EAB MEMBERS

Elias Anagnostou

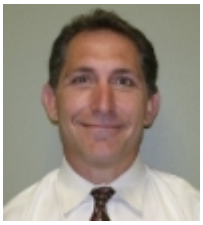
Dr. Elias L. Anagnostou is an associate technical fellow in the Technology Development group of the Integrated Systems Advanced Concepts & Integrated Solutions Sector of the Northrop Grumman Corporation. For the past 25 years he has worked on aerospace research and development projects in the area of structural and computational mechanics. Elias is currently the technical lead in the modeling and simulation thrust area of the Defense Advanced Research Projects Agency (DARPA)-sponsored Structural Integrity Prognosis System (SIPS) project. He manages and directs research and development activities across eight universities and small companies to develop and demonstrate a multi-scale microstructurally-physics-based fatigue model to predict the state of structural health of individual Department of Defense (DoD) aerospace vehicles. He participated in the acquisition of the DARPA/SIPS Phase I & II programs and is currently working with DARPA, Naval Air Systems Command (NAVAIR) and the U.S. Air force (USAF) to develop a SIPS Phase III transition program. He is the author/coauthor of 11 papers and has presented SIPS research activities to NAVAIR, USAF and Office of Naval research (ONR) and presents overall modeling and simulation thrust area technical accomplishments at DARPA/SIPS quarterly program reviews. From 1996 to 2006 he has received eight Northrop Grumman awards for outstanding accomplishments. In 2007 he was a recipient of the Long Island Software Award (LISA) for innovative application of software to a critical defense requirement. Elias received a bachelor's degree in Aerospace Engineering from Embry-Riddle Aeronautical University, a master's degree in Civil Engineering from Columbia University and a doctorate degree in Mechanical Engineering from SUNY Stony Brook.

Gregory Basso

Gregory Basso '68E is currently President of Cascade Group, a small engineering firm specializing in PC based environmental and security monitoring, control and networking. He is a member of the Board of Managers of the Columbia Engineering Alumni Association and has previously served as Secretary and then as President from 1994 to 1996. Past experience includes teaching math and physics, electrical engineering work on the Lunar Module and Space Shuttle and computer control for the EA6B radar jamming and countermeasures aircraft. He is a recipient of the Crossed Hammers Award and the University Alumni Federation Medal for alumni service.

Nicolas W. Chbat

Dr. Nicolas W. Chbat is a senior staff researcher at Philips Research North America. He leads the effort in clinical decision support in cardiovascular medicine. Prior to joining Philips Research in June 2005, Dr. Chbat spent four years at the Mayo Clinic as a principal engineer in the Division of Engineering and an assistant professor of Biomedical Engineering at the Mayo Graduate School. He has worked with a number of clinical and research groups to improve patient care. His applied research work on physiological control systems lead to designing state-of-the-art medical equipment and intelligent diagnostic algorithms. In 2005, he won the Best Teacher of the Year Award from the Mayo Graduate School. Prior to Mayo Clinic, Dr. Chbat has worked for General Electric Global Research Center (GE GRC) for six years. During that time he developed algorithms for modeling, controls, and monitoring applications for several GE businesses (Aircraft Engines, Transportation, Appliances, Plastics, Power System, and Lockheed Martin). Many of his projects have led to market introductions. He has won two grants from the Department of Energy and the U.S. Navy. In 2000, he won the Dushman Award, GE GRC's Highest Technical Team Achievement Award. Dr. Chbat received his Ph.D. in Mechanical Engineering specializing in feedback control systems at Columbia University in 1995, and has a Bachelor's in Mechanical Engineering with a minor in Computer Science from Manhattan College, New York. Dr. Chbat holds 11 patents and four invention disclosures. He authored the book Discrete-Time Control Problems Using MATLAB, a chapter in the book Advances in Healthcare Technology – Shaping the Future of Medical Care, as well as 18 publications. In 2005, he won the Best of Section Award at the International Anesthesiology Research Society conference. Most recently, in Fall 2006, Dr. Chbat was appointed Adjunct Associate Professor in the Biomedical Engineering Dept. at Columbia University, where he has introduced the course Physiological Control Systems.



