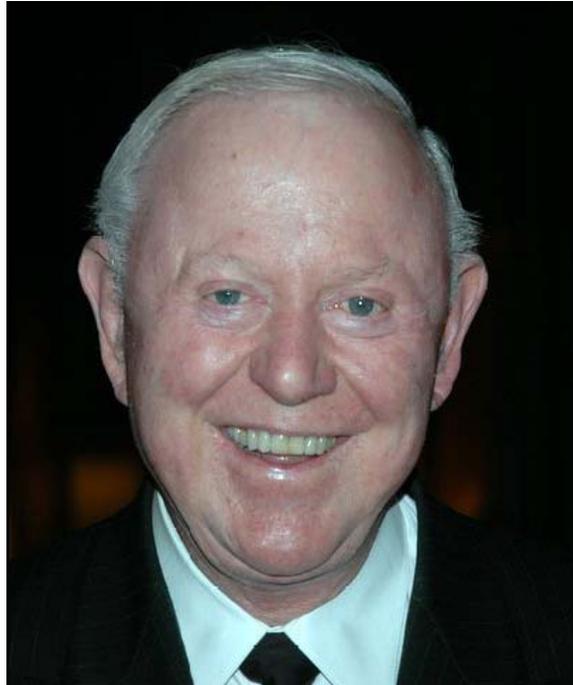


## GravWave® LLC TEAM

(A group of individuals in the United States and abroad who have a common interest in High-Frequency Gravitational Waves)

**Robert M L Baker, Jr., PhD**



**Principal Investigator and Project Manager**

Robert M L Baker, Jr. was born in Los Angeles on September 1, 1930. He has been married to his wife Bonnie since 1964 and has three grown children. Baker earned a bachelor's degree in Physics at UCLA with highest honors (*summa cum laude* – first in his class) was elected to *Phi Beta Kappa*, earned a master's degree in Physics and a Ph.D. in Engineering at UCLA—the Ph.D. degree with a specialization in space navigation was, according to UCLA officials, the first of its kind to be granted in the United States. Dr. Baker was on the faculty of the Department of Astronomy at UCLA from 1959 to 1963 and the Department of Engineering and Applied Science at UCLA from 1963 to 1971 as a Lecturer and Assistant Professor. During that time he was a Lecturer at the *United States Air Force Academy*. While on a two-year tour of active duty in the Air Force he worked on a variety of classified aerospace projects. He was the head of the Lockheed's *Aerodynamics Research Center* in Bel Air, California and in 1964 joined *Computer Sciences Corporation* as the Associate Manager for Mathematical Analysis. In 1980 he was elected President of *West Coast University*, an accredited university for the adult learner (Western Association of Schools and Colleges

or WASC and Accreditation Board for Engineering and Technology or ABET) now operating under the auspices of *American Career College* in Los Angeles. After retiring from West Coast University in 1997 as President and Professor of Engineering, Dr. Baker became the Senior Consultant for *Transportation Sciences Corporation* and *GRAVWAVE© LLC*. He won the *UCLA Physics Prize*, was recipient of the *Dirk Brouwer Award* for outstanding contributions in astrodynamics and orbital mechanics, was a recipient of the *Outstanding Man of the Year* Junior Chamber of Commerce award in 1965 presented to him by Ronald Reagan and the 2011 “Outstanding Lifetime Achievement in the Field of High-Frequency Gravitational Waves” Awarded during the joint Conference of the International Institute of Information and Systems (IIIS), International Conference on Information and Communication Technologies and Applications: ICTA 2011, the International Institute for Design Marketing in Science, Education and Technology (DeMset) and the 17th International Conference on Information Systems Analysis and Synthesis: ISAS 2011.. He is a *fellow* of the *American Association for the Advancement of Science*. He was national chairman of the Astrodynamics Technical Committee of the *American Institute of Aeronautics and Astronautics* (AIAA) from 1961 to 1964, was Editor of the *Journal of the Astronautical Sciences* from 1963 to 1975, was appointed by William Bennett to the *National Advisory Committee on Accreditation and Institutional Eligibility* of the Department of Education from 1987 to 1989, was appointed to the *Academic Review Committee on Gravitational Research* with the U. S. Army from 2001 to 2003, Vice Chairperson of the first International HFGW Workshop at the MITRE Corporation in 2003, Honorary Chairman of the second International HFGW Workshop in Austin Texas in 2007, Chairman of the third International HFGW Workshop in Huntsville, Alabama in 2009, cochairman of the High-Frequency Gravitational Wave Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010. and coauthor of papers presented at the Space Technology Applications International Forum in 2012. Dr. Baker is an Advisory Professor *Chongqing University*, China 2004, and was the author of several textbooks and over one hundred company reports, symposium papers, and journal articles in the area of astrodynamics, unmanned sailcraft, celestial mechanics, and High-Frequency Gravitational Waves (HFGWs) including *An Introduction to Astrodynamics* (1960) with Maud W. Makemson and *Astrodynamics: Applications and Advanced Topics* (1969). Dr. Baker has been Project Manager on three prototype development, fabrication, and test projects under contract to the U. S. Navy and Principal Investigator on several NASA and USAF projects while head of Lockheed’s *Astrodynamics Research Center*. As President of *West Coast University* Dr. Baker coordinated the activities of six groups of scientists and engineers spread throughout Southern California. Dr. Baker has been interested in the dynamics of gravitational fields since the 1950’s and in high-frequency gravitational-wave (HFGW) research since the early 1960’s. He is the inventor of the Li-Baker HFGW detector and the double-helix HFGW generator/transmitter and holds six patents and several pending patents in the United States, Europe, Russia, and China in the area of gravitational-wave generation and detection in the laboratory. You are invited to visit: [www.DrRobertBaker.com](http://www.DrRobertBaker.com).

