

CURRICULUM VITAE

Mary –Hrachoochi Boghosian, PhD, MBA

Yerevan, Arabgir, 75 Victor Hambarsoomyan, Unit #16

e-mail: mboghosian@aua.am or mary.boghosian@att.net

Tel: (060) 61 2603 (Office), (093) 300-277 (Mobile)

Education

1997 MBA	(Technology, Innovation & Entrepreneurship) Rensselaer Polytechnic Institute (RPI), NY, USA
1984 PhD	(Physics of Magnetic Materials), London University, Imperial College, London, England
1978 MSc	(Physics) University of Basra, College of Science, Physics Dept., Basra, Iraq
1976 BSc	(Physics) University of Basra, College of Science, Physics Dept., Basra, Iraq

Engineering Positions

2006- 2014	Project Engineer, Aerospace Corp., Civil & Commercial Program, Pasadena, CA, USA
1997- 2005	Senior Technical Staff, NASA Jet Propulsion Laboratory, Caltech, Pasadena, CA, USA
1995- 1997	Manager, Materials Testing Laboratory, Biology Department, RPI, Troy, NY, USA
1993- 1995	Project Leader/ Principal Investigator, Intermagnetics General Corp, Latham, NY, USA
1989- 1992	Lead Project Engineer, Cryogenic Consultants Ltd, London, England

Faculty & Research Positions

2015-	Adjunct Professor, American University of Armenia (AUA), College of Bus. & Econ., College of Sci. & Eng. & Yerevan State University, School of Journalism, Armenia
2014-	Adjunct Professor, California State University of Los Angeles, Los Angeles, CA, USA
2006- 2008	Adjunct Faculty, Woodbury University, School of Architecture, Burbank, CA, USA
1995- 1997	Adjunct Faculty, Biology Dept., Rensselaer Polytechnic Institute (RPI), Troy, NY, USA
1992- 1993	Adjunct Faculty, Kensington University, School of Engineering, Glendale, CA, USA
1986- 1989	Post Doctoral Research Fellow, Leeds University, Physics Dept., Leeds, England
1984- 1986	Post Doctoral Research Scientist, in Hull University, Applied Physics Dept., Hull, and Birmingham University, Materials Research Center, Birmingham, England
1980- 1984	Research Graduate Student and Assistant Lecturer, London University, Imperial College, London, England
1978- 1979	Assistant Lecturer, University of Basra, College of Science, Physics Dept., Basra, Iraq

Research Interests

Creativity and Innovation
Cost and Schedule Estimation of Small Systems
CubeSats and Picosats Space Missions Design and Development
Magnetics & Superconductivity; Materials, Magnets, Devices, Cryogenic Systems, and Applications in Alternative Energy Generation and Harvesting

Awards and Honors

USA-

2014	The Aerospace IR&D Award for Concept Development of the 1 st Propulsive Picosatellite Operation and the ISS
2012	NASA Group Achievement Award for JUNO Space Mission Independent Technical Analysis
2011 & 2004	NASA Certificate of Appreciation for Valuable Contribution and Outstanding Support to the NASA Advanced Component Technologies (ACT) Program and the Earth Science Technology Office
2009- 2012	The Aerospace IR&D Award for the 1 st Picosatellite Cost Estimation Model Development
2009 & 2008	Aerospace SPOT Award for Contribution to JUNO Space Mission Success
2001	NASA Certificate of Recognition for New Technology Development on “Magnetic Thin-Film Application for Actuation of MEMS Fabricated Parabolic Mirror”

2000	NASA/ JPL NOVA Award for Technology Innovation on CloudSat Space Mission
1999	NASA Certificate of Recognition for New Technology Development of “Conductor Design to Generate Electricity from Space Magnetic Field”
1999 & 1998	JPL Directors R&D Award for Development of Innovative Concepts for Miniaturized Sensors and Actuators for Space Applications
1998	Two NASA Tech Brief Certificates of Recognitions for Creative Technical Innovations at NASA/JPL, Caltech
1995- 1997	Herman Family Fellowship for Women Entrepreneurs, Rensselaer Polytechnic Institute, Troy, NY
<u>England-</u>	
1981- 1984	Graduate Research Studentship from the Essefian Foundation, London
1984- 1986	UK Admiralty Defense Department Research Grant for Developing High Magnetostrictive Materials
<u>Iraq-</u>	
1978	University President Award with Honor for being the 1 st Graduate Student with Masters' Degree in Physics from Basra University, Basra
1977- 1978	Graduate Research Studentship, Basra University, College of Science, Basra