Darcy Hunter

Darcy Hunter is Vice President of Sales & Service, The Americas of Instron Corporation. He has responsibility for all sales and service areas of Instron's Materials Testing business (IMT). Since joining Instron in 1984 as a Sales Engineer Trainee, Mr. Hunter has held positions of increasing responsibility including Sales Engineer, District Sales Manager, Regional Sales Manager and Vice President of the IMT Electromechanical Products division. He was promoted to his current position in September 2003. Mr. Hunter holds a bachelor's degree in Physics from the University of the South in Sewanee, Tennessee and a bachelor's degree in Mechanical Engineering from Columbia University in New York.

Michael Idelchik

In his role as vice president of Advanced Technology at GE Global Research, which he undertook in 2004, Michael oversees the company's longest range, highest impact research endeavors. With major programs in molecular imaging and diagnostics, nanotechnology, pulse detonation propulsion, sustainable energy, organic electronics and energy conversion, the Advanced Technology office represents the most significant investments in emerging technologies. Prior to assuming this role, Michael served as the managing director of GE's China Technology Center since its inception in 2002. In this role, he founded and built GE's first integrated technology center in China. Michael joined GE as an engineer at Aircraft Engines in 1978. He progressed through a number of engineering positions with increasing responsibilities and in 1991 Michael received the Aircraft Engines 'Engineer of the Year' award. In 1994 Michael joined GE Medical Systems as a Global X-ray Tube Engineering Manager. In 1998 Michael was named General Manager Global Components Engineering at GE Medical Systems, where he led the successful introduction of a LightSpeed Detector for the world's first multi slice CT scanner and delivery of the first 41 cm digital X-ray Detectors for clinical evaluations. Michael was named GE Vice President and General Manager of Global Technology for GE Lighting in 1999. There he led the revitalization of the product portfolio with customer focused innovation and Six Sigma quality. Michael also led GE Lighting's entry into Technical Lighting markets with Video Projection, Light Emitting Diodes, and Electronics /Ballast products. Michael received a B.S. degree in Mechanical Engineering from Columbia University and a Master's degree from the Massachusetts Institute of Technology. Michael holds 12 patents.

William D. Kennedy

William (Bill) Kennedy has been a tunnel ventilation and fire-life safety engineer with Parsons Brinckerhoff (PB) for 38 years. His education includes BSME Union College 1969; MSME Columbia University 1972 and Engineer Degree Columbia University 1979. He is a Vice President and Principal Professional Associate at PB and is a registered professional engineer in New York and Texas. He has worked on the development of the Subway Environment Simulation (SES) computer program since its inception, specializing in the aerodynamics and fire models. He developed special applications of the SES including air curtains, Saccardo nozzles, platform screen doors, etc. He was the project engineer for the planning of the Memorial Tunnel Fire ventilation tests and participated in the commissioning of the test facility. He is presently in charge of SES 2000 (SI Units, animation, etc.), provides guidance to PB New York's CFD group and implemented the emergency

evacuation program, SIMULEX, at PB. He has worked on about 30 transit, 20 road and 5 mainline rail tunnel projects from Buffalo to Caracas to London to Cairo to Istanbul to Delhi to Singapore to Hong Kong to New York. He is a member of the American Society of Heating, Refrigerating and Air Conditioning Engineers and was chair of its Technical Committee 5.9, "Enclosed Vehicular Facilities" 1993-1996. He is a member of the National Fire Protection Association and is chair of its committee for Standard 130, "Fixed Guideway Transit and Passenger Rail Systems". He is Chair of the American Public Transportation Association's Ventilation Forum. He has published 30 papers in the proceedings of APTA, ASHRAE, BHRG, TMI, etc. His hobbies include family genealogy, reading, aircraft and history.

Hie Jae Kim

Hie Jae Kim received a B.A. from Hankuk University of Foreign Studies in Seoul in 1969 and a B.S. in mechanical engineering from Columbia University in 1977. He is a vice president of Syska Hennessy Group (SHG), one of the largest international consulting firms and is senior-level engineering professional with the Syska Hennessy Group, and has been with the firm for over 20 years. His more than 30 years of professional experience has been focused on building systems design and specifically HVAC design, and he has served as Project Manager, Quality Assurance Officer, and Supervising Engineer on past projects, designing mechanical systems for major projects throughout all market sectors. Mr. Kim also supervises technical staffs in the eastern regional office, as well as traveling all over the world setting up engineering consulting deals. He is licensed in seven states (New York, Wisconsin, Massachusetts, Ohio, Rhode Island and Georgia), and a member of American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and American Society of Mechanical Engineers (ASME). He is a member of the SEAS Board of Visitors (BOV).