**Roger Clive Woods, M.A., D.Phil., D.Sc. (Oxford), FIET**

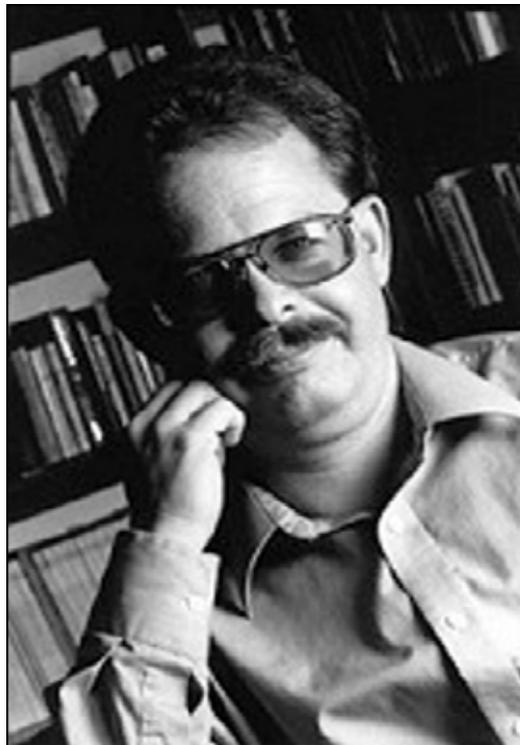


**Senior Scientific Investigator**

R. Clive Woods was born in Leicester, England on May 18, 1955. Currently he is Department Chairman and Voorhies Distinguished Professor, Department of Electrical and Computer Engineering, *Louisiana State University*. Woods earned a Master's degree and Doctorate at New College, *University of Oxford*, 1976 and 1980, for work on magnetic resonance in rare earth metal alloys in the Solid State Physics group of the Clarendon Laboratory in the *University of Oxford*. Dr. Woods was a Senior Scientist and Project Manager at Plessey Research (Caswell) Ltd. from 1982 to 1983, and Lecturer and Senior Lecturer on the faculty of the Electronic and Electrical Engineering Department of the *University of Sheffield* from 1983 to 2001. During this period he managed projects on the design, development, and test of microwave acoustic devices, III-V heterojunction bipolar transistors, avalanche photodiodes, high-temperature superconductors, and other solid-state devices. In 1989 he was appointed as a *British Association Media Fellow* and in 1995 he was Professeur Invité at the Laboratoire de Physique de la Matière, *Institut National des Science Appliquées* de Lyon, France. From January 2002 to June 2006 Dr. Woods was a Full Professor of Electrical and Computer Engineering at *Iowa State University*, Ames, Iowa. During 1992-1995 he was a Member of IEE Professional Group Committee S8 (Electromagnetics); 1999-2002 a Member of IEE Professional Group Committee E3 (Microelectronics and Superconductor Devices); 1999-2002 an Associate Editor of *IEE Electronics and Communication Journal*, and in 2003 a Member of the *National Science Foundation SBIR/STTR Photonics* (Lasers and

LEDs) panel. Dr. Woods has consulted for Barnsley Business and Innovation Centre Ltd., McLarens Ltd., Price Waterhouse, John Lovell Associates, Halpern & Ward Associates, the European Commission in Brussels, and Ashton Brown Associates Ltd. among others. He has authored over 70 technical papers and the book "Digital logic design" (with B. Holdsworth), Butterworth-Heinemann, 2002. Dr. Woods has been interested in the research associated with gravitational-waves for over a decade and participated in the first International HFGW Workshop at the MITRE Corporation in 2003, the second International HFGW Workshop at Austin, Texas in 2007, the third at Huntsville, Alabama in 2009 and the High-Frequency Gravitational Wave Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010. You are invited to visit: <http://myprofile.cos.com/cwoods>

**Eric W. Davis, PhD**



**Senior Scientific Investigator**

Eric Davis received his bachelor's degree in Physics in 1983 and a Ph.D. in Astrophysics with a specialization in the theory of relativity from the *University of Arizona* in 1991. His fields of specialization include relativity theory and cosmology, space mission engineering, gravitational-wave research, and the NASA Breakthrough Propulsion Physics program. Dr. Davis is a Senior Scientist at *The Institute for Advanced Studies at Austin*. He also participates in and serves as a consultant to the NASA Breakthrough Propulsion Physics program. For nearly six years Dr. Davis served as a research scientist and S&TI analyst at the National Inst. for Discovery Science-Bigelow Aerospace Co. where he conducted phenomenology research and forensic

