

INAUGURAL ALABAMA POWER GRID DEFENSE CONFERENCE

Save the Grid. Save the Future.

September 20-21, 2016

U.S. SPACE AND ROCKET CENTER EDUCATION AND
TRAINING FACILITY; AND HUNTSVILLE MARRIOTT



CORPORATE AND INDIVIDUAL SPONSORS

 **Dynetics**

 **ENERGY
HUNTSVILLE**

 **U.S. Space &
Rocket Center®**

CPT Edward B. Kiker (U.S. Army, Ret.)

EVENT HOSTED BY



Huntsville Alabama L5 Society

A Chapter of the National Space Society

FROM THE CONFERENCE CHAIR

Dear Power Grid Defense Conference Attendee:

The Huntsville Alabama L5 Society (HAL5) and its Power Grid Defense Committee welcomes you to the Inaugural Power Grid Defense Conference. This conference is not just another conference to hear people talk. Our intent is to initiate activities to get Alabama to harden its power grid.

We start off with day 1 of our conference at the U.S. Space and Rocket Center's Education and Training Facility with the day 1 evening dinner function at the Huntsville Marriott to develop awareness in the community for the threats we face to our power grid and what we can do about it. These sessions are open to the public as we intend to inform the public and develop public support for hardening the grid.

Day 2 of our conference will be held in the Marriott Enterprise meeting room. During day 2's morning session, we will consider legislation, regulations, plans and procedures for Alabama to harden its grid. We will develop an action plan to flesh these out and determine how to get these items through the legislature, public service commission, and governor's office. During the afternoon session we will plan to formulate an Alabama power grid advocacy group, a political action network, and plans to get proposed legislation and regulations approved. This may include having groups of citizens visiting state officials in Montgomery, and expert testimony before the legislature and/or governor's office. We may have citizens calling/emailing their legislators and possibly visiting their home offices. There is plenty each of you can do. You don't have to be a 'rocket scientist' or an electrical engineer to help us ensure a bright future with a secure grid. You just have to care and be willing to take action. So roll up your sleeves and join with us in this vital effort.

May your lights always shine,

Gregory H. Allison

Founder, HAL5

Power Grid Defense Committee Chair

Email: Greg@PowerGridDefense.org

Website: www.PowerGridDefense.org



OUR SPEAKERS



Dr. Peter Vincent Pry

Dr. Peter Vincent Pry is Executive Director of the Task Force on National and Homeland Security, a Congressional Advisory Board dedicated to achieving protection of the United States from electromagnetic pulse (EMP), cyber-attack, mass destruction terrorism and other threats to civilian critical infrastructures on an accelerated basis. Dr. Pry also is Director of the United States Nuclear Strategy Forum, an advisory board to Congress on policies to counter Weapons of Mass Destruction. Dr. Pry served on the staffs of the Congressional Commission on the Strategic Posture of the United States (2008-2009); the Commission on the New Strategic Posture of the United States (2006-2008); and the Commission to Assess the Threat to the United States from EMP Attack (2001-2008).

Dr. Pry served as Professional Staff on the House Armed Services Committee (HASC) of the U.S. Congress, with portfolios in nuclear strategy, WMD, Russia, China, NATO, the Middle East, Intelligence, and Terrorism (1995-2001). While serving on the HASC, Dr. Pry was chief advisor to the Vice Chairman of the HASC and the Vice Chairman of the House Homeland Security Committee, and to the Chairman of the Terrorism Panel. Dr. Pry played a key role: running hearings in Congress that warned terrorists and rogue states could pose an EMP threat, establishing the Congressional EMP Commission, helping the Commission develop plans to protect the United States from EMP.

Dr. Pry was an Intelligence Officer with the Central Intelligence Agency responsible for analyzing Soviet and Russian nuclear strategy, operational plans, military doctrine, threat perceptions, and developing U.S. paradigms for strategic warning (1985-1995). He also served as a Verification Analyst at the U.S. Arms Control and Disarmament Agency responsible for assessing Soviet compliance with strategic and military arms control treaties (1984-1985).

Dr. Pry has written numerous books on national security issues, including *Apocalypse Unknown: The Struggle to Protect America from an Electromagnetic Pulse Catastrophe*; *Electric Armageddon: Civil-Military Preparedness for an Electromagnetic Pulse Catastrophe*; *War Scare: Russia and America on the Nuclear Brink*; *Nuclear Wars: Exchanges and Outcomes*; *The Strategic Nuclear Balance: And Why It Matters*; and *Israel's Nuclear Arsenal*. Dr. Pry often appears on TV and radio as an expert on national security issues. The BBC made his book *War Scare* into a two-hour TV documentary *Soviet War Scare 1983* and his book *Electric Armageddon* was the basis for another TV documentary *Electronic Armageddon* made by the National Geographic.