Teaching, Mentoring, and Proposals Reviews

- Create and teach undergraduate level courses on “Creativity and Technological Innovation” and “Physics and Creativity”. Teach Innovation & Entrepreneurship, Systems Engineering & Cost Estimation, Physics, and Material Science to undergraduates, and Management of Information Resources to MBA students. Served review board member for several PhD theses
- Proposal manager for several “NASA Space Missions Development” teams
- Worked with NY State Technology Investment Fund BoD; reviewed and evaluated Business Plans for high technology start-up companies, interviewed more than 40 entrepreneurs
- Reviewer and evaluator for several Air Force and NASA SBIR and STTR technology innovation proposals
- NASA Discovery (Earth, Mars and Planetary) proposals reviewer and evaluator for technology innovation and cost and schedule estimation. Participated and presented in NASA Science and Technology review panels

Professional Affiliations

2012-	Member, IEEE Society, Magnetics and Electromagnetic Group, EMI/ EMC Group
2008-	Member, International CubeSats Working Group
2008- 2012	Member, International Cost Estimating and Analysis Association (ICEAA)
1999-	Member, American Physics Society (APS)
1993-	Member, Materials research Society (MRS)

Personal Data

Citizenship:	Dual (USA and Britain (UK))
Languages:	Armenian, English, Arabic (read, write and speak)
Hobbies:	Join "Think Tank" Innovative Thinkers' Groups, and Charitable Organizations

- Founder & owner of "Mary & Associates" a small business consulting firm operating in LA, USA
- Past member of SCORE "Counselors to America's Small Business" Glendale Branch, a non-profit organization dedicated to helping small business owners and entrepreneurs
- Board Member and past Secretary of ARPA (Analysis Research & Planning for Armenia) Institute
- Co-founder of "Vedi's Friends", Los Angeles based non-profit organization supporting the city of Vedi in Armenia
- Past Board Member for local Armenian Apostolic Church of La Crescenta Valley, CA (USA)

Publications

Refereed Papers and Conference Presentations

1. Boghosian M.H. Sanchez C., B. Oscar, Kocharian A., and Gredig T., APS'15, (2-6) March (2015), San Antonio, TX, "Terbium Aluminum (TbAl₂) Binary Alloy as High Magnetostrictive Material"
2. Boghosian M.H. and Robinson E.Y., ISSC 2014- Interplanetary Small Satellite Conference, (28-29) April (2014), Pasadena, CA, "*Optional Picosat Constellation Architectures*"
3. Robinson E.Y., Boghosian M.H., and McLeroy J.C., 3rd Ann. ISS R&D Conference, (17-19) June (2014), Chicago, IL, "*Picosat Constellation Architectures and ISS*"
4. Boghosian M.H. and Narvaez P., 28th Aerospace Testing Seminar, (25-27) March (2014), Los Angeles, CA, Tutorial on "*Magnetic Testing, and Modeling, Simulation and Analysis for Space Applications*"
5. Boghosian M.H. and Narvaez P., 2013 IEEE International Symposium on Electromagnetic Compatibility, (5-9) Aug (2013), Denver CO, "*Magnetic Testing, and Modeling, Simulation and Analysis for Space Applications*"
6. Boghosian M.H. and Narvaez P., 2013 IEEE International Symposium on EMC- Experiments and Demonstrations, (5-9) Aug (2013), Denver CO, "*Minimizing Magnetic Field Susceptibility*"
7. Boghosian M.H., Narvaez P. and Herman R., 27th Aerospace Testing Seminar, (16-18) Oct (2012), Los Angeles, CA, "*Magnetic Testing, and Modeling, Simulation and Analysis for Space Applications*"
8. Boghosian M.H., 1st Interplanetary CubeSat Workshop, (29-30) May (2012), Cambridge, Mass., USA, "*Cost Estimating Methodology for Very Small Satellites*"
9. Boghosian M.H., and Valerdi, R., 26th International Forum on COCOMO and Systems/Software Modeling, University of Southern California (USC), (2-4) Nov (2011), Los Angeles CA, "*Cost Estimating Methodology for Very Small Satellites*"
10. Boghosian M.H., and Valerdi, R., JPL 1st Cubesat/SmallSat Technology Interchange, (7-8) Sept (2011), Jet Propulsion Laboratory, Pasadena CA, "*Cost Estimating Methodology for Very Small Satellites*"
11. Boghosian M.H., and Valerdi, R., 9th CubeSat Development Summer Workshop, Utah State University, (6-7) Aug (2011), Logan, Utah, "*Cost Estimating Methodology for Very Small Satellites*"
12. Boghosian M.H., Technology Roadmapping Summit, Washington DC, 10 Jan (2006), "*Technology Roadmapping at NASA/JPL*"
13. Dickens F. and Boghosian M.H., SPIE: Astronomical Telescopes and Instrumentation, Hawaii, (22-23) Aug (2002), "*LISA Pointing Sensor Development Stand*"
14. Dickens F. and Boghosian M.H., LISA Workshop II, Pasadena, (28-31) May (2002), "*LISA Pointing Sensor Development Stand: First Data*"
15. Boghosian M.H., Complex Medium II: Beyond Linear Isotropic Dielectric, SPIE 46th Annual Meeting, San Diego, 7/30-8/1 (2001), "*Complex Medium and Space Applications (Unscheduled)*"
16. Boghosian M.H., Meta-Materials Workshop, SN00-26. The Defense Sciences Office of the Defense Advanced Research Project Agency (DARPA) workshop on development and demonstration of "meta-materials", 29 Sept (2000), "*Magnetolectric Materials for Sensing and Energy harvesting*"