investigations into transient optical phenomena and manned spaceflight research projects. Dr. Davis began his graduate work as a mission support and research assistant with the Infrared Astronomical Satellite group at the *Steward Observatory* in Tucson, AZ. In 1985, he joined the Voyager Ultraviolet Spectrometer Experiment group at the Lunar & Planetary Lab in Tucson where he conducted research on Jupiter's magnetosphere, the Uranus and Neptune planetary encounters, and participated in the Voyager 1 & 2 space mission support. Following completion of his doctorate, he became an associate faculty and interim director for the Arizona Astronomy Education Center at *Pima College* in Tucson. In 1995 Dr. Davis was appointed to the faculty of physical/computer sciences & mathematics, where he was involved with Air Force sponsored space mission engineering and Korean theater space reconnaissance training, at the *University of Maryland* Asian Division while he was stationed at the 8<sup>th</sup> Fighter Wing in Kunsan, South Korea. Dr. Davis developed experiment designs and cost estimates supporting the AFRL Advanced Concepts Office. He has also been recognized by the *American Institute of Aeronautics and Astronautics* in their 1993-94 Public Policy Award for outstanding contributions to national defense and space public policy, and received recognition from the State of Arizona Economic Conversion Council for contributions to commercial conversion of small-medium space and defense businesses in Arizona. Dr. Davis is a Fellow of the *British Interplanetary Society*, senior member of the *American Institute of Aeronautics & Astronautics*, member of the *Association of Former Intelligence Officers*, and member of the *American Astronomical Society*. Dr. Davis participated in the first International HFGW Workshop at the MITRE Corporation in 2003 and the second International HFGW Workshop at Austin, Texas in 2007.

**Andrew Beckwith, PhD**



**Scientific Investigator**

Andrew (Andy) Beckwith was born on December 15, 1954. He has studied astrophysics, theoretical Physics and superconductivity. He received his PhD from the Texas Center of Superconductivity on June 5th, 2002. Dr. Beckwith is currently working in condensed matter CDW/ Domain wall physics problems, and early universe models of emergent gravity/ entropy generation. He joined *Fermi National Accelerator*

Laboratory (FNAL) in August of 2002, is a member of the American Institute of Beam Energy and was appointed senior scientific researcher for GravWave® LLC in February, 2009. Dr. Beckwith is a Fellow of the Space Physics Committee on Space Research (COSPAR) and on their Committee for Space Astrophysics as well as a Life Member of the American Institute of Beamed Energy Propulsion (AIBEP). He has attended several astrophysics conferences in the last few years (2008) including the following: *Space Technology Application International Forum (STAIF)* 2007 and 2008 (HFGW sessions), Quantum Atomic and Molecular Tunneling in Solids (QAMTS) 2007 (Texas), 23rd International Conference On Neutrino Physics And Astrophysics (Neutrino 2008) (New Zealand), and European Committee for Future Accelerators (ECFA) 2008 on behalf of *Fermi National Accelerator Laboratory (Poland)*. He is also currently doing work in several areas including topics concerning the early universe and relic HFGWs. Dr. Beckwith participated in the third HFGW International Workshop at Huntsville, Alabama in 2009 and the High-Frequency Gravitational Wave Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010.

**Gary V. Stephenson**



**Scientific Investigator**

Gary Stephenson received his Bachelor's of Science Degree in Physics at Montana State University in 1983, and his Masters of Engineering in Space Systems Engineering at Stevens Institute of Technology in 2011. From 1983 to 1986 he was a Member of the Technical Staff at Hughes Aircraft Company where as a systems engineer in optical and radar systems. In 1986 Mr. Stephenson joined the Aerospace Optical Division of ITT where he performed systems design of space borne meteorological Infrared imagers. In 1989 through 1997 he returned to Hughes as a Systems Engineer where he was responsible for the electro-optical systems engineering and on-site support of AST, an airborne infrared tracking sensor for the US Army. From 1997 to 2010 he was a

Systems Engineer at The Boeing Company where he performed the systems design of electromagnetic and electro-optical mission equipment, including TAPLOC, (TENCAP AWACS Precision Location), the satcom system for Connexion by Boeing, and several proprietary satellite projects. Mr. Stephenson is named as inventor or co-inventor in six US patents in satellite communications. Since 2010 he has been with LinQuest, and as a government crew chief manages the integration of a number of GPS II-F spacecraft for the US Air Force. Since 1989 Mr. Stephenson has also been the president and chief investigator for Seculine Consulting, an applied physics consultancy. He has several publications in the communications applications of high-frequency gravitational waves, including the possible application of the Gertsenshtein effect. He has participated in the first International HFGW Workshop at the MITRE Corporation in 2003, the second International HFGW Workshop at Austin, Texas in 2007, as cochairman of the third at Huntsville, Alabama in 2009, and as cochairman of the High Frequency Gravitational Wave Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010.

**Lawrence S. Moy, M.D.**



**Medical/Biological Investigator**

Lawrence Moy graduated from Medical School at the University of California at Los Angeles in 1981 and was certified by the American Board of Dermatology. For the last several years Dr. Moy has worked with Dr. Baker on the applications and influences of high-frequency gravitational waves on biological matter especially on the muscles underlying the skin. They have jointly published peer-reviewed scientific papers on the subject.

## Colby Harper



### **Telecommunications Specialist**

Colby Harper graduated from the *University of Washington* with a BA with College Honors in Economics in 1993 and from 1996 to 1997 performed graduate studies *University of Washington Graduate School of Business Administration*. In 1993 he was the recipient of the Certificate in International Economics from the *University of Washington*. Between 1985 and 1990 Mr. Harper was in contract software development and network design and administration for companies including *Westinghouse Corporation*. He was involved in systems engineering at *Digital Communications Associates* in 1990-1991, was Senior Architect, Project Manager and Network Engineer at *Energy Northwest* from 1991 to 1995 and in late 1995 he served in the National Telecommunications and Information (NTIA) branch of the United States Department of Commerce and was a contributor to the Telecommunications Act of 1996. From 1996 to 2001 Harper was the National Director, Wireless Internet Service Provider & Technical Infrastructure at *Inteliant Corporation*, and in 2002 he joined *Washington Mutual* as a Product Manager involving, among other tasks, network systems and information handling. Harper is an IBM-Certified Client/Server Integration Specialist. In summary Mr. Harper is a hands-on wireless telecommunications executive having in-depth technology, operations, and process-improvement experience. In cooperation with Paul Murad he prepared a future concepts paper entitled: "Cost-based Global Optimization of Tomorrow's High-Frequency Gravitational Wave (HFGW) Communications System: Value-added HFGW Device Requirements for Today," and coauthored with Gary Stevenson a paper presented at the Space Technology and Applications International Forum (STAIF2007), sponsored by the American Institute of Physics, entitled "The

