



# Defense Intelligence Reference

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SCIENCE

## The Advanced Aerospace Threat Identification Program (AATIP)

BY JO



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This page will morph through the Advanced Stars Academy

### Background

In July of 2019, Aerospace Threat reports, by va

On January 16, 2019, The Black Vault received a list of all of the DIRD reports, under the Freedom of Information Act.

as this page check out The the To The for additional

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This document is made available through the declassification efforts and research of John Greenwald, Jr., creator of:

# The Black Vault





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programs. I have taken [redacted] [redacted] to cross reference the list of 38 reports to see what is available publicly, what is related and what is of greater interest to get released, as there is nothing in the public domain.

Below, you will find that research. The original numbered list are the AATIP reports from the DIA's list. Below that, you will find additional information about the report, author, university, company etc. where available.

As of March of 2022, all but one of the 38 DIRD reports have been released OFFICIALLY through FOIA. For reference, The Black Vault's FOIA case which received the below DIRDs is case #00159-2018, which was originally filed on January 31, 2018.

## Document Archive



### 1. Inertial Electrostatic Confinement Fusion, Dr. George Miley, University of Illinois

Report Status: **Released Officially**

Download [72 Pages, 4.35MB]



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#### Additional Information about the Author

From Wikipedia: *George H. Miley (born 1933) is a professor emeritus of physics from the University of Illinois at Urbana–Champaign. Miley is a Guggenheim Fellow and Fellow of the American Nuclear Society, the American Physical Society and the Institute of Electrical and Electronic Engineers. He was Senior NATO Fellow from 1994*

to 1995, received the Edward Teller Medal in 1995, the IEEE Nuclear and Plasma Science Award in Fusion Technology in 2003 and the Radiation Science and Technology Award in 2004. He holds several patents.

Dr. George Miley owns [NPL Associates](#). He, along with NPL Associates, have been awarded numerous contracts about advanced propulsion research. His [NASA contracts can be seen here](#) and [additional contracts seen here](#). This links do not serve as a full list of awarded contracts to Dr. Miley.



## 2. Advanced Nuclear Propulsion for Manned Deep Space Missions, Dr. F. Winterberg, University of Nevada

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## Advanced Nuclear Propulsion for Manned Deep Space Missions

[Download \[2.13 MB\]](#)

**Additional Information about the Author**

From Wikipedia: *Friedwardt Winterberg (born June 12, 1929) is a German-American theoretical physicist and research professor at the University of Nevada, Reno. With more than 260 publications and three books, he is known for his research in areas spanning general relativity, Planck scale physics, nuclear fusion, and plasmas. His work in nuclear rocket propulsion earned him the 1979 Hermann Oberth Gold Medal of the Wernher von Braun International Space Flight Foundation and in 1981 a citation by the Nevada Legislature. He is also an honorary member of the German Aerospace Society Lilienthal-Oberth. He is known for his proposal to put accurate atomic clocks on Earth-orbiting satellites in order to directly test General Relativity, his fusion activism, his first proposal to experimentally test Elsasser's theory of the geodynamo, his defense of rocket scientist Arthur Rudolph, and his involvement in the Albert Einstein-David Hilbert priority dispute.*

### Other Related Reports of Interest by Dr. Winterberg

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*Acquisition Threat Support*



28 January 2010

ICOD: 1 December 2009

DIA-08-0912-005



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8 March 2010

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DIA-08-1001-006



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Dr. Paul Czys

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Missouri, Ohio and Michigan. These UFOs were seen by many people: military, local police, and civilians, and were clocked at speeds around 20,000 MPH as they performed unusual silent maneuvers. Dr Czysz spent more than half his career at McDonnell-Douglas working on classified and compartmentalized projects, and testifies to the processes involved in maintaining secrecy on these projects. He warns against the human tendency to make every new technology into a weapon, pointing out that our weaponization of space does not address the threat of earth terrorists, and the idea of using these weapons against extraterrestrial targets would be suicidal.

Other Related Reports of Interest by Dr. Czysz



 **SUPERSONIC HYDROGEN COMBUSTION STUDIES** [48 Pages, 1.5MB] – The purpose of this test was to develop diagnostic techniques for the detection of hydrogen combustion in a hypersonic high temperature air stream. This was accomplished by ejecting hydrogen through sonic nozzles oriented normal to the airstream in the case of the flat plate model and at a 45-degree angle downstream in the case of the stepped flat plate model. The hydrogen gas was ejected into a high temperature airstream ( $T \approx 4000 \text{ R}$ ) at Mach Number 4.14 to 4.24. The data is presented in three forms: (1) photographs; (2) graphical; and (3) oscillo graph traces.