Anna K. Longobardo

Anna Kazanjian Longobardo was the first woman graduate of Columbia’s Mechanical Engineering Department and the only woman to win the Alumni Association’s Egleston Medal for Distinguished Engineering Achievement. As an engineering executive at Unisys Corp., she headed a world-wide organization supporting complex military and weather radar systems in more than 100 locations until her retirement in 1995. She was the first woman to lead the Columbia Engineering School Alumni Association, the University Alumni Federation (for two terms), the Society of Columbia Graduates, and the Engineering Council, serving as chair for two terms. She also served as a University Alumni Trustee and is now Trustee Emerita. “Certainly, the opportunity to attend a

highly-rated engineering program was valued by this young New York teenager. To have my professors tell us that we were being prepared for leadership roles in this country's biggest and most important industries was absolutely mind-expanding for this teenage GIRL, and I chose to believe and live it from the very first day and for 45 years. To study on a campus where we could hear Meyer Schapiro lecture on Picasso's Guernica, take Irwin Edman's Logic course, hear Margaret Mead among many others, was incredible. Thank you, Columbia Engineering."

Peter A. Luccarelli, Jr.

Peter A. Luccarelli, Jr. is of counsel to the intellectual property law firm of Michaelson & Associates, Shrewsbury, New Jersey, specializing in the identification and protection of patents, trademarks, trade secrets/know-how and copyrights, as well as related licensing and risk management issues. He also contributes IP law expertise to multi-disciplinary corporate transactional teams for technology deal making, acquisitions, divestitures, IP asset management, IP valuation and dispute resolution. Mr. Luccarelli served as Associate Chief Intellectual Property Counsel at Siemens Corporation until October 2008, responsible for Industry Group clients. Before Mr. Luccarelli joined the Intellectual Property Department at Siemens Corporation in 1990, he worked at Pennie & Edmonds in NYC, Wender, Murase & White in Washington, DC, and Cooper & Dunham in NYC. Mr. Luccarelli received his B.S. in Mechanical Engineering at Columbia University in 1978 and received his J.D. from Fordham University School of Law in 1981. During his law school years, he served as a law clerk at Brooks, Haidt, Haffner & Delahunty, and Arthur Young & Company, both in NYC. He also interned for the U.S. Attorney for the Southern District of NY. He has many bar admissions including New York State and the U.S. Patent and Trademark Office.

Michael T. McGough

Michael McGough, P.E., is Vice President of Laszlo Bodak Engineer, PC. He started working in the construction industry as a maintenance mechanic working summers through high school and college. He attended Columbia University where he earned his Bachelor of Science in Mechanical Engineering. He has worked at Newport News Shipbuilding, LK Consulting Engineers and joined Laszlo Bodak Engineer, PC in 1988 and was the firm's first Associate. He is the Managing Director of LBE International, Ltd., based in Budapest Hungary, and has actively completed international projects since 1993. In addition to practicing as an engineer, he has been an Adjunct Professor at Parsons School of Design in the Masters of Architecture Program, teaching an Environmental Technology course since 2002. Michael has been a presenter at several Green Building symposiums and a participant

in several round table discussions regarding the current market direction of sustainable design, including being a Presentation Speaker at the GreenBuild International Conference and Expo in Pittsburgh, PA in 2003 and has given many lectures regarding the firms work including ASHRAE and AIA sponsored events.

Mark Powasnik

Mark Powasnik ‘85E is currently Senior Vice President/Director of Technical Services and Mechanical Department Head at Flack & Kurtz, a consulting engineering firm. Mark has worked on the design of multiple project types throughout the United States and abroad. The types of projects Mark has worked on are Broadcast facilities, Data Centers, Cogeneration plants, district heating and cooling plants, Hospitals, Transportation, Corporate, Commercial, and Retail spaces. Mark has also worked and lived in London for approximately six years and also has worked and lived in Malaysia for approximately 4 years. In Malaysia, Mark worked on the Petronas Twin Tower project in Kuala Lumpur. Mark is a licensed Professional Engineer in New York State since 1989 and a LEED accredited professional.

