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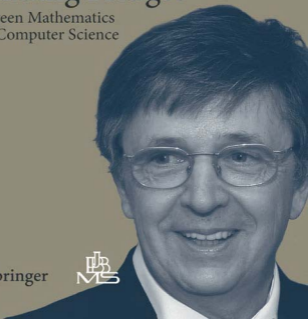
Martin Grötschel
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Building Bridges

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PREFACE

László Lovász, briefly called Laci by his friends, turned sixty on March 9, 2008. To celebrate this special birthday two conferences have been held in Hungary, one in Budapest (August 5–9, 2008) with invited speakers only and one in Keszthely (August 11–15, 2008). Several top mathematicians and computer scientists have not only lectured at these meetings but also dedicated (together with some coauthors) research papers to this occasion. This volume is the collection of their articles. The contributions to the conferences and this book honor a person who has not only made an almost uncountable number of fundamental contributions to mathematics and computer science, but who also broke down many borders between mathematical disciplines and built sustainable bridges between mathematics and computer science.

Laci has been a role model for many young researchers, he inspired lots of colleagues, and guided quite a few scientific careers. In addition, he is an extremely nice person and very pleasant colleague, and that is why so many researchers have come to the “Lovász meetings” in Hungary to present their best recent work and celebrate with him.

In the Fazekas Mihály Gimnázium in Budapest, a breeding place of world class mathematicians, Laci’s outstanding talent became visible at very young age. He did not only win various mathematics competitions in Hungary, Lovász also won three gold medals and one silver medal in the International Mathematical Olympiad. The solution of an open problem in lattice theory gained him his first international visibility and soon after, in 1972, his proof of the perfect graph theorem earned him lasting fame in graph theory. An unparalleled sequence of scientific achievements followed and is continuing till today. It is impossible to mention even a small fraction of Laci’s results here. The list of his publications (up to summer 2008) is contained in this volume to indicate the breadth and depth of his contributions.

Being a combinatorialist at heart, like so many Hungarian mathematicians, it has been natural for Laci to employ combinatorial techniques in other areas of mathematics; but he also brought topology, algebra, analysis,

stochastics and other mathematical fields to combinatorics, often in quite unusual ways. In this way he opened up quite a number of new flourishing fields of research. Algorithmic issues such as polynomial time solvability and general complexity theory opened his eyes for computer science where he particularly contributed to the interface between computer science and discrete mathematics.

After a distinguished academic career with employments and visiting positions in Szeged, Budapest, Waterloo, Bonn, Cornell, Princeton, Yale (and guest professorships in many other places) Lovász had worked for Microsoft Research in Redmond from 1998 to 2006. He returned thereafter to Budapest to become director of the Mathematical Institute of Eötvös Loránd University.

His international reputation is stellar. One proof of this claim is a remarkable series of prestigious honors; among them are the Grünwald, Pólya, Fulkerson, Wolf, Knuth, Gödel, von Neumann, Bolyai, and Széchenyi Prizes and various other distinctions such as honorary degrees and professorships. In 2006 László Lovász has been elected president of the International Mathematical Union for the years 2007 to 2010. A few more details can be found in his (very brief) Curriculum Vitae on pages 11 to 13 in this volume.

Laci has always been a family man, a loving husband, father, and meanwhile also grandfather. With Kati Vesztergombi, his wife for almost 40 years, he has not only shared family and friends; Kati and Laci are also closely linked by their common love for mathematics. Their relationship has not only resulted in three wonderful daughters and a son but also in two joint books and quite a number of papers. Kati has been a mainstay in Laci's life since their common time in high school. That is why we have chosen to display a husband and wife portrait of the couple on page 9 of this volume.

Budapest
August 2008

Martin Grötschel
Gyula Katona



Kati Vesztergombi and László Lovász

CURRICULUM VITAE OF LÁSZLÓ LOVÁSZ

Born: March 9, 1948 in Budapest, Hungary

Family: Married, 4 children

Citizenship: Hungary, United States

Degrees:

Dr. rer. nat., Eötvös Loránd University, Budapest, Hungary, 1971;

Candidate of mathematical sciences, Hungarian Academy of Sciences, Budapest, Hungary, 1970;

Dr. of mathematical sciences, Hungarian Academy of Sciences, Budapest, Hungary, 1977.

Academies:

Hungarian Academy of Sciences, corresp. member, 1979; full member, 1985;

European Academy of Arts, Sciences and Humanities, 1981;

Academia Europaea, 1991;

Nordrhein-Westfälische Akademie der Wissenschaften, corresp. member, 1993;

Deutsche Akademie der Naturforscher Leopoldina, 2002;

Russian Academy of Sciences, 2006;

Royal Netherlands Academy of Arts and Sciences, 2006;

Royal Swedish Academy of Sciences, 2007.

