

# CURRICULUM VITAE

Edward D. Lipson

Department of Physics  
Syracuse University  
Syracuse, NY 13244-1130  
(315) 443-9107; fax 443-9103  
Internet: edlipson@syr.edu

*Home address*  
8035 Shadowrock Road  
Manlius, NY 13104  
(315) 682-5755

## EDUCATION

Ph.D. Physics, California Institute of Technology, Pasadena, CA (1971),  
(adviser: Felix Boehm)  
B.Sc.(Hons.) Physics and Mathematics, University of Manitoba, Winnipeg, Canada (1966)

## ACADEMIC EMPLOYMENT

1996-1997	Interim Chair, Department of Physics, Syracuse University
1995-1996	Acting Chair, Department of Physics, Syracuse University
1994-	Faculty Associate, Northeast Parallel Architectures Center, Syracuse University
1990	Compton Visiting Professor, Department of Biology, Technion (Haifa, Israel; January-May)
1989-1995	Associate Chair, Department of Physics, Syracuse University
1985-	Professor of Physics, Syracuse University
1983-89	Director, Graduate Biophysics Program, Syracuse University
1980-85	Associate Professor of Physics, Syracuse University
1976-80	Assistant Professor of Physics, Syracuse University
1974-76	Senior Research Fellow in Biology, California Institute of Technology
1971-74	Research Fellow in Biology, California Institute of Technology (with Max Delbrück)
Summers 1978 & 1981	Visiting Associate in Biology, California Institute of Technology
Summer 1976	Instructor in course "Phycomyces: Behavior, Genetics, Biochemistry" at Cold Spring Harbor Laboratory

## HONORS

1979-83	Alfred P. Sloan Foundation Fellow
1972-74	NIH Postdoctoral Research Fellow
1966-69	NSF Predoctoral Fellow
1966-67	Woodrow Wilson Fellow (Honorary)
1966	University Gold Medal, Allen Medal in Physics
1962-66	nine scholarships
1964	Governor General's Gold Medal

## CURRENT RESEARCH INTERESTS

Biophysics: Cellular and molecular bases of the blue-light responses of the microorganism, *Phycomyces*, a model system for sensory transduction processes in single cells. Research approaches include physiology (including nonlinear system identification), genetics, biochemistry, and spectroscopy.

Medical Physics: Human-computer interfaces, particularly for people with severe disabilities (custom software, sensors and transducers, and interface electronics). Telemedicine and medical imaging.

## GRANTS RECEIVED

- “BotMasters: An Interactive Wearable Universal Human-Computer-Interface System”  
Defense Advanced Research Projects Agency, 7/1/98–6/30/00, \$1,599,971 (senior investigator; with D. Warner and G. Fox)
- “Integration of Information Age Networking and Parallel Supercomputer Simulations into University General Science and K-12 Curricula”  
National Science Foundation, 11/1/95 to 10/30/98, \$927,935
- “The Grok Box — An Interactive Perceptualization Environment”  
Defense Advanced Research Projects Agency, 5/29/97–12/31/97, \$97,500 (senior investigator; with D. Warner and G. Fox)
- “Information Technology in Service of Science Education”  
National Science Foundation, 3/15/96 to 3/14/99, \$200,000 (co-PI; with G. Vidali et al.)
- “Cooperation in Applied Science and Technology (with Newly Independent States of Former Soviet Union)”  
National Research Council, 1/1/93 to 3/31/94, \$11,100
- “System Analysis of *Phycomyces* Photoresponses”  
National Institutes of Health, 6/1/90 to 5/31/95, \$506,211
- “Blue Light Photoreceptors in *Phycomyces*”  
National Science Foundation, 7/1/87 to 6/30/94 \$214,000
- “Acquisition of ultracentrifuge, liquid scintillation counter, autoclave, and water purification system for photosensory research in microorganisms”  
National Science Foundation, 6/1/89 to 11/30/91, \$58,113  
(joint grant with Dr. Kenneth Foster, SU Physics Dept.)
- “Blue Light Receptors in Fungi: Biophysical, Molecular, and Genetic Approaches”  
United States-Israel Binational Science Foundation, 9/1/87 to 8/31/90, \$75,000  
(joint grant with Dr. B. Horwitz of the Technion in Haifa)
- “System Analysis of *Phycomyces* Photoresponses”  
National Institutes of Health, 6/1/86 to 5/31/90, \$179,059
- “Cellular Photobiology of *Phycomyces*”  
US-Spain Joint Committee for Scientific and Technological Cooperation,  
1/1/85 to 12/31/87, \$30,000  
(joint grant with Dr. E. Cerdá-Olmedo, University of Seville)
- “Genetic Analysis of *Phycomyces* Light Response System”  
National Science Foundation, 3/1/84 to 8/31/87, \$205,000
- “System Analysis of *Phycomyces* Photoresponses”  
National Institutes of Health, 7/1/81 to 6/30/85, \$357,326

“Biochemical Analysis of Photosensory Transduction in *Phycomyces*”

Senate Research Committee, Syracuse University, 1984

“Genetic Analysis of *Phycomyces* Light Response System”