Albert P. Pisano

Albert (“Al”) P. Pisano is a Director of the Berkeley Sensor & Actuator Center (BSAC) and currently serves as Professor and Chair of the Department of Mechanical Engineering at the University of California at Berkeley, having been appointed Chair in July 2004. He joined the University of California in 1983. He was elected to the National Academy of Engineering in 2001. At UCB, Professor Pisano holds the FANUC Chair of Mechanical Systems in the Department of Mechanical Engineering, with a joint appointment to the Department of Electrical Engineering and Computer Science. He has previously served as Director of the Electronics Research Laboratory, the largest organized research unit on the UC Berkeley campus (with over $73 million in research funds each year). Professor Pisano received his B.S. (1976), M.S. (1977) and Ph.D. (1981) degrees from Columbia University in the City of New York in Mechanical Engineering. Prior to joining the faculty at UC Berkeley, he held research positions with Xerox Palo Alto Research Center, Singer Sewing Machines Corporate R&D Center, and General Motors Research Labs. From 1997-1999, he served as Program Manager for the MEMS program at the Defense Advanced Research Projects Agency (DARPA) in Arlington, VA, where he expanded the MEMS research portfolio to 83 contracts awarded nationwide with a total MEMS research expenditure in excess of $163 million distributed over 3 fiscal years. His research interests and activities at UC Berkeley include MEMS for a wide variety of applications, including RF components, power generation, drug delivery, strain sensors, biosensors and disk-drive actuators. Professor

Pisano is the co-inventor listed on 20 patents in MEMS and has authored or co-authored more than 190 archival publications. Since 1983 he has graduated 33 Ph.D. and 64 MS students. He is a founder in five start-up companies in the area of transdermal drug delivery, transvascular drug delivery, sensorized catheters, MEMS manufacturing equipment and MEMS RF devices.

Hitoshi Tanaka

Dr. Tanaka was born in New York City but was raised in Japan. He returned to the US at the age of 16. After graduating from the Bronx High School of Science, he attended Columbia University where he earned his BS, MS and Doctor of Engineering Science in Mechanical Engineering. He is a member of the American Society of Mechanical Engineers, Sigma Xi Science Honor Society and Columbia Club of Northern New Jersey. He is also an active member of the Alumni Representative Committee of Northern New Jersey and represents Columbia at high school college nights and interviews applicants for admission to the school. He started his career as a research engineer at Singer Company where he worked for ten years. Subsequently he joined Designatronics, Inc. where he is currently the Corporate Senior Vice President and the President of three of its divisions. The company through its divisions and subsidiaries manufactures and distributes myriad of mechanical and electromechanical components which are used by the defense industry, medical devices and many other OEM customers. In his spare time, he enjoys woodturning, sailing and carpentry. He is a member of the Hunterdon Sailing Club, New Jersey Woodturners Club and American Association of Woodturners. Some of his creations can be seen on the Members Gallery section of the web site www.njwoodturners.com.

Russell H. Taylor

Russell H. Taylor received a B.E.S. degree from The Johns Hopkins University in 1970 and a Ph.D. in Computer Science from Stanford in 1976. He joined IBM Research in 1976, where he developed the AML robot language. Following a two-year assignment in Boca Raton, he managed robotics and automation technology research activities at IBM Research from 1982 until returning to full time technical work in late 1988. From March 1990 to September 1995, he was manager of Computer Assisted Surgery. In September 1995, Dr. Taylor moved to Johns Hopkins University as a Professor of Computer Science, with joint appointments in Radiology, Surgery and Mechanical Engineering He is also Director of the NSF Engineering Research Center for Computer-Integrated Surgical Systems and Technology. Dr. Taylor has a long history of research in computer-integrated surgery and related fields. In

1988-9, he led the team that developed the first prototype for the ROBODOC© system for robotic hip replacement surgery and is currently on the Scientific Advisory Board of Integrated Surgical Systems. At IBM he subsequently developed novel systems for computer-assisted craniofacial surgery and robotically-augmented endoscopic surgery. At Johns Hopkins, he has worked on all aspects of CIS systems, including modeling, registration, and robotics in areas including percutaneous local therapy, microsurgery, and computer-assisted bone cancer surgery. He is Editor Emeritus of the IEEE Transactions on Robotics and Automation, a Fellow of the IEEE and the AIMBE, and a member of various honorary societies, panels, editorial boards, and program committees. In February, 2000 he received the Maurice Müller award for excellence in computer-assisted orthopaedic surgery.