## 5. Advanced Space Propulsion Based on Vacuum (Spacetime Metric) Engineering, Dr. Hal Puthoff, EarthTech International

 **Download** [17 Pages, 1.2MB]



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**Based on Vacuum (Spacetime Metric) Engineering**

[Download](#) [1.21 MB]

**Report Status:** Released Officially

## Additional Information about the Author

According to To The Stars Academy of Arts & Science: "Dr. Harold E. Puthoff is the co-founder and Vice President of Science and Technology of TTS Academy. Since 1985, Dr. Puthoff has served as President and CEO of EarthTech International, Inc. (ETI), and Director of the Institute for Advanced Studies at Austin (IASA). He has published numerous papers on electron-beam devices, lasers and space propulsion and has patents issued in the laser, communications, and energy fields. Dr. Puthoff's professional background spans more than five decades of research at General Electric, Sperry, the National Security Agency, Stanford University and SRI International. Dr. Puthoff regularly advises NASA, the Department of Defense and intelligence communities, corporations and foundations on leading-edge technologies and future technology trends. He earned his Ph.D. from Stanford University in 1967 and won a Who's Who Lifetime Achievement in 2017 that recognizes individuals the past 20 years."



## 6. BioSens

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31 March 2010

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DIA-08-1003-020



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supported by NASA, I

Commission, Flinn Foundation, and the Whitaker Foundation. A recent interest has been in the transfer of ASU neurostimulation technology to small business. Classes he teaches include: BME-413 Biomedical Instrumentation (3) BME-423 Biomedical Instrumentation Lab (1) BME-522 Biosensors (3) BME-566 Medical Imaging (3). Professor Towe participates in the neuroengineering emphasis within the school as well as in the Medical Imaging emphasis in teaching of the coursework."

In 2002, Dr. Towe participated in a \$100,000 grant to study [AN ULTRASONIC NEURAL STIMULATOR](#).

According to details about the contract: "A remarkable and unexpected interaction effect between high frequency ultrasound energy and bioelectrically excitable tissue will be employed to the development of a line of advanced microstimulators for medical neurogenic applications An excised nerve preparation as well

as hippocampal tissue slices of the rat brain will be used as physiologic models for further study of the ultrasound interactions with natural and applied bioelectric currents. The limits of ultrasound effectiveness in this application, some preliminary evaluations of its safety, and exploration of different methods of applying the ultrasound to neural tissue will be conducted. Micro-sized ultrasound transducers will be fabricated using photographic techniques and submillimeter diameter lithium niobate crystals in an effort to characterize the ultimate limits of its miniaturization and potential for implantation. This work will serve to underpin a new approach to neuro-electric stimulation that uses ultrasound energy to substantially reduce the current levels required to stimulate nerves in the body and possibly open up new applications of neural stimulation."

In 2009, Dr. Towe was involved in research for, "[wireless ultrasound-powered biotelemetry for implants.](#)"



## 7. Invisibi

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2 March 2010

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DIA-08-1003-001



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### Other Related Reports of Interest by Dr. Leonhardt

In 2006, Dr. Leonhardt gave a presentation at NASA's Fundamental Physics in Space Symposium held in Washington, D.C. [Here is his PowerPoint presentation](#) from that lecture.

## 8. Traversable Wormholes, Stargates and Negative Energy, Dr. Eric Davis, EarthTech International

 [Download](#) [42 Pages, 2.66MB]



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### Additional Informa

According to the LifeBoat Foundation website, "Dr. Eric W. Davis, FBIS received his Ph.D. in astrophysics from the University of Arizona in 1991. His fields of specialization include spacecraft exploration of the outer solar system, planetary sciences, relativity theory and cosmology, space mission engineering, and NASA Breakthrough Propulsion Physics. Eric is a research physicist at the Institute for Advanced Studies-Austin and EarthTech International, and is also the CEO of Warp Drive Metrics (now in Austin, TX). He contracts with and consults to the Air Force Research Laboratory/Propulsion Directorate-Propellants Branch and the Department of Defense. During 1996–2002 he was with the National Institute for Discovery Science in Las Vegas, NV where he served as the staff Aerospace/Astro-Physics researcher. He also participated in and consulted to the NASA

Breakthrough Propulsion Physics program, and cofounded the Advanced Deep Space Transport Technology Assessment (Breakthrough Propulsion Physics) Group at NASA-JSC."