17. Boghosian M.H., Ghaffarian R., Ramesham R., Mih D., Redding C., Smith F., Willis B., Forsgren R., and Wilson W., IDEAS Microsystems Partnering Forum, 17-18, Nov (1999), "*NEPP COTS MEMS Program*"
18. Boghosian H. A., Ciacetta G.M., Bascunan J., Rutman G., Devernoe A.L., Painter T., Miller J., Summers L., and Bonito-Oliva A., IEEE Trans. on Mag. 30, 4, 2466 (1994), "*Dummy Coil Development for the Cable-in-Conduit Nb₃Sn 'Outsert' Coils of the 45T Hybrid Magnet*"
19. Painter T., Miller J., Summers L., Bonito-Oliva A., Devernoe L.A., Ciacetta G.M., King M.J., Bascunan J., Rutman G., Schaedler R.M., Boghosian H., Shapiro A., IEEE Trans. on Mag. 30, 4, 2204 (1994), "*Progress in the Manufacture of the Cable-in-Conduit Nb₃Sn Outsert Coils for the 45Tesla Hybrid Magnet*"
20. Boghosian H.A. & Howson M.A., Phys. Rev (B) 41, 7397 (1990), "*The Temperature Dependence of the Electrical Conductivity of Amorphous V-Si*"
21. Boghosian H., Stevens R. & Howson M.A., UK Informal Conf. on Rap. Sol. & Metastable Phases, Selwyn College, Cambridge, (UK), 14-15 April (1988), "*Structural Analyses on V-Si Thin Films Prepared by Sputtering*"
22. Lowe A.J., Greig D., Howson M.A., Walker M.J., Boghosian H.A., Stevens R., Chen Y.L., Law D.S., Norman D., Quinn F.M. & Matthew J.D., Jour. Phys. C.: Solid State Phys. 21, P.L. 763 (1988), "*A Photo-emission Comparison of Superconducting and Semiconducting YBa₂Cu₃O_x*"
23. Lowe A.J., Boghosian H.A., Croxon A.A., Greig D., Howson M.A., Walker M.S. & Norman D., Ann. Rep. Daresbury Lab. (UK) (1988), "*Photo-emission Studies of the New Ceramic Superconductors*"
24. Boghosian H., Greenough R.D., Butler D. & Abell S., Int. Symp. Phys. of Mag. Mat. Sendai (JAPAN), 8-11 April (1987), "*The Magnetization and Magnetostriction Behavior of New rare-Earth Transition Metal Alloys*"
25. Boghosian H., Ann. Meet. Rare Earth and Actinide, Univ. of Birmingham, Mat. Res. Center, (UK), 25-27 March (1987), "*The Magnetization and Magnetostriction Behavior of New Rare-Earth - Transition Metal Alloys*"
26. Boghosian H., Inst. Phys. Soc., Sol. Stat. Phys. Conf., Univ. of Reading, (UK), 18-20 Dec (1985), "*Magnetic Phase Diagram in Pr-Nd Alloys*"
27. Boghosian H.A. & Coles B.R., Int. Conf. Mag. Mat. Los Angeles, (USA), 27-29 Aug (1985), "*Magnetic Phase Diagram in Pr-Nd Alloys System*"
28. Boghosian H.A., Inst. Phys. Soc., Sol. Stat. Phys. Conf., Univ. of Southampton, (UK), 18-20 Aug (1984), "*Magnetic Phase Transitions in Pr-Nd Alloys*"
29. Boghosian H.A., Coles B.R. & Fort D., Ann. Meeting of Rare-Earth and Actinide, Univ. of Birmingham, Material Research Center, (UK), 27-29 March (1984), "*Magnetic Phase Diagram in Pr-Nd Alloys System*"
30. Boghosian H.A. & Coles B.R., Inst. Phys. Soc., Sol. Stat. Conf., Univ. of London, Bedford College, (UK), 18-20 Dec (1982), "*Magnetic Phase Transitions in Pr-Nd Alloys System*"
31. Boghosian H.A. & Coles B.R., Phil. Mag. (B) 52, 3, 579 (1985), "*A Preliminary Study of Magnetic Phase Transitions in Praseodymium-Neodymium Alloys*"
32. Boghosian H.A., Coles B.R. & Fort D., Jour. of Phys. F: Met. Phys. 15, 953 (1985), "*The Temperature Dependence of Magnetic Field-Induced Transitions in the Magnetization of Neodymium Single Crystal*"
33. Boghosian H.A. & Coles B.R., Jour. of Mag. Mat. 29, 213 (1982), "*A.C. Susceptibility and Electrical Resistivity of Neodymium Single Crystals*"

