

Curriculum Vitae
Morteza (Mory) Gharib

Hans W. Liepmann Professor of Aeronautics and Professor of Bioengineering

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Education: California Institute of Technology, Pasadena, CA, June 1983
Ph. D., Aeronautics (Fluid Mechanics)
Syracuse University, Syracuse, NY, September 1978
M. S., Mechanical and Aerospace Engineering
Tehran University, Tehran, Iran, June 1976
B. S., Mechanical Engineering

Professional Experience:

2002-Present **Hans W. Liepmann Professor of Aeronautics and Professor of Bioengineering,**
California Institute of Technology
Founding Chairman of the Bioengineering Steering Committee

2001-2002 **Professor of Aeronautics, Director of the Center for Quantitative Visualization,**
Graduate Aeronautical Labs, California Institute of Technology

1993-2001 **Professor of Aeronautics,** Graduate Aeronautical Labs, California Institute of
Technology

1992-1993 **Professor of Fluid Mechanics,** Department of Applied Mechanics and
Engineering Sciences, University of California, San Diego

1988-1992 **Associate Professor of Mechanical Engineering,** Department of Applied
Mechanics Engineering Sciences, University of California, San Diego

1985-1988 **Assistant Professor of Mechanical Engineering,** Department of Applied
Mechanics and Engineering Sciences, University of California, San Diego

1983-1985 **Senior Scientist,** Jet Propulsion Laboratory and California Institute of Technology

1978-1983 **Graduate Student/Research Assistant,** California Institute of Technology

Honors, Awards, and Professional Recognition:

- Fellow, American association for the advancement of science (AAAS)
- Fellow, American Physical Society (APS)
- Fellow, American Institute for Medical and Biological Engineering (AIMBE)
- Fellow, The Institute of Physics (IP)
- Fellow, American Society of Mechanical Engineering (ASME)
- NASA New Technology Recognition for Capillary Lithography of Nanofiber Arrays, 2007
- NASA New Technology Recognition for NanoWicks: Nanofiber-Patterned Surfaces for Passive Fluid Transport, Nanopumping, Ultrafiltration, Nanomixing and Fluidic Logic, 2007
- Journal of Flow visualization, 10th anniversary best contribution award (2007)
- Distinguished Israel Pollak Lectureship Award, 2005
- Sackler Scholar in Bioengineering, University of Tel Aviv
- NASA New Technology Recognition for Miniaturized Sensor for Measuring Particle Size, 2000
- NASA New Technology Recognition for Miniaturized Shear Stress Sensor for Non-Intrusive Measurement of Wall Shear, 2000
- Watson Lecturer, Caltech, 1997 & 2002
- Editor, *Experiments in Fluids* (1995-2003)
- Associate Editor, *Journal of Fluid Engineering*, ASME (1992--1995)
- Executive Committee Member, American Physical Society (1992--1995)
- Award for Excellence, Visualized Image (Artistic Section), 1995, Visualization Society of Japan
- Award for Excellence, Visualized Image (Technical Section), 1995, Visualization Society of Japan

- Flow Visualization Award, American Physical Society, 1983, 1987, 1989, 1993,1994, 2000, 2004
- NASA New Technology Recognition for Development of a New Automated Particle Tracing Technique for Velocity Measurement,1986

Professional Societies:

- American Physical Society (APS) Fellow
- Member, Sigma Xi The Scientific Research Society
- American association for the advancement of science (AAAS) Fellow
- American Institute for Medical and Biological Engineering (AIMBE) Fellow
- The Institute of Physics (IP) Fellow
- American Society of Mechanical Engineering (ASME) Fellow
- Senior Member, American Institute of Aeronautics and Astronautics
- Member, Biomedical Engineering Society
- Member, American Physiological Society

Visiting Appointments:

Sackler Scholar in Bioengineering, University of Tel Aviv (2000-2001)

Editorial Boards:

Editor, *Experimental Techniques Book Series*, Springer-Verlag

Editorial board, *Experiments in Fluids*

Associate Editor, *Journal of Fluid Engineering*, ASME (1992—1995)

Editor, *Experiments in Fluids* (1995-2003)

Patents:

Implantable small percutaneous valve and methods of delivery(*February 19, 2008*) US 7,331,991

Glaucoma stent for treating glaucoma and methods of use (*February 19, 2008*) US 7,331,984

Implant with anchor (*November 20, 2007*) US 7,297,130

Apparatus and Methods for Treating Root Canals of Teeth (October 25, 2007) US 20070248932

Hydroimpedance Pump (*January 16, 2007*) US 7,163,385)

Implantable heart assist system and method of applying same (*December 5, 2006*) US 7,144,365)

Bladeless Pump (*April 25, 2006*) US 7,033,132)

Aperture coded camera for three dimensional imaging (*February 28, 2006*) US 7,006,132

Implant with pressure sensor for glaucoma treatment (*January 3, 2006*) US 6,981,958

Integrated particles sensor formed on single substrate using fringes formed by diffractive elements (*October 18, 2005*) US 6,956,230

Apparatus and method for treating glaucoma (*October 18, 2005*) US 6,955,656

L-shaped implant with bi-directional flow (*August 24, 2004*) US 6,780,164

Glaucoma treatment device (*May 18, 2004*) US 6,736,791

Diffractive Optic Fluid Shear Stress Sensor (*April 6, 2004*) US 6,717,172

Hydro-Elastic Pump Which Pumps using Non-Rotary, Bladeless and Valveless Operations (*January 20, 2004*) US 6,679,687

Bifurcatable Trabecular Shunt for Glaucoma Treatment (*December 23, 2003*) US 6,666,841

Miniature optical sensor (*November 25, 2003*) US 6,654,102

Apparatus and method for treating glaucoma (*October 28, 2003*) US 6,638,239

Sub Miniaturized Laser Doppler Velocimeter Sensor (*August 19,2003*) US 6,608,668

Bladeless Pump (*June 24, 2003*) US 6,582,208

Particle Sizing and Concentration Sensor using a Hollow Shaped Beam (*June 17, 2003*) US 6,580,503

Bladeless Pump (*January 14, 2003*) US 6,506,025

Implantable Heart Assist System and Method of Applying Same (*May 21, 2002*) US 6,390,969

Implantable Heart Assist System and Method of Applying Same (*May 14, 2002*) US 6,387,037

Aperture-Coded Camera for Three Dimensional Imaging (*August 21, 2001*) US 6,278,847

Hydro elastic pump which pumps using non-rotary bladeless and valveless operations (*July 3, 2001*) US 6,254,355

Areas of Research Activities:

Dr. Gharib's current research interests include, Vortex dynamics, development of Image-based flow diagnostic systems, and nano and micro-fluidics. His biomechanics work includes studies of blood flow impact on the human embryonic heart development, cardiovascular hemodynamics and bio-propulsion.