### Other Related Reports of Interest by Dr. Davis

 Advanced Propulsion Study, Air Force Research Laboratory, September 2004 by Dr. Eric W. Davis [103 Pages, 4MB]



## 9. High-Frequency Gravitational Wave Communications, Dr. Robert Baker, GravWave

Report Status: **Released Officially**

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## High-Frequency Gravitational Wave Communications



Download [3.49 MB]

Additional Information about the Author

According to [Dr. Baker's website](#), "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), member of Phi Kappa Psi Fraternity, Manager of the UCLA Yearbook, 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. In 1961 he became the Head of the Lockheed's Astrodynamics Research Center in Bel Air, California and in 1964 joined Computer Sciences Corporation as the Associate Manager for Mathematical



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Honorary Chairman of the second international High-Frequency Gravitational wave workshop at Austin Texas in September 2007, Chairman of the third Workshop in Huntsville, Alabama in 2009, appointed Chairman of the HFGW Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010 and Advisory Professor Chongqing University, China 2004 and 2008. Dr Baker is the inventor of the Li-Baker High-Frequency Gravitational Wave (HFGW) Detector the double-helix HFGW generator or transmitter. Since 2004 he accomplished research and development of an electrical muscle and cell treatment device, the Electrolift<sup>®</sup>, which he patented with L. S. Moy, MD, to reverse the aging process of a person's skin. He was the author of several textbooks and over one hundred company reports, symposium papers, and journal articles in the area of astrodynamics, unmanned sail-craft design, perfectly radiation-absorbent materials, skin treatment, celestial mechanics, and High-Frequency Gravitational Waves (HFGWs) including An Introduction to Astrodynamics

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Honorary Chairman of the second international High-Frequency Gravitational wave workshop at Austin Texas in September 2007, Chairman of the third Workshop in Huntsville, Alabama in 2009, appointed Chairman of the HFGW Symposium at the Johns Hopkins University Applied Physics Laboratory in 2010 and Advisory Professor Chongqing University, China 2004 and 2008. Dr Baker is the inventor of the Li-Baker High-Frequency Gravitational Wave (HFGW) Detector the double-helix HFGW generator or transmitter. Since 2004 he accomplished research and development of an electrical muscle and cell treatment device, the Electrolift<sup>®</sup>, which he patented with L. S. Moy, MD, to reverse the aging process of a person's skin. He was the author of several textbooks and over one hundred company reports, symposium papers, and journal articles in the area of astrodynamics, unmanned sail-craft design, perfectly radiation-absorbent materials, skin treatment, 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 concerning unmanned sea-craft under contract to the U. S. Navy and Principal Investigator on several NASA and USAF projects while Director of Lockheed's Astrodynamic 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 gravitational-wave research since the early 1960's. He holds six patents and several pending patents in the United States, Europe, Canada and China in the areas of electronic non-invasive facelift devices, HFGW applications and gravitational-wave generation and detection in the laboratory."

In 2010, Dr. Baker published a paper regarding, "[Applications of High-Frequency Gravitational Waves to the Global War on Terror](#)"

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23 March 2010

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DIA-08-1003-013



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principal of HRI, he is

to completion and is the chief designer with final oversight and accountability whilst managing and directing

multiple projects simultaneously. He is a consultant on novel and exotic materials, energy production and

propulsion concepts and is expert on experimental design, analysis, testing and technical drawing and report

writing. George is also a machinist with considerable experience in all cutting, turning, milling, joining and

fabrication operations and is an expert on scientific and engineering measurements and their misuse. He is also

a reviewer for several scientific publications and author of the book "Mindbending: The Hutchison Files"

## 11. Antigravity for Aerospace Applications, Dr. Eric Davis, EarthTech International

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According to the Life   an astrophysics from the University of Arizona in 1991. His fields of specialization include spacecraft exploration of the outer solar system, planetary sciences, relativity theory and cosmology, space mission engineering, and NASA Breakthrough Propulsion Physics. Eric is a research physicist at the Institute for Advanced Studies-Austin and EarthTech International, and is also the CEO of Warp Drive Metrics (now in Austin, TX). He contracts with and consults to the Air Force Research Laboratory/Propulsion Directorate-Propellants Branch and the Department of Defense. During 1996–2002 he was with the National Institute for Discovery Science in Las Vegas, NV where he served as the staff Aerospace/Astro-Physics researcher. He also participated in and consulted to the NASA Breakthrough Propulsion Physics program, and cofounded the Advanced Deep Space Transport Technology Assessment (Breakthrough Propulsion Physics) Group at NASA-JSC."