Value Estimation of an HFGW Frequency Time Standard for Telecommunications Network Optimization.”

**Buzz Aldrin, Sci. Dr.**



**Senior Scientific Advisor**

Edwin “Buzz” Aldrin was educated at *West Point*, graduating with honors in 1951, and was third in his class. He earned a Doctorate in Astronautics from the *Massachusetts Institute of Technology* in Manned Space Rendezvous. On July 20, 1969, Buzz and Neil Armstrong made their historic Apollo XI moon walk, thus becoming the first two humans to set foot on another world. Since retiring from *NASA*, the *Air Force*, and his position as Commander of the Test Pilot School at Edwards Air Force Base, Dr. Aldrin has remained at the forefront of efforts to ensure a continued leading role for America in manned space exploration. He has been interested in High-Frequency Gravitational Waves since 1999 when he was briefed on the subject by Dr. Baker. Dr. Aldrin heads *Starcraft Boosters, Inc.*, *Starcraft Enterprises* and the *ShareSpace Foundation*, and is Chairman of the *National Space Society*. In 2011 he was awarded the Congressional Gold Medal, the United States highest civilian award. You are invited to visit: [www.buzzaldrin.com](http://www.buzzaldrin.com).

## **Jerah D. Cameron**

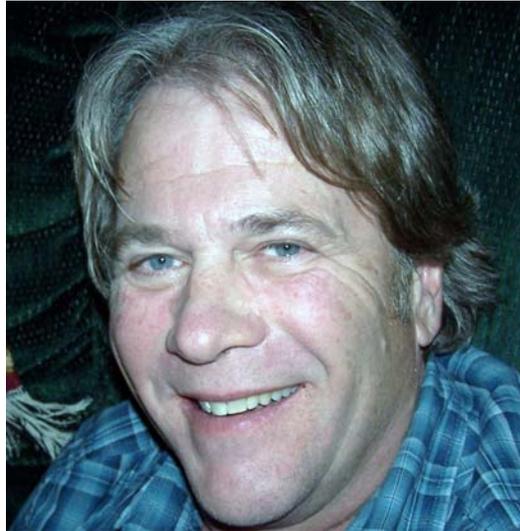


### **Senior Systems Engineer**

Jerah Cameron attended the *University of Northern Colorado* and *CCU* and was awarded a Bachelors of Science degree in Computer Information Systems-Management in 2002. He has Certification as a *Microsoft Systems Engineer* (MCSE NT/2000/2003/2010), *Microsoft Professional Internet* (MCP+NT/2000/2001) and *Microsoft Office SharePoint Server* [SharePoint Server 2007 and 2010 (MCTS)]. He is designated as a Senior Systems Engineer, Solutions Architect & Web Design/Programmer. At *Raytheon*, from 2003 to 2005, Mr. Cameron was a Systems Administrator/ Integration Specialist (SSB!/Top Secret Clearance). At *IBM*, from 2005 to 2006, he was a Senior Systems Administrator and SharePoint Architect, At *Newsgator Technologies*, from 2006 to 2011; he was Solutions Architect/Senior Systems Engineer. Most recently, 2011, Mr. Cameron is Solutions Architect/Level V Senior Technical Consultant for Hewlett Packard. He provides the technical direction required to resolve complex issues to ensure the on-time delivery of solutions that meet customer expectations. He regularly leads large functional teams to include technical management of client staff assigned to the implementation team in the completion of one or more solution requirements, architecture or implementation deliverables. Mr. Cameron works with peers outside his immediate organization to define and characterize complex technology or process problems and/or develops new solutions, yet he works independently from others to drive technical problems to a solution.

Recently (2012), he has become very interested in theories and research in the area of high-frequency gravitational waves and its applications to Information Technologies (IT).

### **Peter Guernsey**



### **Engineering Specialist**

Peter Guernsey was born in Kansas City, Kansas, youngest of five children. His father was an executive in the aerospace reprographics industry. In 1967, the family moved to Southern California where Peter spent his grade school years. In high school he focused on shop classes, photography, auto mechanics, wood shop, metal shop, photo offset lithography, photography, astronomy, and horticulture. During his high school tenure Peter was introduced to optical coating. Learning basic principals of vacuum pumps and ultra high vacuum pumps, and the deposition of simple materials such as aluminum, gold, SIO, for the application of astronomical mirrors and optics for precision instruments such as mirrors for galvanometers for seismic measurements. In 1982, he founded Guernsey Coating Laboratories, Inc. (GCL) in Ventura, California, as CEO and President. For the past 27 years GCL has specialized in precision optical coatings for lasers, medical instruments and military applications. GCL is currently involved in the manufacture and deposition of ION beam assisted, ION beam sputtered; electron beam deposited, and thermally deposited films for the optical and industrial community. Mr. Guernsey is most interested in gravitational-wave detection and, in particular, in the highly absorbent material coating to minimize microwave noise in the Li-Baker detector.