National Science Foundation, 9/1/80 to 2/29/84, \$162,000

Alfred P. Sloan Research Fellowship

Alfred P. Sloan Foundation, 9/16/79 to 9/15/83, \$20,000

“System Analysis of *Phycomyces* Photomutants”

National Institutes of Health, 7/1/77 to 12/31/80, \$179,059

## THESES AND DISSERTATIONS DIRECTED

[Current Ph.D. students: Michael Dowler, Jiangang Guo, Taviare Hawkins]

Paul Schmidt, “Light Interactions with *Phycomyces* Sporangiohores Investigated with Optical and Biochemical Approaches,” M.S. May 1991

Chafia Trad, “Blue Light Photoreception in *Phycomyces*: Spectrophotometric and Biochemical Analyses,” Ph.D. May 1987

Anuradha Palit, “Nonlinear System Analysis of Light-Growth Response in Behavioral Mutants of *Phycomyces*,” Ph.D. May 1987

Promod Pratap, “Nonlinear System Analysis of *Phycomyces* Light-Growth Response with Sum-of-Sinusoids Test Stimuli,” Ph.D. May 1986

John Pollock, “Biochemical Analysis of Flavoproteins from *Phycomyces* Sporangiohores as Blue Light Receptors,” Ph.D. June 1984

Maharabooshanam Krishnamoorthy, “Computation of Wiener Kernels of a Microbial Stimulus-Response System,” M.S. June 1978

## COURSES TAUGHT

PHY 105/106	Science for the 21st Century
PHY 200	Science for the 21st Century (pilot course)
PHY 212	General Physics (laboratory)
PHY 277	Physics for the Biological Sciences
PHY 315	Biophysics
PHY 423	Intermediate Mechanics
PHY 515	Biophysics
PHY 551	Optics (lecture and laboratory course)
PHY 651	Selected Topics in Optics
PHY 715/716/720	Selected Topics in Biophysics

## SERVICE

*Department of Physics*

Acting/Interim Chair 1995-1997

Associate Chair 1989-1995

Member Graduate Admissions Committee 1991-

Colloquium Series Coordinator, Department of Physics 1989-1994

Member Planning Committee 1985-

Chair Tenure and Promotions Committee 1984-89

Member Chair Review Panel 1984-89, 1993-

Member Faculty Search Committee 1983-84  
 Member Undergraduate Committee 1981-82  
 Member Graduate Committee 1977-80 (Chair 1979-80)

*College of Arts and Sciences*

Member, Executive Committee, Graduate Biophysics Program, 1989-  
 Director, Graduate Biophysics Program 1983-89  
 Member, Search Committee for Dean 1985-86  
 Member, Promotions Committee 1981-82, 1985-86  
 Member, Faculty Council 1982-83  
 Chair, Faculty Council Subcommittee Reviewing Tenure and Promotions Procedures  
 1982-83  
 Member, Graduate Biophysics Program 1976-

*University*

Member, Chancellor's Task Force for Developing Guiding Principles for the Long-  
 Range Budget Plan 1994-  
 Chair, Senate Budget Committee's ad hoc Subcommittee on Finances of Athletics  
 Department and Carrier Dome 1993-94  
 Member, Senate Budget Committee 1993-  
 Member, Committee to Review University-Wide Services for Graduate Students and Law  
 1992-  
 Member, Board of Graduate Studies 1991-94  
 Member, Computational Neuroscience Program 1991-  
 Member, University Fellowship Subcommittee for Natural Sciences and Mathematics  
 1991  
 Member, University Senate 1990-92, 1993-  
 Member, Senate Academic Affairs Committee 1990-92  
 Member, Neuroscience Program 1984-  
 Member, Senate Research Committee 1979-80

*Community*

Judge in Annual Scholastic Science Fair 1979-86  
 Instructor in "Frontiers of Science" program (NSF-supported lecture and laboratory  
 program to acquaint high school teachers with scientific research) 1985, 1990  
 President, Syracuse Friends of Chamber Music 1987-88

*Profession*

Member of Evaluation Committee for the 1997 Kuwait Prize in Basic Sciences,  
 Kuwait Foundation for the Advancement of Science, Kuwait City, Kuwait,  
 November 15-19, 1997  
 Program chair of Spring Meeting (topic: *Biological Physics*) of American Physical  
 Society New York State Section, Syracuse University, Syracuse, NY, April 10-11,  
 1992 Co-organized international scientific meeting on *Phycomyces* research held at  
 Banbury Conference Center, Cold Spring Harbor Laboratory, Long Island, New  
 York, August 2-8, 1982

Co-organized international scientific meeting on *Phycomyces* research held at la Residencia de la Universidad de Sevilla, La Rábida, Huelva, Spain, June 8-13, 1986

**OTHER PROFESSIONAL DATA**

*Memberships in Professional Societies*

American Association for the Advancement of Science  
American Physical Society  
American Society for Photobiology  
Biophysical Society  
European Society for Photobiology

*Elected Office in Professional Societies*

Council Member, American Society for Photobiology 1989-92

*Appointed Offices in Professional Societies*

Chair, Public Affairs Committee, American Society for Photobiology, 1991-93  
Chair, Publications Committee, American Society for Photobiology, 1990-91  
Member, Awards Committee, American Society for Photobiology, 1989-91