## Other Related Reports of Interest by Dr. Davis

 [Advanced Propulsion Study, Air Force Research Laboratory, September 2004 by Dr. Eric W. Davis \[103 Pages, 4MB\]](#)



## 12. Anomalous Acute and Subacute Field Effects on Human Biological Tissues

Report Status: **Released Officially**

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### Additional Information about the Author

According to the International Remote Viewing Association, "Christopher (Kit) Green, M.D., Ph.D. is an Assistant Dean (Asia Pacific) of the Wayne State School of Medicine in Detroit, Michigan. He holds clinical





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2 March 2010

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DIA-08-1003-002



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[redacted] (1958) and Ph.D. (1961) in physics at Yale University. He is a second-generation graduate student of Nobel Laureate Enrico Fermi, and spent his early post-doctoral years (1961-66) serving as Assistant Professor under Nobel Laureate Luis Alvarez at the University of California, Berkeley. In 1968 he created a high-energy physics research program at Michigan State University, where he was on the faculty until 1982. While on leave he served as Associate Laboratory Director for High Energy Physics at the Argonne National Laboratory (1978). In 1983 he became Director of the Laboratory for Elementary Particle Science and Physics Department Head at The Pennsylvania State University. Dr. Smith was spokesperson for several major international collaborations working at Brookhaven National Laboratory, CERN, Fermilab and the Stanford Linear Accelerator Center. He has over 300 journal-refereed publications, 200 invited papers and lectures, and is a Fellow of the American Physical Society. Dr. Smith oversaw the development of two antiproton traps, the Mark I portable trap built for the NASA Jet

Propulsion Laboratory, and the High Performance Antimatter Trap (HiPAT) for the NASA Marshall Space Flight Center. Dr. Smith became Professor Emeritus from Penn State in 2000. In 2001 Dr. Smith founded Positronics Research LLC (PRLLC), a small business that develops high technology solutions to national security and space systems."

In 2006, Dr. Smith's research was referenced in the NASA article, "[New and Improved Antimatter Spaceship for Mars Missions](#)". His website now seems to be defunct.



## 14. Concepts for Extracting Energy from the Quantum Vacuum, Dr. Eric Davis, EarthTech International

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## Concepts for Extracting Energy From the Quantum Vacuum

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## Additional Information about the Author

According to the LifeBoat Foundation website, "Dr. Eric W. Davis, FBIS received his Ph.D. in astrophysics from the University of Arizona in 1991. His fields of specialization include spacecraft exploration of the outer solar system, planetary sciences, relativity theory and cosmology, space mission engineering, and NASA Breakthrough Propulsion Physics. Eric is a research physicist at the Institute for Advanced Studies-Austin and EarthTech International, and is also the CEO of Warp Drive Metrics (now in Austin, TX). He contracts with and consults to the Air Force Research Laboratory/Propulsion Directorate-Propellants Branch and the Department of Defense. During 1996–2002 he was with the National Institute for Discovery Science in Las Vegas, NV where he served as the staff Aerospace/Astro-Physics researcher. He also participated in and consulted to the NASA Breakthrough Propulsion Physics program, and cofounded the Advanced Deep Space Transport Technology Assessment (ADSTTA).

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Director for Scientific Space exploration by the International Academy of Astronautics. Since 2012, he has

chaired the SETI Permanent Committee of the International Academy of Astronautics, succeeding Seth Shostak of the SETI Institute, who held that position from 2002 to 2012. Maccone's two vice-chairs are his fellow

Academics Michael Garrett (astronomer), Director of Jodrell Bank Centre for Astrophysics and Leonid Gurvits (IJVE)."


### Other Related Reports of Interest by Dr. Maccone

– The Statistical Drake Equation (Is this the same report?)

– Evo-SETI: A Mathematical Tool for Cladistics, Evolution, and SETI



## 16. Maverick Inventor Versus Corporate Inventor, Dr. George Hathaway, Hathaway Consulting

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### Additional Information about the Author

According to his now defunct website, "George Hathaway, P.E. graduated from the Dep't of Electrical Engineering at the University of Toronto in 1974 and is a Registered Professional Engineer. As founder and principal of HRI, he is responsible for scientific and engineering "hands-on" project management from concept to completion and is the chief designer with final oversight and accountability whilst managing and directing

multiple projects simultaneously. He is a consultant on novel and exotic materials, energy production and propulsion concepts and is expert on experimental design, analysis, testing and technical drawing and report writing. George is also a machinist with considerable experience in all cutting, turning, milling, joining and fabrication operations and is an expert on scientific and engineering measurements and their misuse. He is also a reviewer for several scientific publications and author of the book "Mindbending: The Hutchison Files"



## 17. Biomaterials, Dr. Bruce Towe, University of Arizona

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**Additional Information about the Author**





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include nanophotonics, optical and microwave metamaterials and their applications (including bio-sensing, optoelectronic devices, and vacuum electronics), and plasma physics. He is the author or coauthor of more than 180 papers in refereed journals, including *Science*, *Nature Physics*, *Nature Materials*, *Nature Photonics*, *Nature Communications*, *Physical Review Letters*, and *Nano Letters*. Dr. Shvets was a Department of Energy Postdoctoral Fellow in 1995-96. According to the ISI Web of Science, his work was cited over 7,000 times, giving him an *h*-factor of 45. He was a recipient of the Presidential Early Career Award for Scientists and Engineers in 2000. He is a Fellow of the American Physical Society (APS) and Optical Society of America (OSA). Professor Shvets is one of the pioneers in the emerging field of plasmonic metamaterials, especially in the infrared part of the spectrum. He and his colleagues were the first to experimentally implementing the concept of the Infrared Perfect Lens based on polaritonic materials (SiC), and the first to experimentally investigate optical properties


in 1995.