His interest In Einstein's general theory of relativity has intrigued him since early childhood along with the grail of physic's, which is to combine particle and wave theory.

### **Robin Fell**



### **International Business Specialist**

Robin Fell received her Bachelor of Arts degree in Political Science at the *University of California at Berkley* in 1990, Certificate at the *American University in Paris* in 1989, and a MBA in International Business at *Loyola Marymount University*, Los Angeles in 1997. She was the Night Reporter at television station *KMIR* in Palm Springs, California in 1990, directed domestic video distribution at *Vidmark Pictures* 1992-1994, and Director of International Sales at *Rysher Entertainment* 1994-1998. Robin is an inventor (of "Drip Free"), an entrepreneur and an international marketing and manufacturing specialist. She has made numerous sales trips to Europe and Southeast Asia and is the Media Director for *GravWave® LLC*..

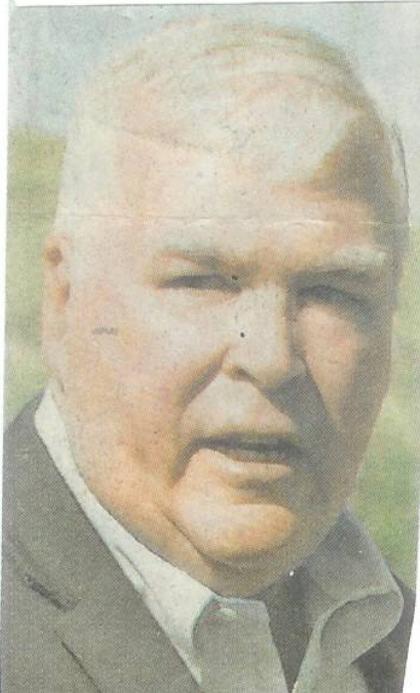
**Thomas R. Lane**



**Scientific Advisor**

Thomas R. Lane received his BS *cum laude* in Physics at the *United States Air Force Academy* in 1988. He completed Squadron Officer School in 1994 and graduated from Air Command and Staff College in 2002. From 2000 to 2004 he was Assistant Director of Operations and from 2004 to his retirement was Chief of Plans at the 28<sup>th</sup> Bomb Squadron in the *United States Air Force*. Lane is a B-1/T-37 Instructor Pilot and holds a Top Secret security clearance. In 2004 he assisted Dr. Baker in the preparation of the “Layperson’s Description of High-Frequency Gravitational Waves (HFGWs)” and has been an active, although unofficial, contributor to HFGW research since that time. He and his wife Cathy live in Abilene, Texas. Currently Mr. Lane is a member of J9 Future Capabilities Division, Force Management Directorate, U.S. Special Operations Command.

## **Frederick W. Noble**



### **Prototype Analyst**

The co-inventor with Dr. Baker of the parent patented HFGW invention, Frederick W. Noble, was born in Oak Park, Illinois, May 1, 1939. He earned a bachelor's degree at *UCLA* with a major in English and a minor in Naval Science. In the *United States Navy* from 1961 to 1963 he served as a junior officer on a destroyer based in Japan. In 1966 he earned a Doctor of Law degree from the *UCLA School of Law* and is a Member of the California and Federal Bar. Mr. Noble was a practicing attorney from 1966 to 1978. From 1979 to the present he is President and CEO of Frederick W. Noble, Inc., a personal investment company. From 1982 to the present he is President and CEO of *Wintec Energy, Inc.* and its affiliates, which operate wind farms in Palm Springs, California and in the Altamont Pass area in Northern California. In July of 2001 he co-founded GRAVWAVE<sup>®</sup> LLC with Dr. Baker. Mr. Noble's *Wintec* corporation owns a one-thousand-acre property in Palm Springs, California, with some 600 wind turbines. The property has available several 10-acre to 40-acre flat, vacant sites for the construction of the prototype embodiments of the HFGW generator/detector in the US. Mr. Noble and *Wintec* can make available several civil and electrical engineers and construction personnel for HFGW prototype fabrication and test.

## **Bonnie Sue Baker**



### **Scientific Investigator**

Bonnie Sue Baker was born in Dunsmuir, California on August 17, 1942. She attended *Glendale City College* 1960-61, studied Physics at *San Jose State College* 1962, Certified Microsoft Office Specialists 2012. She was Technical Assistant *Lockheed Astrodynamics Research Center* 1962-1963 (where she first became interested in high-frequency gravitational waves or HFGWs), Technical Associate, *Planning Research Corporation* 1963-1965, Scientific Associate, *Astrophysics Research Corporation* 1965-1968, Scientific Investigator, *Online Data Processing* 1968-1980, Director of Special Scientific Projects, *West Coast University* 1981-1986 and Scientific Associate *Transportation Sciences Corporation* 1987 to date. Attendee of the first International HFGW Workshop at the *MITRE Corporation* in 2003, the second International HFGW Workshop in Austin Texas in 2007, the third International HFGW Workshop in Huntsville, Alabama in 2009 , the High-Frequency Gravitational Wave (HFGW) Symposium at the *Johns Hopkins University Applied Physics Laboratory* in 2010 and coauthor of a paper on HFGW Global Communications at the the 17th International Conference on Information Systems Analysis and Synthesis: ISAS 2011.in Orlando, Florida, 2011 .and coauthor of papers presented at the Space Technology Applications International Forum in 2012.. She is the co-inventor of two high-frequency gravitational wave United States Patents and coauthor of several high-frequency gravitational wave technical papers.

