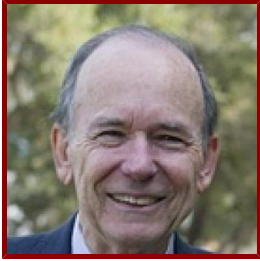


# Stanford

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## David Luenberger

Professor of Management Science and Engineering, Emeritus

### Bio

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#### BIO

David G. Luenberger received the B.S. degree from the California Institute of Technology and the M.S. and Ph.D. degrees from Stanford University, all in Electrical Engineering. Since 1963 he has been on the faculty of Stanford University. He helped found the Department of Engineering-Economic Systems, now merged to become the Department of Management Science and Engineering, where he is currently a professor.

He served as Technical Assistant to the President's Science Advisor in 1971-72, was Guest Professor at the Technical University of Denmark (1986), Visiting Professor of the Massachusetts Institute of Technology (1976), and served as Department Chairman at Stanford (1980-1991).

His awards include: Member of the National Academy of Engineering (2008), the Bode Lecture Prize of the Control Systems Society (1990), the Oldenburger Medal of the American Society of Mechanical Engineers (1995), and the Expository Writing Award of the Institute of Operations Research and Management Science (1999). He is a Fellow of the Institute of Electrical and Electronic Engineers (since 1975).

#### Interests:

His overall interest is the application of mathematics to issues in control, planning, and decision making. He has worked in the technical fields of control theory, optimization theory and algorithms, and investment theory for portfolios and project evaluation. He has published six major textbooks: Optimization by Vector Space Methods, Linear and Nonlinear Programming (jointly with Yinyu Ye), Introduction to Dynamic Systems, Microeconomic theory, Investment Science, and Information Science. He has published over eighty journal papers.

#### ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Management Science and Engineering

#### HONORS AND AWARDS

- Fellow, IEEE (1975)
- Best Paper Award, JACC (1970)
- First Place, ASEE PSW Young Engineering Teachers Contest (1971)
- Outstanding Paper Award, IEEE Control Systems Society (1986)
- Bode Prize, IEEE Control Systems Society (1990)
- Oldenburger Medal, ASME (1998)
- Expository Writing Award, Institute for Operations Research and the Management Sciences (1999)

- Vol. 105, No. 3, June 2000, Special issue of the Journal of Optimization Theory and Applications (2000)

## BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, National Academy of Engineering (2013 - present)

## PROFESSIONAL EDUCATION

- BS, California Institute of Technology , Electrical Engineering (1959)
- PhD, Stanford University , Electrical Engineering (1963)
- MS, Stanford University , Electrical Engineering (1961)

## Publications

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### PUBLICATIONS

- **Pricing dynamic binary variables and their derivatives** *QUANTITATIVE FINANCE*  
Luenberger, D. G.  
2012; 12 (3): 451-464
- **Analysis of the rebalancing frequency in log-optimal portfolio selection** *QUANTITATIVE FINANCE*  
Kuhn, D., Luenberger, D. G.  
2010; 10 (2): 221-234
- **Algorithms for worst-case design and applications to risk management (Book Review)** *JOURNAL OF ECONOMIC DYNAMICS & CONTROL*  
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- **Arbitrage and universal pricing** *JOURNAL OF ECONOMIC DYNAMICS & CONTROL*  
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2000; 20: 517-529
- **Products of trees for investment analysis** *JOURNAL OF ECONOMIC DYNAMICS & CONTROL*  
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1998; 22 (8-9): 1403-1417
- **Welfare from a benefit viewpoint** *ECONOMIC THEORY*  
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- **EXTERNALITIES AND BENEFITS** *JOURNAL OF MATHEMATICAL ECONOMICS*  
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- **A BENEFIT APPROACH TO MICROECONOMICS**  
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- **OPTIMALITY AND THE THEORY OF VALUE** *JOURNAL OF ECONOMIC THEORY*  
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- **STRONGLY SYMMETRICAL SUBGAME PERFECT EQUILIBRIA IN INFINITELY REPEATED GAMES WITH PERFECT MONITORING AND DISCOUNTING** *GAMES AND ECONOMIC BEHAVIOR*  
Cronshaw, M. B., Luenberger, D. G.  
1994; 6 (2): 220-237
- **DUAL PARETO-EFFICIENCY** *JOURNAL OF ECONOMIC THEORY*  
Luenberger, D. G.  
1994; 62 (1): 70-85
- **A PREFERENCE FOUNDATION FOR LOG MEAN-VARIANCE CRITERIA IN PORTFOLIO CHOICE PROBLEMS** *JOURNAL OF ECONOMIC DYNAMICS & CONTROL*  
Luenberger, D. G.  
1993; 17 (5-6): 887-906
- **NEW OPTIMALITY PRINCIPLES FOR ECONOMIC-EFFICIENCY AND EQUILIBRIUM** *JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS*  
Luenberger, D. G.  
1992; 75 (2): 221-264
- **A DOUBLE LOOK AT DUALITY** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*  
Luenberger, D. G.  
1992; 37 (10): 1474-1482
- **BENEFIT FUNCTIONS AND DUALITY** *JOURNAL OF MATHEMATICAL ECONOMICS*  
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1992; 21 (5): 461-481
- **BOUNDARY RECURSION FOR DESCRIPTOR VARIABLE SYSTEMS** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*  
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- **DYNAMIC EQUILIBRIA FOR LINEAR-SYSTEMS AND QUADRATIC COSTS** *AUTOMATICA*  
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1987; 23 (1): 117-121
- **CONTROL OF LINEAR DYNAMIC MARKET SYSTEMS** *JOURNAL OF ECONOMIC DYNAMICS & CONTROL*  
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1986; 10 (3): 339-351
- **GENERIC CONTROLLABILITY THEOREMS FOR DESCRIPTOR SYSTEMS** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*  
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- **GENERIC PROPERTIES OF COLUMN-STRUCTURED MATRICES** *LINEAR ALGEBRA AND ITS APPLICATIONS*  
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- **ALGORITHMS TO VERIFY GENERIC CAUSALITY AND CONTROLLABILITY OF DESCRIPTOR SYSTEMS** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*  
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- **OPTIMAL-CONTROL THEORY - APPLICATIONS TO MANAGEMENT SCIENCE - SETHI,SP, THOMPSON,GL (Book Review) INTERFACES**  
Book Review Authored by: Luenberger, D. G.  
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- **ESTIMATION OF STRUCTURED COVARIANCE MATRICES PROCEEDINGS OF THE IEEE**  
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- **CITATION CLASSIC - OBSERVERS FOR MULTIVARIABLE SYSTEMS CURRENT CONTENTS/ENGINEERING TECHNOLOGY & APPLIED SCIENCES**  
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1981; 19 (5): 561-585
- **TIME-INVARIANT DESCRIPTOR SYSTEMS AUTOMATICA**  
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- **COMPLETE STABILITY OF NONCOOPERATIVE GAMES JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS**  
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- **SINGULAR DYNAMIC LEONTIEF SYSTEMS ECONOMETRICA**  
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- **NEIGHBORHOOD EFFECTS AND MAINTENANCE OF URBAN HOUSING STOCK JOURNAL OF MATHEMATICAL SOCIOLOGY**  
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1975; AC20 (2): 184-191
- **A Combined Penalty Function and Gradient Projection Method for Nonlinear Programming JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS**  
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