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research interests



of the so-called hyperbolic metamaterials that enable the propagation of sub-diffraction light waves. His most recent work deals with the applications of metamaterials and plasmonics to infrared light generation and harvesting, concentrated solar energy and thermo-photovoltaic systems, biosensing and molecular fingerprinting of proteins and live cells using metamaterial arrays, optical imaging with sub-diffraction resolution using nanoparticle labels, photonic topological insulators, graphene-based metamaterials, and electron beam-driven metamaterials. He is particularly interested in the integration of metamaterials and metasurfaces with various applications-specific platforms such as microfluidics, and in developing metamaterials-inspired devices that utilize non-traditional active, nonlinear, and low-loss materials such as graphene, quantum dots, silicon, and silicon carbide. Prof. Shvets is also a leader in the fields of advanced accelerator science and theoretical laser-plasma interactions, with specific emphasis on laser-plasma accelerators. His signature accomplishments include the inventions of the parametric laser compression in plasmas, of the direct-laser a

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19. Warp Drive,   ons, Dr. R. Obousy, Obousy Consultants

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2011 and 2013. He is also a regular guest contributor for Discovery Space News. Dr. Obousy completed his

Ph.D in theoretical physics in 2008, with a dissertation titled "Investigation into Compactified Dimensions:

Casimir Energies and Phenomenological Aspects", which was largely focused on understanding the nature of

the vacuum of quantum field theory. Prior to studying for his Ph.D, Dr. Obousy worked for the UK Defense

Evaluation and Research Agency (DERA) as a radar physicist. He successfully organized an award-winning

polarimetric radar experiment in Hawaii in 2001. He was recently a chapter contributor for the book "Going

Interstellar", edited by Jack McDevitt and Les Johnson (Deputy Manager for the Advanced Concepts Office at

NASA George C. Marshall Space Flight Center)."


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## 20. Technological Approaches to Controlling External Devices in the Absence of Limb-Operated Interfaces, Dr. R. Genik, Wayne State University

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### Additional Information about the Author

According to the Biographical Sketches of Committee Members, as published in the Opportunities in Neuroscience for Future Army Applications, "Richard J. Genik, II, is director of the Emergent Technology Research Division and research assistant professor in the Department of Psychiatry and Behavioral Neurosciences at Wayne State University. Among his many areas of expertise are the use of magnetic resonance imaging and the use of fMRI to measure cognitive workload in naturalistic, multitasking environments. Dr. Genik has 131 peer-reviewed publications, including "Watching people think" and "Scientific

methods that may predict behaviors," which appeared in *Bio technology Trends Relevant to Warfare Initiatives* in 2005. He has a Ph.D. in physics from Michigan State University and a B.S. in applied physics from Wayne State University."

### Other Related Reports of Interest by Dr. Genik

Dr. Genik wrote Chapter 16 of the following document:

 [Bio-Inspired Innovation and National Security](#) [376 Pages, 3.4MB]



## 21. Materials for Advanced Aerospace Platforms, Dr. J. Williams, Ohio State University

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## Materials for Advanced Aerospace Platforms

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## Additional Information about the Author

According to Ohio State University's website, "MSE Professor Jim Williams retired from Ohio State in the fall of 2010, concluding a prestigious career in which he focused on microstructure-property relations, materials processing, materials characterization, technology policy, and the management of technology intensive organizations. Williams, who holds a doctorate degree from the University of Washington, served as Dean of Ohio State's College of Engineering from 2001 to 2004. Before joining Ohio State, Williams held research and leadership positions at Boeing and Rockwell as well as GE, where he was instrumental in introducing several new materials and processes into the jet engine business. Williams also served as the General Chair for the National Res... ss in overseeing th



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bachelor's degree in metallurgical engineering from Michigan Technological University; and his master's and doctorate in materials science and engineering at Stanford University. He came to Johns Hopkins in 1996."


