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NOTICES

- In Memoriam: Richard Laver. Richard Laver ("Rich" to those who knew him) died on September 19, 2012 after a several year struggle with Parkinson's disease, in Boulder, Colorado. He was born on October 20, 1942 in Los Angeles, California.

  Rich obtained his Ph.D. in 1969 at the University of California, Berkeley, under the direction of Ralph McKenzie. In his dissertation he solved a problem of Fraïssé, showing that there is no infinite sequence of scattered linear orderings each embeddable in the previous one but none embeddable in the following one. In his proof he used several facts about well- and better- quasi-orderings, Hausdorff's theorem on scattered orderings, and results of Fred Galvin. He developed these ideas in several papers.

  In a 1976 paper Laver settled another long-standing problem, showing that it is consistent that Borel's conjecture holds: no uncountable set has strong measure zero, while the continuum has size $\aleph_2$. He proved this by introducing what is now known as Laver forcing: forcing similar to Sachs forcing, but with trees which have stems, an element of the tree such that all other elements extend it. He used a countable support iteration of this forcing, one of the first uses of such an iteration.

  In a paper of 1978 he contributed to the theory of indestructiblity, showing that there is a forcing extension in which a given supercompact cardinal remains supercompact under certain further extensions. For this purpose he used what is now called a Laver function, and Laver preparation.

  In 1984 he proved an extension of the Halpern-Läuchli theorem to an infinite product of perfect trees.

  Beginning in 1990 Rich studied an algebraic notion deriving from a large cardinal notion. If λ is such that there is a nontrivial elementary embedding j of V_λ into V_λ, then the collection of all such embeddings can be made into a structure $(E_\lambda, *)$ where $*$ is a binary operation on E_λ which satisfies the left distributive law $a * (b * c) = (a * b) * (a * c)$. He studied this structure in a series of papers. Several of the algebraic results were proved under a large cardinal assumption, while some of them were later proved by purely algebraic methods. These considerations gave rise to an interesting finite structure called a Laver table. He showed that there is an operation $*$ on $\{1, \dots, 2^n\}$ such that $a * 1 \equiv a + 1 \pmod{2^n}$ and the above left distributive law holds.

  Rich had many extra-mathematical interests. He had long been interested in chess. He was on the UC Berkeley winning team of the 1967 US Intercollegiate championship, and had the rank of an International Master. He played competitive bridge. He was an active climber; both pure rock climbing and mountaineering. For example, he climbed the normal route on the Eiger with Don Monk—a memorable trip involving a storm on the descent. He had a droll sense of humor, frequently expressed in word puzzles.

  His premature death leaves a gap in the lives of many people.

- In Memoriam: Mary Ellen Rudin. Mary Ellen Rudin was born December 7, 1924 in Hillsboro, Texas. She died March 18, 2013, peacefully at home, exactly as she wished, in Madison, Wisconsin.

  Mary Ellen got her Ph.D. in 1949 at the University of Texas, Austin under the supervision of R.L. Moore. After teaching at Duke University and the University of Rochester, she and her husband, Walter Rudin, joined the faculty of the University of Wisconsin in 1958. She became a Full Professor in 1970 and Professor Emeritus in 1991.

Walter died in 2010. The Rudins are survived by their four children. There is an excellent biographical interview of her published in: Albers, Donald J. and Reid, Constance, *An Interview with Mary Ellen Rudin*, College Math. J. 19 (1988), no. 2, 114-137. `http://www.jstor.org/stable/pdfplus/2686174.pdf`.

Mary Ellen Rudin was the Grace Chisholm Young Professor, a Hilldale Professor, a Fellow of the American Academy of Arts and and Sciences, member of the Hungarian Academy of Sciences, and received Honorary Doctor of Science Degrees from the University of North Carolina, University of the South, Kenyon College, and Cedar Crest College. She served as the Vice President of the American Mathematical Society 1980-81 and was a member of the Board of Governors of the Mathematical Association of America 1973-75 as well as numerous other committees of the AMS and MAA.