Positions in scientific societies:

Executive Committee of the International Mathematical Union, 1987–1994;

Presidium of the Hungarian Academy of Sciences, 1990–1993 and since 2008;

Abel Prize Committee, 2004–2006;

President of the International Mathematical Union, 2007–2010;

Positions held:

Research Associate, Eötvös Loránd University, Budapest, 1971–75;

Docent, József Attila University, Szeged, 1975–78;

Professor, Chair of Geometry, József Attila University, Szeged, 1978–82;

Professor, Chair of Computer Science, Eötvös Loránd University, Budapest, 1983–93;

Professor, Dept. of Computer Science, Yale University, 1993–2000;

Senior Researcher, Microsoft Research, 1999–2006;

Director, Mathematical Institute of the Eötvös Loránd University, Budapest, 2006–.

Visiting positions:

Vanderbilt University, 1972/73;

University of Waterloo, 1978/79;

Universität Bonn, 1984/85;

University of Chicago, Spring 1985;

Cornell University, Fall 1985;

Mathematical Sciences Research Institute, Berkeley, Spring 1986;

Princeton University, Fall 1987, Spring 1989, 1990/91, 1992/93.

Honorary degrees and positions:

Adjunct Professor, University of Waterloo, Waterloo, Ontario, Canada, 1980–1990;

A. D. White Professor-at-Large, Cornell University, Ithaca, NY, 1982–1987;

Honorary Professor, Universität Bonn, 1984; Academia Sinica, 1988;

John von Neumann Professor, Universität Bonn, 1985;

Doctor Honoris Causa: University of Waterloo, Ontario, Canada, 1992; University of Szeged, Hungary, 1999; Budapest University of Technology, 2002; University of Calgary, 2006.

Awards:

Grünwald Géza Prize, Bolyai Society, 1970;

George Pólya Prize, Soc. Ind. Appl. Math., 1979;

Best Information Theory Paper Award, IEEE, 1981;

Ray D. Fulkerson Prize, Amer. Math. Soc. – Math. Prog. Soc., 1982;

State Prize, Hungary, 1985;

Tibor Szele Medal, Bolyai Society, 1992;

Brouwer Medal, Dutch Mathematical Society – Royal Netherl. Acad. Sci., 1993;

National Order of Merit of Hungary, 1998;

Bolzano Medal, Czech Mathematical Society, 1998;

Wolf Prize, Israel, 1999;

Knuth Prize, ACM–SIGACT, 1999;

Corvin Chain, Hungary, 2001;

Goedel Prize, ACM–EATCS, 2001;

John von Neumann Medal, IEEE, 2005;
John von Neumann Theory Prize, INFORMS, 2006;
Bolyai Prize, Hungary, 2007;
Széchenyi Grand Prize, Hungary, 2008.

Editorial boards:

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Europ. J. Combinatorics, Discrete and Computational Geometry,
Random Structures and Algorithms,
Acta Mathematica Hungarica,
Acta Cybernetica,
Electronic Journal of Combinatorics,
Geometric and Functional Analysis.

Fields of research: Combinatorial optimization, graph theory, theoretical computer science.

Publications: 9 books, 250 research papers.

PUBLICATIONS OF LÁSZLÓ LOVÁSZ

Books:

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- [2] Gács P., Lovász L.: *Algoritmuskok*, Műszaki Könyvkiadó, Budapest, 1978; Tankönyvkiadó, Budapest, 1987.
- [3] L. Lovász: *Combinatorial Problems and Exercises*, Akadémiai Kiadó – North Holland, Budapest, 1979 (Japanese translation: Tokai Univ.Press, 1988; Hungarian translation: Typotech, 1999; Second edition: North-Holland Publishing Co., Amsterdam, 1993.)
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- [5] L. Lovász: *An Algorithmic Theory of Numbers, Graphs, and Convexity*, CBMS-NSF Regional Conference Series in Applied Mathematics **50**, SIAM, Philadelphia, Pennsylvania 1986.
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Research papers:

- [1] Lovász L.: Független köröket nem tartalmazó gráfokról (On graphs containing no independent circuits), *Mat. Lapok*, **16** (1965), 289–299.
- [2] L. Lovász: On decomposition of graphs, *Studia Math. Hung.*, **1** (1966), 237–238.
- [3] L. Lovász: On connected sets of points, *Annales Univ. R. Eötvös*, **10** (1967), 203–204.
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