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research

## Other Related Reports of Interest by Dr. Hufnagel

 Structure and Dynamics of Shear Bands in Metallic Glasses and Nanophase Composites [15 Pages, 3.9MB]

## 23. Aerospace Applications of Programmable Matter, Dr. W. McCarthy, Programmable Matter Corporation

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### Additional Informa

According to the SIGMA Forums website, "Wil McCarthy — Engineer/Novelist/Journalist/Entrepreneur. Wil McCarthy is a former contributing editor for Wired magazine and the science columnist for the SciFi Channel, where his popular "Lab Notes" column has been running since 1999. A lifetime member of the Science Fiction and Fantasy Writers of America, he has been nominated for the Nebula, Locus, AnLab, Colorado Book, Theodore Sturgeon and Philip K. Dick awards, and contributed to projects that won a Webbie, a Game Developers' Choice Award, and a General Excellence National Magazine Award. His short fiction has graced the pages of magazines like Analog, Asimov's, Wired, and SF Age, and his novels include the New York Times Notable Bloom, Amazon.com "Best of Y2K" The Collapsium (a national bestseller) and, most recently, To Crush the Moon. He has also written for TV, appeared on The History Channel and The Science Channel, and

published nonfiction in half a dozen magazines, including GQ, Popular Mechanics and IEEE Spectrum. Previously a flight controller for Lockheed Martin Space Launch Systems and later an engineering manager for Omnitech Robotics and CTO of Galileo Shipyards (an aerospace research laboratory), McCarthy is currently the president of The Programmable Matter Corporation in Lakewood, CO. His nonfiction bestseller, *Hacking Matter*, describes the ongoing research by major corporations and university laboratories into quantum-dot based “programmable matter”, promising enormous changes in both technology and society.”



## 24. Metallic Spintronics, Dr. M. Tsoi, University of Texas

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## Metallic Spintronics

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Additional Information about the Author

According to the University of Minnesota's website, "Maxim Tsoi is a Professor of Physics at the University of Texas at Austin. A graduate of Moscow Institute of Physics and Technology, Russia (B.S. 1993; M.S. 1995) and Konstanz University, Germany (Ph.D. 1998), Dr. Tsoi joined the UT faculty in 2003, after serving as a postdoctoral member of the technical staff at IBM Almaden Research Center, Michigan State University, and the Grenoble High Magnetic Field Laboratory of Max-Planck-Institut für Festkörperforschung and Centre National de la Recherche Scientifique. His research interests include conduction electron/interface interactions, spin-polarized transport in mesoscopic structures, nanomagnetism and spintronics. Dr. Tsoi is a pioneer of experimental studies of Spin-Transfer Torque (STT). He was the first to demonstrate STT phenomenon in experiments with magnetic multilayers. His point-contact experiments with microwaves provided the first evidence of STT nano-oscillators. His experiments with exchange-biased spin valves gave the first evidence of STT in antiferromagnetic (AFM) materials and can be taken as the first step towards all-AFM spintronics. Dr. Tsoi is a recipient of the Royal Swedish Academy of Sciences Research Award in Stockholm, Sweden (2004).

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## 26. Aneutronic Fusion Propulsion I, Dr. V. Teofilo, Lockheed Martin

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Space Telescope and multiple Strategic Defense, USAF and NASA programs including the Mars Phoenix Lander.

His experience also includes R&D at PNNL, Bechtel Research and Westinghouse on advanced nuclear fission

and fusion reactors. He has also performed research and teaching at Princeton University, NYU and SUNY

Maritime College."

## 27. Cockpits in the Era of Breakthrough Flight, Dr. G. Millis, Tau Zero

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middle name

" is Dr. Millis'

According to the Tau Zero website, "**Marc Millis lead NASA's visionary "Breakthrough Propulsion Physics" project and created the milestone book, Frontiers of Propulsion Science, a compendium of scholarly research on propellantless space drives and faster-than-light flight. Earlier in his NASA career, Millis designed ion thrusters, electronic instrumentation for rockets, cryogenic propellant equipment, and even a cockpit display for free-fall aircraft flights. After 31 years with NASA, he retired in 2010 to devote full time to interstellar research and education via the Tau Zero Foundation. Marc envisioned Tau Zero as a place for thinking about the long-range future of space exploration. While others work on the next big thing, Tau Zero looks at emerging possibilities that could change our future. Instead of advocating a specific mission or vehicle, Tau Zero builds a foundation of reliable information from which future vehicles and missions can be created. This includes**

investigating ideas on the infrastructures for expanding human presence in space, launching interstellar probes, and all the way to the advancing the physics of faster-than-light flight.”