Glenn G. Wattley

Mr. Wattley is the managing director of WestBayEnergy, LLC offering business strategy and private investment placement services for innovative and breakthrough technologies/projects. He has spent over 30 years in industry; he has a diverse client base including Fortune 500 companies, utilities (gas and electric), energy producers (coal, oil and gas), and high-growth technology startups. Mr. Wattley began his career as a maintenance engineer with Consol Energy, the leading US underground producer of coal. He was also employed as a product line manager for Mine Safety Appliances Company, marketing mechanical and chemical safety systems. He spent 14 years with Arthur D. Little, Inc., as Vice President of the corporate utilities and mining practices. He was also a Strategic Services partner at Andersen Consulting (now Accenture). Throughout his career, Mr. Wattley has spoken at numerous trade conferences as a keynote speaker addressing industry trends and investment opportunities in clean-coal technologies, distributed generation, IT strategy, eCommerce, etc. He has written articles for trade journals, and has been quoted as an industry expert in various publications (e.g., The Economist, Fortune), and the Special Energy Section of the New York Times. He has appeared on CNBC cable TV and The Wall Street Journal Report aired on NBC TV. Mr. Wattley holds a B.S. in Engineering from Columbia University, and an M.B.A. from Harvard Business School.

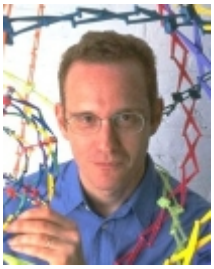
Y. Lawrence Yao

Y. Lawrence Yao is Professor and Chair of the Department of Mechanical Engineering at Columbia University, where he also serves as Director of Manufacturing Research Laboratory (MRL). He and his coworkers conduct research in advanced manufacturing technology and laser materials processing in particular. They have published over 150 technical papers and have five patents to their credit. They have received multimillion dollar research awards from NSF, NIST, NIH and industry. They have received many awards including three best paper awards and the prestigious Blackall Machine Tools and Gauge Award from ASME. He currently serves on the Board of Directors, Laser Institute of America, and on the Board of Directors, North American Manufacturing Research Institute of SME, and on the Executive Committee of Manufacturing Engineering Division of ASME. He also serves on the editorial boards of several leading journals including an associate editorship of ASME Transactions Journal of Manufacturing Science and Engineering. He received his Ph.D. in Mechanical Engineering from the University of Wisconsin-Madison in 1988.

EAB EMERITUS MEMBERS

Harry Armen

Dr. Harry Armen, Chief Technologist for the Airborne Early Warning and Electronic Warfare Business Area within the Integrated Systems Sector of the Northrop Grumman Corporation, has a bachelor's degree in Civil Engineering from The Cooper Union. He also has a master's degree in Civil Engineering and a doctorate in Engineering Sciences from New York University. Upon completion of his doctoral studies, he joined Northrop Grumman Corporation and has held both supervisory and staff positions at that company for the past thirty-nine years. He is the author/coauthor of more than 40 archival papers and technical reports on the following topics: computational mechanics, fatigue and fracture mechanics, crashworthiness evaluation, and the analysis and design of composite structures. In addition, he holds two U.S. patents in automotive engineering. Dr. Armen is a Fellow of the American Society of Mechanical Engineers (ASME). In 1991, he was selected by ASME to participate in their Congressional Fellows Program. He has served as ASME Vice-president and Chairman of its Board on Government Relations, as Senior Vice-president of the ASME's Council on Public Affairs, and as a member of ASME's Board of Governors. He concluded his service as ASME's 123rd President in June, 2005, and served as a member of the Board of Governors until June, 2006. He has held the position of Adjunct Professor of Civil Engineering and Applied Mechanics at The Cooper Union and as Lecturer in Engineering Mechanics at Hofstra University. He has served as member and Chair of the Advisory Committee for the Engineering Directorate of the National Science Foundation, 1996 - 2002. He is a licensed Professional Engineer in the State of New York.