Ambassador Henry F. Cooper

Ambassador Henry F. (Hank) Cooper is Chairman of the Board of High Frontier, a non-profit, non-partisan educational corporation, formed to examine the potential for defending America against missile attack. Founded by General Daniel O. Graham in the early 1980's, High Frontier played a key role in developing the framework for President Ronald Reagan's Strategic Defense Initiative (SDI). Under Ambassador Cooper's direction, High Frontier continues to inform the nation of the growing threat of ballistic missiles and of the need for a workable missile defense.

Ambassador Cooper has had a long and distinguished career in service to his country. He was Director of the Strategic Defense Initiative Organization (SDIO) during the Bush administration. Prior to becoming SDIO's first civilian director, he conducted a major independent review of the SDI program and related policy issues for Defense Secretary Dick Cheney, the results of which were instrumental in reversing the SDI funding cuts Congress had mandated in the preceding several years. Previously, he was President Reagan's Chief Negotiator at the Geneva Defense and Space Talks, successfully defending SDI in these negotiations with the now defunct Soviet Union.

Ambassador Cooper also led the development of President Reagan's space arms control policy while serving as Assistant Director of the Arms Control and Disarmament Agency, and as Deputy Assistant Secretary of the Air Force earlier in the Reagan Administration, he helped institute the 1981 Strategic Modernization Program. Much earlier in his career, he was Scientific Advisor at the Air Force Weapons Laboratory, now Phillips Laboratory, in Albuquerque, New Mexico.

Ambassador Cooper is also Chairman of Applied Research Associates, Senior Associate of the National Institute for Public Policy, and Visiting Fellow at the Heritage Foundation. Previously in the private sector, he was Senior Vice President of Jaycor, Deputy Director of the Nuclear Weapons Effects Division at R&D Associates, member of the technical staff at Bell Laboratories, and an instructor at Clemson University. Author of over 100 technical and policy publications, Ambassador Cooper holds a Ph.D. from New York University in mechanical engineering, and BS and MS degrees from Clemson University, also in mechanical engineering.



Mitzi Adams

Mitzi Adams is a solar scientist for NASA's Marshall Space Flight Center (MSFC), where she studies the magnetic field of the Sun and how it affects the upper layer of the solar atmosphere, the corona. Ms. Adams, a daughter of Atlanta, earned a Bachelor of Science degree in physics with a mathematics minor from Georgia State University. In 1988, the University

of Alabama in Huntsville (UAH) and NASA made her an “offer she couldn’t refuse” and she moved to Alabama, where she earned a Master of Science degree in physics and began work at NASA/MSFC. With a professional interest in sunspot magnetic fields and coronal bright points, friends have labelled her a “solar dermatologist”. Frequently involved in educational outreach activities such as viewing solar eclipses and transits of Mercury and Venus, Ms. Adams sometimes seeks innovative material in unusual places. While few women travel alone, she has often been seen alone and in groups in the wilds of Peru, northern Chile, Guatemala, and southern Italy.



Brig. Gen. Ken Chrosniak (U.S. Army, Ret)

Ken Chrosniak enlisted in the Army in 1965, was commissioned through Officer Candidate School, and went on to serve 37 years of combined duty in the Regular Army, Army Reserve, and the National Guard. Ken was promoted by New York Governor George Pataki in 2005. He has an undergraduate degree in Secondary Education from Daemen College, a Master in Education from Saint Bonaventure University, and is an Army War College graduate. He has served in varied command and staff assignments in the U.S. and overseas, including Vietnam, Bosnia, Kuwait, and Iraq.

Ken retired from active duty in 1998 while an instructor at the Army War College at Carlisle Barracks, and remained at the Barracks as a civilian faculty instructor. In 2002 he was recalled to active duty service for two years on the Joint Chiefs of Staff where he helped write the National Military Strategic Plan for the War on Terror. He went on to serve in Iraq for several months at the U.S. Embassy as Chief of Staff for Strategy and Plans, and later as Commander of the Abu Ghraib Forward Operating Base and detention facility (after the scandal). Upon release from active duty in 2005, Ken returned to Army War College instructor duties when, after one year, he was again recalled to active service for an additional two years as Chief of Staff of the Army Asymmetric Warfare Office located in the Pentagon. His most significant decorations are the Defense Superior Service Medal, the Legion of Merit, the Bronze Star Medal, the Good Conduct Medal, and the Combat Action Badge.

Ken is an Ambulance Company Vice-President, and an active Firefighter with Carlisle Fire and Rescue Company. He considers his most immediate calling in service to the Nation is to ensure the survivability of the Nation’s sovereignty by maintaining a viable, hardened, and resilient energy grid as the most crucial of all critical infrastructure sectors.