Mary Ellen Rudin was one of the leading topologists of our time. Besides solving a number of well-known outstanding open problems, she was a pioneer in the use of set-theoretic tools. She was one of the first to apply the independence methods of Cohen and others to produce independence results in topology. An entire volume devoted to articles describing her mathematics appears in the Annals of the New York Academy of Sciences: *The Work of Mary Ellen Rudin*, Papers from the Summer Conference on General Topology and Applications in honor of Mary Ellen Rudin held in Madison, Wisconsin, June 26-29, 1991. Annals of the New York Academy of Sciences, 705, 1993. The quotations below are from this volume.

In her thesis she gave an example of a nonseparable Moore space that satisfies the countable chain condition. She published the results in three papers in the Duke Math Journal. To quote Steve Watson, "This cycle represents one of the greatest accomplishments in set-theoretic topology. However the mathematics in these papers is of such depth that, even forty years latter, they remain impenetrable to all but the most diligent and patient readers."

In 1955 she used a Souslin tree to construct a Dowker space. A Dowker space is a normal space whose product with the unit interval is not normal. The existence of a Souslin tree is consistent with ZFC, but not provable from ZFC. In 1971 she constructed a Dowker space without using any extra set-theoretic axiom. The space she constructed has cardinality $(\aleph_\omega)^{\aleph_0}$. It led to an invited address at the International Congress of Mathematicians in 1974. It also led to her interest in the box topology. In 1972 she proved that the Continuum Hypothesis (CH) implies that the box product of countably many compact metric spaces is normal. In 1989, assuming CH, she constructed a Dowker space of cardinality $\aleph_1$.

Mary Ellen is well-known for her work on $\beta\mathbb{N}$, the space of ultrafilters on the natural numbers, starting in 1966. She was co-inventor of two well-known partial orders on this space, the Rudin-Keisler order and the Rudin-Frolik order. The Rudin-Frolik order led to the first proof in ZFC that the space $\beta\mathbb{N}\setminus\mathbb{N}$ is not homogeneous. Under CH, this was already known by a result of Walter Rudin.

She worked extensively on the question of S and L spaces. Mary Ellen produced the first S-space (a hereditarily separable space that is not hereditarily Lindelöf) assuming the existence of Souslin tree in 1972. Her 1985 monograph, *Lectures in Set-theoretic Topology*, devotes an entire chapter to S and L spaces. To quote Stevo Todorčević, "The terms S and L space, which are predominant in most of the literature on this subject, are first found in these lectures. This shows a great influence not only of this monograph but also of M.E. Rudin's personality on the generation of mathematician's working in this area, since it is rather unusual in mathematics to talk about certain statements in terms of their counterexamples."

In 1999, almost a decade after her retirement, Mary Ellen settled a long-standing conjecture in set theoretic topology by showing that every monotonically normal compact space is the continuous image of linearly ordered compact space. This paper was the final one in a series of five which gradually settled more and more special cases of the final result. The construction of the linearly ordered compact space is extraordinarily complex. To quote

Frank Tall, "Mary Ellen's fame is largely as a producer of weird and wonderful topological spaces – examples and counterexamples. One often wonders how on earth she was able to construct them. She has an uncanny ability to start off with a space that has some of the properties she wants, and then push it and pull it until she gets exactly what she wants. Mary Ellen cheerfully tells people not to read her papers, but rather the later ones by people who simplify what she has done, but she of course is the one who did it first."

Mary Ellen was by consensus a dominant figure in general topology. Her results are difficult, deep, original, and important. The connections she found between topology and logic attracted many set theorists and logicians to topology. The best general topologists and set theorists in the world passed regularly through Madison to visit her and work with her and her students and colleagues.

She had sixteen Ph.D. students, many of whom went on to have sterling careers of their own. To quote Michael Starbird, "From the perspective of a graduate student and collaborator, her most remarkable feature is the flood of ideas that is constantly bursting from her... It is easy to use the Mary Ellen Rudin model to become a great advisor. The first step is to have an endless number of ideas. Then merely give them totally generously to your students to develop and learn from. It is really quite simple. For Mary Ellen Rudin."

- 2013 Sacks Prize. The ASL invites nominations for the 2013 Sacks Prize for the most outstanding doctoral dissertation in mathematical logic. Nominations must be received by September 30, 2013. 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://www.aslonline.org/info-prizes.html`.

  Anyone who wishes to make a nomination for the 2013 Sacks Prize should consult the webpage `http://www.aslonline.org/Sacks_nominations.html` for the precise details of the application process. A brief summary of the procedure is provided below.