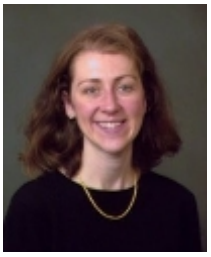
Chuck Hoberman

Nowhere do the disciplines of art, architecture and engineering fuse as seamlessly as in the work of inventor Chuck Hoberman who is well known internationally for his Transformable Structures. Through his products, patents and structures, Chuck Hoberman has demonstrated how objects can be foldable, retractable or shape-shifting. Such capabilities lead to functional benefits: portability, instantaneous opening and intelligent responsiveness within the built environment. Hoberman's work ranges from medical instruments to emergency shelters, transformable buildings, and portable theaters. He is well-known to children around the world through his award-winning toys. Examples of his commissioned work include the Hoberman Arch in Salt Lake City, Utah, installed as the centerpiece for the 2002 Winter Olympic Games. Other noteworthy commissions include a retractable dome for the Worlds

Fair in Hanover, Germany, the Expanding Hypar (1997) at the California Museum of Science and Industry, and the Expanding Sphere (1992) at the Liberty Science Center, Jersey City. He has exhibited at the Museum of Modern Art, which featured his Iris Dome, and at Centre Georges Pompidou, Paris as part of the exhibit titled The Art of the Engineer. Hoberman's work has been featured in publications such as Discover Magazine, The New York Times, The Wall Street Journal, The New Yorker, Architecture Magazine and Wired. Broadcasts about Unfolding Structures have been shown on "Today", "Nightline", CNN News, "Beyond 2000", "Invention" on The Discovery Channel, "Tomorrow's World" on the BBC and "Dateline NBC". Chuck received a MS degree in Mechanical Engineering from Columbia University in 1985 and currently serves as CEO of Hoberman Design, Inc in New York City.

Frederick F. Ling

Frederick F. Ling is the Earnest F. Gloyna Regents Chair Emeritus in Engineering, the University of Texas at Austin as well as Distinguished William Howard Hart Professor Emeritus, Rensselaer Polytechnic Institute. Since 1957, he has been principal investigator of projects sponsored by the Air Force Office of Scientific Research, the Office of Aerospace Research, the Air Force Materials Laboratory, the National Aeronautics and Space Administration, the Office of Naval Research, the Army Research Office, the Department of Transportation, the Department of Energy, the National Science Foundation, the New York State Science and Technology Foundation, AT&T Foundation, and such firms as General Motors Corporation, Ford Motor Company, General Electric Company, E.I. du Pont de Nemours Company, International Business Machines Corporation, Digital Equipment Corporation, and Baxter Healthcare Corporation. A member of the inaugural Board of Governors of ASME (1981-1983), he has chaired many government panels and committees. He served on the Advisory Committee of what was the Division of Design, Manufacture and Industrial Innovation, National Science Foundation (Chair, 1990, 1991, 1992), the National Research Council's Committee to Asses the U. S. -Japan Industry and Technology Management Training Programs (Chair, 1992), and the National Science Foundation Nanoscale Facility Working Group (Co-Chair, 2001). He is Editor–in-Chief of the Springer Mechanical Engineering Series. Professor Ling received a D.Sc. in mechanical engineering from Carnegie Mellon University and is a member of the National Academy of Engineering.



Pamela A. Sargent

Pamela Sargent is a Director and Senior Executive at Accenture, a global management consulting and technology services company. Since joining Accenture in 1990, she has served as program and project manager for numerous high-visibility initiatives involving system implementations, new technology platforms, extensive process redesign, and change management. She planned, estimated, and led large-scale Enterprise Resource Planning (ERP) implementations and upgrades. She managed strategy projects analyzing administrative functions including Finance, Information Technology, Student Services, Human Resources, and Facilities Operations and their integration. She defined the service delivery models and designed customer contact centers to streamline and improve customer service. She currently serves as project director for several government and higher education projects in the metro NYC area. Ms. Sargent holds a Bachelor degree in Electrical Engineering, magna cum laude, from the University of Dayton, OH.