## **Christine Black**



### **Scientific Associate**

Christine Black graduated from *The University of Michigan* in 2009 majoring in Astronomy and Astrophysics with an interdisciplinary major in Physics. She has taken courses in EM Theory, Quantum Mechanics, Celestial Mechanics (Stars and Galaxies), Optics, Special Relativity and Astronomical Techniques. She has carried out research with at the University of Michigan involving variable stars in the nearby galaxy Carina and accomplished graduate research at the *University of Tasmania*. Ms Black was involved in research projects at the UCLA Astronomy Department in 2011. She is currently pursuing post-graduate studies in the Department of Physics and Astronomy at *Dartmouth College*. She has a keen interest in HFGW research and has been an assistant of Dr. Robert M L Baker, Jr. as a Project Scientist at *GravWave® LLC* since 2007 and presented a paper with him concerning high-frequency gravitational waves at the third HFGW Workshop in February, 2009 at Huntsville, Alabama..

### **Andrew Moe**



#### **Student Apprentice**

Andrew Moe is an undergraduate student at *North Dakota State University*, with a major in Mechanical Engineering. Andrew takes an interest in some of the more obscure fields of science and is especially interested in the creation and application of HGFWs. He believes that they are going to become a key technology in the future. Andrew plans on testing the theories of the GravWave Team with the intention of engineering practical, and useful devices.

### **Jeff Schuss**



#### **Student Apprentice**

Jeff Schuss is an undergraduate (2007) at *Loyola Marymount University*, with a hybrid major of Engineering Physics (EE/Physics). Besides having “gone the extra mile” in investigating many principles and theories that would have been otherwise briefly mentioned in a class, Mr. Schuss plans on taking classes in **\*\*pending\*\***. He is fascinated by the work being done with HFGW and looks forward to broadening his horizons. He is also the grandson of Dr. Buzz Aldrin.

## **Maximilian Collins**



### **Student Apprentice**

Maximilian Collins (Max) is a 14 year old student in *Midlothian, Virginia*. He has loved science since the age of four months when he would stare fixatedly at the gears of the baby swing. He has been home schooled since the 6<sup>th</sup> grade and is currently enrolled in a nearby junior college. He will finish high school by the end of next year and plans to attend a four-year university in the fall of 2009. He first came across the subject of HFGWs in a scientific forum and began studying them. As a profession, he hopes to be a particle physicist, a research chemist, or a HFGW researcher.

## **IN MEMORIUM**

One of the most important and intelligent members of the GRAVWAVE® Team has passed away. Bob Anderson was a Captain of Industry, perceived to be assertive, even gruff on the outside, but gentle, kind and generous on the inside – we will miss his business acumen and advice.

### **Robert Anderson Senior Management Advisor**

Robert Anderson was the Chairman of the Board, President, and CEO of *Rockwell*. He received his bachelor's degree in mechanical engineering from *Colorado State University* in 1943. He was a knowledgeable and aggressive business man who was an expert in defense and commercial applications of new technology. He has been referred to as "... the father of the B-1 Bomber." In fact, in 1977 he accepted the prestigious *Robert J. Collier* Trophy for Rockwell International's work on the B-1 bomber. Mr. Anderson was a Lifetime Trustee of the *California Institute of Technology* and was a Consulting member of the Caltech Board of Trustees Committee on the *Jet Propulsion Laboratory*.

## INTERNATIONAL CORRESPONDING SCIENTIFIC ADVISORS

**Giorgio Fontana, PhD**



**Senior Scientific Advisor, Italy**

Giorgio Fontana was born in Trento, Italy on June 11, 1957. He received his doctorate with a specialization in electronics at the *University of Padua* in Italy. In 1984 Dr. Fontana became the Head of the Electronics Laboratory of the Department of Physics of the *University of Trento*. In 1995 he became the head of the computer center of the Faculty of Science (physics and mathematics) of the *University of Trento* and in 2000 he was advanced to the Head of the Electronics Laboratory of the Department of Information and Communication Technology at the *University of Trento*. Dr. Fontana has developed scientific instrumentation in the field of laser measurement and characterization of materials, ion transport and analysis, superconductors and related devices, cryogenic semiconductor electronics, optics, gravitational-wave Weber bar detectors and computer systems. Recently he has been involved in the development of technologies for atomic time transfer and synchronization, high speed data switching and fiber optic amplifiers and sensors. Dr. Fontana is interested in the development of new technologies for space travel with gravitational waves and is involved in the development of a suitable theoretical/engineering model for FTL travel through the Hyperspace. Currently he instructs in computer simulation and electronic circuit courses at the *University of Trento*. Dr. Fontana is a member of the *Istituto Nazionale di Fisica Nucleare (INFN)*. He has authored well over a dozen scientific papers related to High-Frequency Gravitational Waves (HFGW) in internationally recognized technical journals. He participated in the first International HFGW Workshop at the MITRE Corporation in 2003, the second International HFGW Workshop at Austin, Texas in 2007 and the third at Huntsville, Alabama in 2009.