  Students who defend their dissertations (equivalent to the American doctoral dissertation) between October 1, 2012, and September 30, 2013, 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 web site from which an electronic copy in .pdf form can be downloaded, and an independent second letter of recommendation. Nominations should be sent to the Committee Chair, Theodore A. Slaman; pdf files sent as attachments by email to `slaman@math.berkeley.edu` are preferred. The form of such letters and other pertinent details can be found at the web site above, and need to be read prior to submitting a nomination. Correspondence should be addressed to Theodore A. Slaman, The University of California, Berkeley, Department of Mathematics, 719 Evans Hall #3840, Berkeley, CA 94720-3840 USA.

  Those wishing to contribute to the Sacks Prize Fund may send contributions to the ASL office (ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, New York 12604). All such contributions are tax-deductible within the USA.

- Call for Proposals: 2015 AMS-ASL Joint Special Session. The ASL Committee on Logic in North America requests proposals for an AMS-ASL Joint Special Session to be held at the Joint Mathematics Meetings in San Antonio, January 10–13, 2015. Proposals or requests for further information should be sent to the Committee Chair, Matt Valeriote (email: `matt@math.mcmaster.ca`). The deadline for receipt of proposals is January 6, 2014.

- Call for Proposals: 2016 North American Annual Meeting. The ASL Committee on Logic in North America requests proposals for the 2016 ASL North American Annual meeting, to be held some time in the first five months of 2016. The committee seeks a university somewhere in North America and a local committee to host the meeting and handle the local arrangements. The ASL meetings ordinarily cycle geographically in the pattern: east (Waterloo 2013), west (Boulder 2014), and midwest (Urbana 2015). Thus, for 2016 the committee seeks a location in the east. Any reasonable proposal, however, will be considered. For more information, interested parties should contact the Committee Chair, Matt Valeriote (email: `matt@math.mcmaster.ca`) no later than November 11, 2013.
- Discounted Dues for New ASL Individual Members. The ASL now 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 or 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, Russia, 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 (see below), as long as their country of residence is on the ASL's list of developing economies.
- Reduced Dues for Individuals and Institutions in Developing Economies. The ASL offers reduced dues for individual and institutional members in developing economies. For 2013, the reduced dues are US$18 for individuals, US$130 for institutional basic membership, and US$180 for institutional full membership. These dues apply to individuals and institutions residing in countries whose economies are classified as 'upper middle income' or below on the World Bank's annual list for four of the last five years. For further information, visit `http://www.aslonline.org/membership_outreach.html` or contact the ASL Business Office: ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, New York 12604, USA; Tel: 1-845-437-7080; Fax: 1-845-437-7830; email: `asl@vassar.edu`.
- Book and Journal Discounts for ASL Members. Several publishers now offer discounts on books and journals to ASL members. For a detailed description of these discounts, visit `http://www.aslonline.org/members-discounts.html` on the ASL website, or write to the ASL Business Office.
- Student Travel Awards: The 2014 ASL North American Annual 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 2014 ASL North American Annual Meeting in Boulder, Colorado (the announcement for travel award applications for the 2014 European Summer Meeting will be made later in the fall of 2013). 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 2014 ASL North American Annual Meeting, applications and recommendations should be received before the deadline of March 10, 2014, by the Program Chair: Marcia Groszek, Department of Mathematics, 6188 Kemeny Hall, Dartmouth College, Hanover, NH 03755-3551 USA; Fax: 603-646-1312; email: `marcia.groszek@dartmouth.edu`. Applications by email are preferred.

For ASL student member travel grants to ASL or ASL-sponsored meetings (other than the 2014 North American Annual Meeting and the 2014 European Summer Meeting), applications and recommendations should be received at least three months prior to 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.

- 2013-14 ASL Winter Meeting (with Joint Mathematics Meetings). *January* 15–18, 2014, *Baltimore*, *Maryland*. This meeting will take place in conjunction with the Joint Mathematics Meetings. The invited speakers include: J. Avigad, J. Hamkins, M. Mariallis, and A. Medvedev. The members of the Program Committee are A. Dow (Chair), K. Lange, and D. Lippel. The meeting also includes the joint AMS-ASL Special Session, *Logic and probability*, co-chaired by W. Calvert, D. Cenzer, J. Franklin, and V. Harizanov.