### Other Related Reports of Interest by Dr. Millis



#### NASA’s Breakthrough Propulsion Physics Documents

Additional reports of interest:

- Millis, M. G. (1999) “NASA Breakthrough Propulsion Physics Program”, In Acta Astronautica, Vol. 44, Nos. 2-4, pp. 175-182.
- Millis, M. G. (1999) “NASA Breakthrough Propulsion Physics Program”, In Acta Astronautica, Vol. 44, Nos. 2-4, pp. 175-182.
- Millis, M. G. (1999) “NASA Breakthrough Propulsion Physics Program”, In Acta Astronautica, Vol. 44, Nos. 2-4, pp. 175-182.
- Millis, M. G. (1999) “NASA Breakthrough Propulsion Physics Program”, In Acta Astronautica, Vol. 44, Nos. 2-4, pp. 175-182.
- Millis, M. G. (1999) “NASA Breakthrough Propulsion Physics Program”, In Acta Astronautica, Vol. 44, Nos. 2-4, pp. 175-182.
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resonance imaging and the use of fMRI to measure cognitive workload in naturalistic, multitasking

environments. Dr. Genik has 131 peer-reviewed publications, including "Watching people think" and "Scientific methods that may predict behaviors," which appeared in *Bio technology Trends Relevant to Warfare Initiatives*


in 2005. He has a Ph.D. in physics from Michigan State University and a B.S. in applied physics from Wayne State University."

### Other Related Reports of Interest by Dr. Genik

Dr. Genik wrote Chapter 16 of the following document:

## 29. Detection and High Resolution Tracking of Vehicles at Hypersonic Velocities, Dr. W. Culbreth, University of Nevada



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### Additional Information about the Author

According to the LC Energy Storage website, "Dr. William Culbreth, Department of Mechanical Engineering, University of Nevada, Las Vegas, has nearly 40 years of experience in the fields of Fluid Dynamics, Aerodynamics, Instrumentations and Sonar, Renewable Energy Storage Systems, and Systems Engineering Design and Fabrications. Professor Culbreth has been widely published, and has extensive experience with the

national laboratories. Earlier in his career he worked for the Naval Research Laboratory in Washington, D.C. He earned a Mechanical Engineering degree from the California State Polytechnic University, Pomona, and his M.S. and Ph.D. degrees from the University of California, Santa Barbara."

### Other Related Reports of Interest by Dr. Culbreth

 OPTIMIZATION OF CHEMICAL ETCHING PROCESS IN NIOBIUM CAVITIES [8 Pages, 8.9MB]



## 30. Aneutronic Fusion Propulsion II, Dr. W. Culbreth, University of Nevada

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Additional Information about the Author

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### Other Related Reports of Interest by Dr. Culbreth

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Breakthrough Propulsion Physics. Eric is a research physicist at the Institute for Advanced Studies-Austin and EarthTech International, and is also the CEO of Warp Drive Metrics (now in Austin, TX). He contracts with and consults to the Air Force Research Laboratory/Propulsion Directorate-Propellants Branch and the Department of Defense. During 1996–2002 he was with the National Institute for Discovery Science in Las Vegas, NV where he served as the staff Aerospace/Astro-Physics researcher. He also participated in and consulted to the NASA Breakthrough Propulsion Physics program, and cofounded the Advanced Deep Space Transport Technology Assessment (Breakthrough Propulsion Physics) Group at NASA-JSC."

Other Related Reports of Interest by Dr. Davis



## 32. Magnetohydrodynamics (MHD) Air Breathing Propulsion and Power for Aerospace Applications, Dr. S. Macheret, Lockheed Martin

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### Additional Information about the Author

According to Purdue University, "Dr. Sergey Macheret has received his M.S. and Ph.D. degrees from Moscow Institute of Physics and Technology and Kurchatov Institute of Atomic Energy, respectively. Since moving to the US in 1991, he worked at the Ohio State University (1991-1994) and Princeton University (1994-2006). Since

2006, he has been with Lockheed Martin Aeronautics Company's Advanced Development Programs (the Skunk Works), where he is the leader of a team engaged in a number of both government-sponsored and company-funded research and development projects on aerospace applications of weakly ionized plasmas. Dr. Macheret has made contributions to the theory of nonequilibrium physical and chemical processes in high-enthalpy flows, to highly efficient generation of nonequilibrium plasmas, and to aerospace applications of plasmas and magnetohydrodynamics. Dr. Macheret is an author or co-author of over 160 journal and conference papers, 10 patents, and 2 books. In the last decade, he gave dozens of invited presentations and lectures and chaired AIAA conferences and sessions."

## Other Related Reports of Interest by Dr. Macheret

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surfaces, and the development of a new diagnostic for plasmas and high-speed flows. Two control strategies

are being examined: the snow-plow arc and the dielectric barrier discharge. The snowplow arc uses a

constricted surface discharge which is accelerated by a magnetic field and pushes the air with it. The

dielectric barrier discharge uses an electric field gradient along the surface that couples to the flow.