## **Gloria Garcia-Cuadrado**



### **Scientific Advisor, Spain**

Gloria Garcia-Cuadrado was born in Barcelona, Spain on January 14, 1974. She received a Master in Theoretical Physics (Research Proficiency) by the Physics Faculty of the *University of Barcelona*, SPAIN; in 2002 she was awarded a Diploma in Space Studies by the *International Space University; Polytechnical University of Pomona*; California; USA and in 2000 received a Bachelor in Physics by the University of Barcelona; SPAIN. Director of the Catalan Aerospace Cluster BAIE (*Barcelona Aeronautics & Space Association*), gathering up to 90 members devoted to Aerospace Research & Technology in Catalonia and Spain, including Universities and other Research Centres, Companies, Financing Institutions and Government (both at regional level in Catalonia and at national level, in Spain). The Area focuses also in identifying advanced concepts and technologies to pursue. Projects carried out so far include Space Tourism; Life Support Systems for Human Spaceflight and Gravitational Wave research. As Head of Communication main responsibilities include: representation of the Centre; science outreach; institutional and governmental relations; and media relations and networking. She received a grant by the *European Space Agency* (ESA) to design, implement and conduct an experiment in microgravity conditions on board an Airbus 300; and a joint grant from ESA and the Government of Catalonia - Generalitat de Catalunya - to attend the *International Space University* Course, ending in the attainment of the Diploma in Space Studies; California – USA. Ms. Garcia-Cuadrado has expressed a great interest in High-Frequency Gravitational Wave research and she has been previously involved with low frequency Gravitational

Wave projects such as LISA and LISA Pathfinder. She was a participant in the third International HFGW Workshop at Huntsville, Alabama in 2009.

**Christian Corda, PhD**



**Scientific Advisor, Italy**

Christian Corda was born in Nuoro Italy on the March, 7, 1969. He obtained a Graduate Degree in Physics at the *Pisa University* in the 2001 and a specialist degree in Physical Sciences at the Pisa University in the 2003. He received his Ph.D in Physics at the Pisa University in 2003-2007, obtaining a research contract (Scientific Association) from the *Istituto Nazionale di Fisica Nucleare* (INFN) within the INFN-Pisa Section. Dr. Corda is a life member of the “Società Italiana della Relatività Generale e della Gravitazione” (SIGRAV). In 2007 Dr. Corda was the invited researcher at the *Albert Einstein Institute for Gravitational Physics*, in Hannover, Germany and invited Visiting Professor at the *Instituto de Cosmologia, Relatividade e Astrofísica* (ICRA-BR), Centro Brasileiro de Pesquisas Físicas, in Rio de Janeiro, Brazil. At the present time, Dr. Corda works within the Virgo Collaboration. He is Chairperson of the “Scientific Association Galileo Galilei”, in Prato near Florence, Italy. He is also First Investigator of the Cosmology, Astrophysics and Gravitation Program of the *Centro di Scienze Naturali*, in Prato. Dr. Corda is author of more than 40 scientific publications in international journals in the fields of gravitation, gravitational-waves, astrophysics and cosmology. In 13 of these publications he is the sole author. Dr. Corda is also author of a number of scientific talks at various international conferences and/or workshops. At the end of the 2007, Dr. Corda became the world’s most cited author in the *Official Astroparticle Publication Review* of ASPERA with 13 citations. ASPERA, the network of national government agencies responsible for coordinating and funding national research efforts in Astroparticle Physics. The Mayor and the city council of Nuoro will award Dr. Corda a solemn encomium in 2008 and also the nomination of world international ambassador for the city of Nuoro. Because of his recent research on the “magnetic” component of gravitational waves and on the stochastic background of relic gravitational

waves, Dr. Corda is strongly interested in the high-frequency gravitational waves.

**Richard Ingley, PhD**



**Scientific Advisor, England**

Richard Ingley received his Ph D in 2005 at *Birmingham University*, Birmingham, England. His thesis was entitled: "Implementation and Cross Correlation of Two High Frequency Gravitational Wave Detectors" and reports on his fabrication of the first High-Frequency Gravitational Wave (HFGW) detector. The detector was based upon the concept of Mike Cruise who found that in the presence of a gravitational wave, an electromagnetic wave will experience changes in its amplitude, frequency, direction of propagation and polarization. If an electromagnetic wave is confined to move in a circular path in the presence of a gravitational wave, then a resonant condition exists where the *polarization shift* is cumulative with successive passes of the path circumference and thus the HFGW can be detected. Dr. Ingley has published several peer-reviewed papers concerning HFGWs, presented papers at the Amaldi Conferences and was an invitee to the first International HFGW Workshop at the MITRE Corporation in 2003 and the second International HFGW Workshop at Austin, Texas in 2007. He is now associated with the Centre for Electronic Imaging School of Engineering and Design, *Brunel University*, Uxbridge Middlesex, England.

**Fangyu Li, PhD**



**Senior Scientific Advisor, China**

Fangyu Li was born on October 28, 1943. He was a student in the department of Physics at *Northwestern Normal University*, China from 1961 to 1965. From 1978 to 1990 he was a Lecturer. Associate Professor in the Department of Physics at *Chongqing University*, China and from 1990 to 1991 he was a visiting Scientist at the Gravitational Laboratory of the Sternberg State Astronomical Institute of the Moscow University in Russia. He was an Associate Professor, Department of Physics, *Chongqing University* from 1991 to 1994, was appointed Head of the Physics Department of *Chongqing University* from 1996 to 1998, and was appointed Dean of the college of Science at *Chongqing University* during the period 1998 to 2000. From 1994 to date, he has been a professor of Physics and Doctorate Tutor at the University. Now he is a member of the Council of the Chinese Physics Society, a member of the Council of the Chinese Gravitational and Relativity Astrophysical Society, a member of the World Laboratory, Chairman of *Chongqing Physics Society*, China and Head of the *Gravitational Physics Institute of Chongqing University*. His research fields include General Relativity and gravitation, classical and quantum electrodynamics in curved spacetime, theories of gravitational waves and gravitational radiation, positive definite problems of energy-momentum tensor of gravitational field, exact and approximate wave solutions of the Einstein field equations, gravitational perturbation effect in topological phonon space, interaction of gravitational waves with electromagnetic fields, and detection of high-frequency gravitational waves. Dr. Li has published more than sixty papers concerning gravitational waves in internationally recognized scientific journals and authored a paper at the first International HFGW Conference and