  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 must be received by the deadline of September 2, 2013, 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`.

- 2013-14 ASL Spring Meeting (with APA). *April* 16–17, 2014, *San Diego*, *California*. This meeting will be held jointly with the Annual Meeting of the Pacific Division of the American Philosophical Association, April 16–20, 2014. The members of the Program Committee are Z. Damnjanovic, E. Reck (Chair), and S. Walsh.

  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 must be received by the deadline of September 24, 2013, 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`.

- 2014 ASL North American Annual Meeting. *May* 19–22, 2014, *Boulder*, *Colorado*. The members of the Program Committee are: M. Groszek (Chair), A. Kanamori, K. Kearnes, J. Marikova, S. Thomas, and H. Towsner. The Local Organizing Committee includes: N. Dobrinen, G. Forbes, N. Galatos, K. Kearnes (Chair), D. Monk, and A. Szendrei.

  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 must be received by the deadline of February 21, 2014, 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`.

- Rules for Abstracts. The rules for abstracts of contributed talks at ASL meetings (including those submitted "by title") may be found at the website 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 submitting them. Revised abstracts that follow the rules will be considered if they are received by the announced deadline.

- Eighth International Conference on Computability, Complexity and Randomness (CCR 2013). *September* 23–27, 2013, *Moscow, Russia.* Topics for this event include: algorithmic randomness, computability theory, computational complexity, Kolmogorov complexity, and reverse mathematics and logic. The invited speakers include: G. Barmpalias, L. Bienvenu, E. Hirsch, E. Jeandel, J. Reimann, A. Shen, M. Yampolsky, S. Yekhanin, and Y. Yue. The Chair of the Program Committee is N. Greenberg and the Chair of the Local Organizing Committee is N.K. Vereshchagin. The Chair of the CCR Steering committee is R. Downey. For further information, visit http://ccr2013.mccme.ru/. (ASL Sponsored Meeting.)

- Large Cardinals and Forcing. *September* 23–27, 2013, *Vienna, Austria.* This, and the workshop directly following this announcement will be held at the Erwin Schrödinger Institute (ESI) as part of the ESI Thematic Program, *Forcing, Large Cardinals and Descriptive Set Theory*, organized by S.D. Friedman, M. Goldstern, A. Kechris, J. Kellner, and W.H. Woodin. For further information, visit http://www.logic.univie.ac.at/2013/ESI/Home.html. (ASL Sponsored Meeting.)

- Descriptive Set Theory. *September* 30–*October* 4, 2013, *Vienna, Austria.* For details about this workshop, see the announcement directly above. For further information, visit http://www.logic.univie.ac.at/2013/ESI/Home.html. (ASL Sponsored Meeting.)

- The Andrzej Mostowski Centenary Conference (Mostowski 100). *October* 11–13, 2013, *Warsaw, Poland.* Invited speakers include: M. Bojańczyk, M. Džamonja, H. Friedman, T. Jech, L. Kołodziejczyk, K. Krupiński, A. Macintyre, M. Magidor, Y. Moschovakis, L. Newelski, A. Pillay, C. Rosendal, Z. Sela, S. Solecki, J. Väänänen, J. Woleński, and W.H. Woodin. There will also be a poster session at which graduate students can present their work. The local organizers include: K. Jaworska, M. Kurkowski, H. Michalewski, F. Murlak, D. Niwiński, M. Sabok, M. Srebrny, and S. Toruńczyk. For further information, visit http://mostowski100.mimuw.edu.pl/doku.php.

- Nineteenth International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-19). *December* 14–19, 2013, *Stellenbosch, South Africa.* This conference series provides a a forum where researchers in the areas of logic, automated reasoning, computational logic, programming languages and their applications come together to discuss advances in these fields. The Program Chairs are K. McMillan, A. Middeldorp, and A. Voronkov; the Conference Chairs are B. Fischer and G. Sutcliffe; and the Workshop Chair is L. Kovacs. For further information, visit http://www.LPAR-19.info.

- New ASL Books. To see 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.

- Alan Turing: His Work and Impact. Editors: S.B. Cooper and J. van Leeuwen (Elsevier Science, 2013, ISBN: 9780123869807) http://store.elsevier.com/product.jsp?isbn=9780123869807.