34. Boghosian H.A., Sarkissian B.V.B. & Coles B.R., Inst. Phys. Conf. Ser. No. 55, Chapter 4, 303 (1980), "*Studies of the Concentration and Field Dependence of the Critical Behavior in Cu-Ni Alloys*"
35. Boghosian H.A. & Dubey K.S., Jour. Therm. Anal. 15, 207 (1979), "*Nonlinear Analysis of Heat Transfer in an Insulator: Application to NaBr*"
36. Boghosian H.A. & Dubey K.S., Phys. Stat. Sol. (B) 96, K107 (1979), "*Phonon Conductivity Correction Term and Electron-Phonon Scattering Relaxation Rate: Application to Doped and Undoped Germanium*"
37. Boghosian H.A., Samuel S., Misho R.H. & Dubey K.S., Ind. Jour. of Pure and Appl. Phys. 17, 1, 41 (1979), "*Effect of Point-Defects on Lattice Thermal Conductivity at Low Temperatures*"
38. Boghosian H.A., MSc Thesis, University of Basra Press (Iraq) (1978), "*The Lattice Thermal Conductivity of Doped Semiconductors and Insulators*"
39. Boghosian H.A. & Dubey K.S., Sol. Stat. Commn. 27, 1065 (1978), "*Peripheral Phonons and Phonon Conductivity of the Doped Semiconductors*"
40. Boghosian H.A. & Dubey K.S., Phys. Stat. Sol. (B) 85, K99 (1978), "*Heat Transfer in a Lattice at Low Temperatures: Application to a Doped sample of Al₂O₃*"
41. Boghosian H.A. & Dubey K.S., Phys. Stat. Sol. (B) 89, K65 (1978), "*Heat Transfer in Doped Al₂O₃ at Low Temperatures*"
42. Boghosian H.A. & Dubey K.S., Phys. Stat. Sol. (B) 88, 417 (1978), "*Role of Electron-Phonon Interaction and Peripheral Phonons in the Lattice Thermal Conductivity of Doped Semiconductors at Low Temperatures: Application to Phosphorous-Doped Germanium*"

New Technology Reports- Patent Applications

1. Magnetic Thin-Film Application for Actuation of MEMS Fabricated Parabolic Mirror, NASA Tech Brief, 25, 10, 31, (2001)
2. Magneto-electric Sensors and Electric Current Generators, NASA Tech Briefs, 24, 5, 42 (2000)

Internal Reports (IR)s

1. Boghosian M.H., AEROSPACE TECHNICAL REPORT NO- ATR-2013 (9364)-1 "*Cost Estimating Methodology for Very Small Satellites- A-PICOMO (Aerospace Picosatellite Cost Model)*"
2. Boghosian M.H., September 2005, "*Industry Practices in Technology Planning and Management*" Solar Systems Exploration Program
3. Boghosian M.H., March 2002, "*Carbon Sizing of Charcoal Filter used at Low Temperature*" Plank flight project
4. Boghosian M.H., March 2002, "*Sizing of Hydrated Carbon Required for Cold Trap Filter for H₂ Gas Purification*" Plank flight project
5. Boghosian M.H., March 2002, "*Fabrication and Qualification Test Plan for Charcoal Filters using MI and GI Materials*" Plank flight project
6. Boghosian M.H., April 2002, "*Experiments on Soldering and Brazing Joints between Copper Block and Stainless Steel Tube*" Plank flight project
7. Boghosian M.H., April 2002, "*Qualification Test Plan for Weld Integrity of Charcoal Filter (F8)*" Plank flight project

8. Boghosian M.H., April 2002, "*Sizing Criteria for Charcoal Filters Attached to 50K Pre-coolers using MI and GI Materials from Barnaby-Sutcliff*" Plank flight project
9. Boghosian M.H., July 2001, "*Permanent Magnet Thermal Environment Test Procedure*" Cloudsat flight project
10. Boghosian M.H., Aug 2001, "*Final Report on QOTL Permanent Magnet Design and Test procedure*" Cloudsat flight project
11. Boghosian M.H. and Topper M., June 2001, "*240GHz Mixer/PLLO Burn-in Test*" MLS flight project
12. Boghosian M.H. and Topper M., May 2001, "*240GHz Mixer lock Thermal Atmosphere, Vibration, and Thermal Cycle Test Procedure*" MLS flight project
13. Boghosian M.H., Sept 2001, "*Application of Bio-Nano-Info in future missions*" Strategic Technologies Program Study