Workshop at The MITRE Corporation in 2003 participated in the second International HFGW Workshop at Austin, Texas in 2007.

**Zhenyun Fang, PhD**



**Senior Scientific Advisor, China**

Zhenyun Fang was born in Anhui China on May 4, 1945, graduate from Sichuan University in 1967 in Physics, received master's degree in Physics in 1982 at *Chongqing University (CQU)*. From 1983 to 1987 performed graduate studies at the *Unversite Catholique de Louvain (UCL)* in Belgium, and earned the PhD in Physics in 1987. From 1987 to 1990, was on the faculty of Department of Physics at Chongqing University (CQU) as an Associate Professor and Professor. From 1991, once as the Dean of the Graduate School, Assistant President of CQU. Currently, has been the Director of Institute of Theoretical Physics of CQU, Managing Director of *High Energy Society* of China, and has been interested in theoretical Physics, especially, in the research associate with the particle physics and related issues such as QED\_QCD\_SM (Standard Model) and beyond of electro-weak gauge-interaction, and high frequency gravitational-wave research, etc. for several decades. Dr. Fang participated in the second International HFGW Workshop at Austin, Texas in 2007.

**Ammar Sakaji, PhD**



**Senior Scientific Advisor, UAE**

Ammar Sakaji was born in Jordan on August 28, 1967. Graduated from the *University of Jordan* with bachelor's degree in Physics in 1989 (first in his class), and Master Degree which was a research degree at that time in Theoretical Condensed Matter Physics in 1994 (first in his class), and finished the PhD course work and research on Theoretical Physics. He was a faculty member (lecturer and senior lecturer) in the physics department at *Zarqa Private University* and *Hashemite University* in Jordan, he came to UAE as a visiting professor at *Ajman University*, and then faculty member at Naval College. He is author or co-author of dozens of articles on Theoretical and Mathematical Physics, and editor or co-editor of several books and projects such as; "Majorana Legacy in Contemporary Physics," Di Renzo, Roma 2006, "Physics Of Emergence and Organization," World Scientific Publishing Company 2008, "Lev Davidovich Landau and his Impact on Contemporary Theoretical Physics" (Horizons in World Physics, Volume 264), Nova Science Publisher 2008, and "Quantum Field Theory," Springer 2009, and Quantum Information Science Project 2009. He also actively participated in several international conferences and workshops in the fields of Theoretical Physics, Quality Assurance in Higher Education, Intellectual Property, and E-Commerce and Legal Vacuum. He is the Editor in Chief of the *Electronic Journal of Theoretical Physics* (EJTP) [www.ejtp.com](http://www.ejtp.com), member of the *International Association of Mathematical Physics* (IAMP), member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE), referee of the *International Journal of Theoretical Physics*, he is a member of the *Planetary Society Berkeley*,

*Jordan Physics Society, American Institute of Physics, and member of Majorana Prize Committee (Email: [info@ejtp.com](mailto:info@ejtp.com)).*

**Harald Dimmelmeier, PhD**



**Senior Scientific Advisor, Germany**

Harry Dimmelmeier was born in 1972 in Regensburg, Germany. He received his PhD in Physics from the Technical University Munich in 2001. He worked as a student at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute) in Potsdam and as a post-doctoral scientist at the Max Planck Institute for Astrophysics in Garching. There he conducted research on numerical simulations of compact objects like stellar cores, neutron stars and black holes as astrophysical sources for gravitational waves. He received a Marie Curie fellowship from the EU to work at the Aristotle University in Thessaloniki on gravitational wave asteroseismology. He was also a part time technical editor for the free electronic scientific journal 'Living Reviews in Relativity'. He published many peer-reviewed papers on the numerical modeling of gravitational wave sources, participated in numerous international conferences on that subject, and closely collaborated with scientists working in data analysis for the large gravitational wave interferometer detectors. In 2002 he sponsored Dr. Baker's Lecture at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute) in Potsdam. He recently moved to a position in industry and now works as a computational

engineer at AREVA NP in Erlangen in the field of safety analysis for nuclear power plants.

**Kai Lin**



**Scientific Associate, China**

Kai Lin was born in March, 1984 in P.R. China. In July 2006 he received a Bachelor of Science, in Physics at China West Normal University and in July 2009 he was awarded a Master of Science in Physics also at China West Normal University. Currently Mr. Lin is a doctoral student of Professor Li Fangyu and Professor Fang Zhenyun at the Institute of Theoretical Physics of Chongqing University and a visitor at Baylor University. His interests include: gravitational wave's theory and detection, cosmology, black hole thermodynamics, perturbations of black holes and computational physics. He has published in Physics Review D, Physics Letters B, Europhysics Letters, Modern Physics Letters A as well as other journals and is a member of the Chinese Physics Society.