mathematical logic and foundations of mathematics and the theory of computation, who was a student and close friend of Alan Turing, Oxford University Reader in Mathematical Logic and Fellow of Wolfson College. It will be a full day meeting with seven speakers, four of whom were supervised by Gandy, and will cover topics in mathematical logic, computer science, and philosophy of mathematics, as well as personal reflections and historical perspectives. The speakers are M. Antonutti Marfori, A. Hodges, M. Hyland, J. Paris, G. Sundholm, C. Tasson, and P. Welch. This meeting is sponsored by Wolfson College, the Oxford Mathematical Institute, Computer Science Department, and Philosophy Faculty, and the British Logic Colloquium. For details, see the web page at https://www.wolfson.ox.ac.uk/event/gandy-colloquium-0. Registration by February 10 is required, and can be done at https://

/www.oxforduniversitystores.co.uk/short-courses/computer-science/events/gandy-colloquium. For enquiries, contact karen.barnes@cs.oc.ac.uk.

- Southeastern Logic Symposium February 28-March 1, 2020, Gainesville, Florida. SEALS 2020 will take place on February 28 March 1 at the University of Florida in Gainesville, FL, with support from the National Science Foundation. The invited speakers are S. Gao, D. Hirschfeldt, A. Shlapentokh, and S. Solecki, and two special sessions will be held, in set theory and computability theory. The organizers are D. Bartosova, D. Cenzer, E. McCarthy, and J. Zapletal. For further information, see the conference website https://people.clas.ufl.edu/zapletal/south-eastern-logic-symposium-2020/.
- Graduate Student Conference in Logic XXI April 18–19, 2020, University of Notre Dame. This annual conference is run for and organized by graduate students in logic. The speakers consist of graduate students from Midwestern universities. There is representation from computability theory, model theory, and set theory. For more information, visit http://sites.nd.edu/gscl-2020/.
- MAMLS Spring Fling April 22–24, 2020, City University of New York. This meeting of the Mid-Atlantic Mathematical Logic Seminar, at the CUNY Graduate Center in New York City, will focus on set theory. Confirmed speakers include A. Brooke-Taylor, A. Enayat, V. Fischer, M. Gitik, E. Schimmerling, P. Schlicht, B. Velickovic, and K. Williams. The local organizers are G. Fuchs, V. Gitman, and C. Switzer. Some travel support is available for students, using MAMLS funding from the National Science Foundation: see https://nylogic.github.io/MAMLSSpringFling/home.html for details.
- Sao Paulo School of Advanced Science on Contemporary Logic, Rationality, and Information July 13–24, 2020, University of Campinas, Brazil. This School, funded by Sao Paulo Research Foundation (FAPESP), celebrates the 90th anniversary of Newton da Cost and will provide an overview of the state-of-art methodology and research on contemporary logic, rationality and information, with a focus on non-classical logics. The program comprises nine courses and nine plenary talks delivered in English by experts in each topic, as well as oral presentations and poster sessions by the students. Topics include the history, philosophy, and different schools of paraconsistent logic; logic in relation to reasoning, to information, to argumentation, and to probability and artificial intelligence; and methodological aspects of interpreting, translating and combining logics. The Coordinator is I.M. Loffredo, and the Advisory Committee Chair is W. Carnielli.

The event will select 100 fully-funded participants (50 from Brazil and 50 internationally). Funding includes airfare, medical insurance, accommodation and meals throughout the two weeks. Undergraduate and graduate students and postdoctoral fellows (up to 5 years after completion of the Ph.D.) from all countries are encouraged to apply. The application deadline is February 22, 2020; see https://splogic.org/call-for-entries/or send email to cle.fapesp.logic@gmail.com. Further information is available at https//splogc.org.

• Northeast Regional Model Theory Days August 7-9, 2020, College Park, Maryland. This model theory meeting will take place on the campus of the University of Maryland. The local organizers are A. Dolich, V. Guingona, D. Kueker, and M. Parnes. Student funding from the NSF will be available from the organizers and through the Mid-Atlantic Mathematical Logic Seminar. The meeting website will be at https://www-math.umd.edu/research/conferences.html.

OTHER ANNOUNCEMENTS (Also see http://aslonline.org/announce/.)

• Call for Proposals: 2021 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 Washington, DC, January 6–9, 2021. Proposals or requests for information should be sent to the Committee Chair, Natasha Dobrinen (natasha.dobrinen@du.edu). The deadline for receipt of proposals is February 10, 2020.

The next newsletter will be mailed in April 2020. Items to be included should reach the Secretary-Treasurers before March 31, 2020.

Submitted by Russell Miller & Reed Solomon, co-Secretary-Treasurers.