Theoretical work has focused on the optimization of both of these concepts for efficient control of boundary

layers in high speed flow and on interactions with AFRL on model development and validation. The power

extraction concept involves the development of a new pulse sustained thermionic flatpanel for extracting

power from hot surfaces. The new diagnostic is Radar REMPI, which is based on scattering of microwave

radiation from a small laser-induced ionization region in a flowing gas, combusting zone, or plasma. It has

the potential for local temperature, velocity, species, and electron density measurements.



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### 33. Quantum Computing and Utilizing Organic Molecules in Automation Technology, Dr. R. Genik, Wayne State University

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#### Additional Information about the Author

According to the Biographical Sketches of Committee Members, as published in the Opportunities in Neuroscience for Future Army Applications, "Richard J. Genik, II, is director of the Emergent Technology Research Division and research assistant professor in the Department of Psychiatry and Behavioral Neurosciences at Wayne State University. Among his many areas of expertise are the use of magnetic resonance imaging and the use of fMRI to measure cognitive workload in naturalistic, multitasking environments. Dr. Genik has 131 peer-reviewed publications, including "Watching people think" and "Scientific

methods that may predict behaviors," which appeared in *Bio technology Trends Relevant to Warfare Initiatives* in 2005. He has a Ph.D. in physics from Michigan State University and a B.S. in applied physics from Wayne State University."

### Other Related Reports of Interest by Dr. Genik

Dr. Genik wrote Chapter 16 of the following document:

 [Bio-Inspired Innovation and National Security](#) [376 Pages, 3.4MB]



## 34. Quantum Tomography of Negative Energy States in the Vacuum, Dr. E. Davis, EarthTech

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## Quantum Tomography of Negative Energy States in the Vacuum

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### Additional Information about the Author

According to the LifeBoat Foundation website, "Dr. Eric W. Davis, FBIS received his Ph.D. in astrophysics from the University of Arizona in 1991. His fields of specialization include spacecraft exploration of the outer solar system, planetary sciences, relativity theory and cosmology, space mission engineering, and NASA Breakthrough Propulsion Physics. Eric is a research physicist at the Institute for Advanced Studies-Austin and EarthTech International, and is also the CEO of Warp Drive Metrics (now in Austin, TX). He contracts with and consults to the Air Force Research Laboratory/Propulsion Directorate-Propellants Branch and the Department of Defense. During 1996–2002 he was with the National Institute for Discovery Science in Las Vegas, NV where he served as the NASA Breakthrough Propulsion Assessment (BPA) Lead."

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## 36. Negative Mass Propulsion, Dr. F. Winterberg, University of Nevada

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### Additional Information about the Author

From Wikipedia: *Friedwardt Winterberg (born June 12, 1929) is a German-American theoretical physicist and research professor at the University of Nevada, Reno. With more than 260 publications and three books, he is known for his research in areas spanning general relativity, Planck scale physics, nuclear fusion, and plasmas. His work in nuclear rocket propulsion earned him the 1979 Hermann Oberth Gold Medal of the Wernher von Braun International Space Flight Foundation and in 1981 a citation by the Nevada Legislature. He is also an honorary member of the German Aerospace Society Lilienthal-Oberth. He is known for his proposal to put accurate atomic clocks on Earth-orbiting satellites in order to directly test General Relativity, his fusion activism,*

his first proposal to experimentally test Elsasser's theory of the geodynamo, his defense of rocket scientist Arthur Rudolph, and his involvement in the Albert Einstein-David Hilbert priority dispute.

### Other Related Reports of Interest by Dr. Winterberg

 [Thermonuclear Micro-Bomb Rocket Propulsion](#) [98 Pages, 4.7MB] – The report describes an advanced nuclear rocket propulsion system based on a chain of exploding thermonuclear micro-bombs ignited in front of a concave magnetic reflector open at one side. It is shown that for such a propulsion system to work with ideally high efficiency the following conditions have to be satisfied: the thermonuclear material for the micro-bombs has to be a stoichiometric mixture of He3 and D in solid or liquid form, and the ignition of the micro-bombs has to be accomplished by an intense relativistic electron beam.



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### Additional Information about the Author

No additional information is available on J. Albertine that is verifiable.

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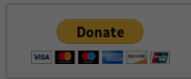
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**CASE #346**[Playwright Render](#)

## SOURCE URL

<https://www.theblackvault.com/documentarchive/the-advanced-aviation-threat-identific>

## DOMAIN

[www.theblackvault.com](http://www.theblackvault.com)

## CASE ID

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## CONTEXT FROM ORIGINAL DOCUMENT

demonstration with the john  
hutchison/

Note: It is possible the Hutchison effect was accidentally tapping into quantum vacuum energy, or the zero point energy field. Uncontrolled, this energy could be used as a weapon; controlled, it could be a stable power source.

Note: Hathaway was one of the scientists tasked with writing a Defense Intelligence Reference Document for the 2009 AAWSAP/AATIP program.

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