Contact

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Top Skills

Breakthrough Propulsion Physics
Directed Energy Weapons
General Relativity Theory

Publications

Frontiers of Propulsion Science

Dr. Eric W. Davis

Senior Project Engineer, Space Nuclear Propulsion
Huntsville

Summary

Combined work experience in Aerospace Physics, Astronomy, and Astrophysics.
Expertise in Directed Energy, Space Mission Analysis and Design disciplines, Future and Transformation Concepts, Evaluating Maverick Inventions for IP development, and Investor Relations.
Experience in National Security disciplines.
Experience initiating, leading, and conducting advanced high-risk/ high-payoff research programs; DoD, DoE, intelligence community, and aerospace industry contracts and special projects.
Practical experience in astronomical and spacecraft systems, instrumentation, and observational techniques.
Proven record in scientific publications, public communication and presentations, and public policy.

Experience

The Aerospace Corporation
Senior Project Engineer
December 2019 - Present (2 years 5 months)
Huntsville, Alabama, United States

SME in space nuclear propulsion (nuclear thermal, nuclear electric, nuclear fusion) engineering-physics, space nuclear reactors, nuclear fuels, and reactor materials.

Center for Astrophysics, Space Physics and Engineering Research, Baylor University
Adjunct Research Professor
March 2017 - Present (5 years 2 months)
Waco, Texas Area

Initiate and co-supervise theoretical research projects in collaboration with Prof. Gerald Cleaver (Director of the Early Universe, Cosmology & Strings Theory Group at CASPER) to develop general relativistic faster-than-light propulsion physics via Lorentzian traversable wormholes and warp drives.

Our first theory project is to characterize the spacetime type and its corresponding symmetry properties for selected traversable wormhole and warp drive spacetime metrics; use Wolfram Mathematica to calculate the Carminati and McLenaghan curvature invariants and produce their 3-dimensional plots; and then interpret the physical meaning of the plots.

Our second theory project is to apply the Gauss-Bonnet Theorem to selected warp drive spacetime metrics to determine whether they are a form of dynamical traversable wormhole. And then translate the limit on the topology of the warp drive's spacetime geometry to a limit on how much negative energy is required to create a warp drive spacetime metric.

Co-supervise two physics Ph.D. candidates, three graduate physics students, and two advanced undergraduate physics students. Write and submit papers for publication in the peer-reviewed physics journals and present the results of our research at university colloquia and American Physical Society conferences.

EarthTech Int'l, Inc. and the Institute for Advanced Studies at Austin

Chief Science Officer

November 2004 - November 2019 (15 years 1 month)

Austin, TX

Initiate, direct/manage, collaborate on, and conduct internal advanced high-risk, high-payoff research projects and contracted projects/special programs for the U.S. Dept. of Defense (DoD), U.S. intelligence agencies, NASA, universities, commercial laboratories, private foundations, and the aerospace-defense industry. Duties included developing future and transformational concepts for aerospace-defense industry, U.S. Government customers, technology investors, and evaluate maverick inventions for IP development. Job duties involved working in national security disciplines with DoD security clearances and ITAR/EAR/OFAC export control and anticorruption certification.

Projects include theoretical and experimental research in quantum optics tomography; quantum field theory and quantum vacuum energy; general relativity theory/spacetime physics; directed energy for physics experiments, weapons, and commercial space launch applications; breakthrough propulsion & power physics for deep space, interstellar flight, and other space mission analysis and design disciplines. I also work in national security disciplines.

Duties included supervising individual members or small groups of the theory and laboratory engineering staff, and outside technical consultants. And coordinate with the CEO and CFO to develop annual operations and project budgets and milestones.

Responsible for assisting with investor relations and preparing investor proposal packages; relations with U.S. Congressional committees and U.S. Government department/agency and aerospace-defense industry leadership. Public and scientific communications and relations duties includes scientific publications and U.S. Government reports; academic colloquium talks, symposium/conference oral papers, and U.S. Government briefings; and participating/chairing in professional society technical program committees and conferences.

Warp Drive Metrics
CEO and Chief Scientist
January 2002 - December 2010 (9 years)
Las Vegas, NV and Austin, TX

Warp Drive Metrics is a small firm specializing in advanced concepts, future and transformation concepts, and breakthrough propulsion and power physics research for U.S. Government customers. We provide consulting and program contract services to the Air Force Research Laboratory (AFRL), the NASA Institute for Advanced Concepts, Department of Defense organizations, Department of Energy organizations, and the intelligence community.

Warp Drive Metrics collaborates with a number of industry, academic, and government organizations in the pursuit of breakthrough physics and technology that will advance the state-of-the-art in aerospace power and propulsion for future civilian and military applications.

We explore topics including, but not limited to, future aerospace power and propulsion, alternative energy, advanced and exotic physics, stealth communications, advanced and future weapons, future technology concepts, interstellar travel and propulsion, the application of general relativity theory and quantum field theory topics to aerospace and space exploration applications, etc.

Duties include working in national security disciplines, conduct research, and propose, evaluate or develop advanced, future and transformation concepts. Develop experiment designs and cost estimates supporting AFRL

Advanced Concepts Office projects. Develop consulting and project contract proposals and statements of work; develop and manage contract and business operations budgets and invoicing; travel to attend scientific conferences; submit monthly contract reports; and publish project final reports and scientific papers.

National Institute for Discovery Science (NIDS) and Bigelow Aerospace Co.

Director of Aerospace Physics & Astrophysics Research

July 1996 - April 2002 (5 years 10 months)

Las Vegas, Nevada Area

Conduct phenomenology research on unique uncorrelated and correlated target events. Design, develop and conduct research on sensor system discrimination of unique target signatures embedded in traditional background environments. Conducted forensic science and field investigations of unique target events. Coordinate with national security and law enforcement personnel.

Initiated and conduct investigation and analysis of traditional and non-traditional Search for Extraterrestrial Intelligence contact, visitation, and xenoarchaeology approaches; semiotics and the incommensurability problem for contact with intelligent extraterrestrials; and resolution of the Fermi Paradox. Initiate and conduct research project on general relativistic faster-than-light propulsion via traversable wormholes and warp drive for interstellar flight. Co-directed studies in human potentials and the physics of consciousness.

Evaluate and recommend aerospace materials, vendor services, space propulsion and transportation technologies, manned space systems technologies, launch service providers, and conduct corporate special projects. Initiated and managed space transportation and space tourism, orbital space hotel, and space habitat module design review and selection program.

Collaboration with scientific and laboratory engineering staff at EarthTech Int'l, Inc. in Austin, TX; the Defense Support Program Office, Sandia National Laboratory, NM; the Geoanalysis and Meteorology Program Office, Los Alamos National Laboratory, NM; the Lockheed-Martin Space Systems Co., Houston, TX; and the NASA Lewis (later renamed Glenn) Research Center, Cleveland, OH. Coordinate program development and oversight with the

President, Deputy Administrator, and the Science Advisory Board of NIDS.
Attend scientific conferences and publish scientific papers.

Education

University of Arizona

Ph.D., Astrophysics; outer planetary and infrared astronomy space missions; relativity theory & cosmology