Dr. David Falconer

Dr. David Falconer is a research scientist at the University of Alabama in Huntsville. He graduated from the University of Maryland in 1994 with a Ph.D. in Physics. He began using vector magnetograms to study coronal heating. In 2000, he started looking into quantitative methods of forecasting flares and coronal mass ejections (CMEs) from active region magnetic measures. In 2008, Dr. Falconer partnered with NASA/SRAG to develop MAG4 (short for magnetogram forecast) which is an automated flare/CME forecasting tool. MAG4, unlike the earlier basic research, is Research to Operations (R2O). MAG4 became active in 2011 with the new Solar Dynamics Observatory (SDO)/(Helioseismic and Magnetic Imager) HMI line-of-sight magnetograms which were available for near-real-time forecasting. In 2015, it was improved by using HMI vector magnetograms. This tool is presently being used and supported by NASA/Space Radiation Analysis Group. Dr. Falconer continues to study how to improve predictions of Solar Drivers of space weather.

He was awarded NASA Silver Snoopy award in 2013 for his work on MAG4. MAG4 received Honorable Mention in NASA's 2016 Software of the Year Competition and won the MSFC 2016 Software of the Year Competition. He has published articles and made presentations about his research, and improvements made in predicting space weather utilizing MAG4.



Jay Kurowsky,

Jay Kurowsky, President and CEO of Aleta Technologies, has extensive experience via careers as a U.S. Army civilian and as an officer in both large and small corporations. This experience includes serving as the Chief of the Information Operations Division of the Communications-Electronics Command. He built this Division from his own concept to be the Army's largest provider of security Certification and Accreditation and other services where he supported over 1,000 systems across the Army. While performing in that role, he served as the Army's representative for the Software Protection Initiative/Anti-Tamper Technical Integrated Product Team, served as the Designated Approving Authority representative for the CIO/G-6 of the Army for the Army's tactical communications backbone, and advised the Office of the Secretary of Defense on malicious software code. He also served as the Chief Information Officer and Senior Information Assurance Manager of the Communications and Electronics Research, Development, and Engineering Center.

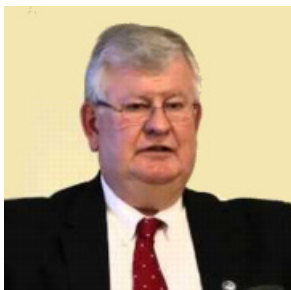
While a candidate for the Senior Executive Service, he left civil service to assume a position as the Vice President of Huntsville Operations for Sensor Technologies Incorporated (STI), where he served as one of STI's five top executives. After acquisition of STI by ManTech International Corporation, he served as Vice President of IT Engineering before leaving to found Aleta Technologies. Jay is a Certified Information Systems Security Professional (CISSP) and a Black Belt in Lean Six Sigma. He has earned several Army medals and various other awards and commendations.



Dr. Tommy Morris

Dr. Tommy Morris currently serves as Director the Center for Cybersecurity Research and Education (CCRE) and Associate Professor of Electrical and Computer Engineering at the University of Alabama in Huntsville. Dr. Morris received his Ph.D. in Computer Engineering in 2008 from Southern Methodist University in Dallas, TX with a research emphasis in cyber security. His primary research interests include cyber security for industrial control systems and electric utilities and power system protective relaying. His recent research outcomes include vulnerability and exploit taxonomies, intrusion detection systems, virtual test beds, and a relay setting automation program used by a top 20 investor owned utility. He has authored more than 50 peer reviewed research conference and journal articles in these areas.

Dr. Morris's research projects are funded by the National Science Foundation, Department of Homeland Security, Pacific Northwest National Laboratory, NASA, the US Army Corps of Engineers Engineering Research Development Center (ERDC), Pacific Gas and Electric Corporation, and Entergy Corporation. Prior to joining UAH, Dr. Morris served as of Director of the Critical Infrastructure Protection Center (CIPC), Associate Director of the Distributed Analytics and Security Institute (DASI), and Associate Professor of Electrical and Computer Engineering at Mississippi State University from 2008-2015 and worked at Texas Instruments (TI) for 17 years in multiple roles including circuit design and verification engineer, applications engineer, team leader, and program manager.

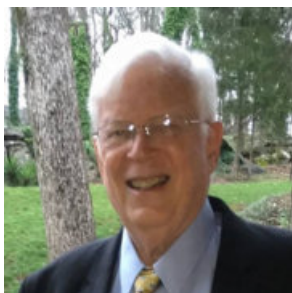


Gale Nordling

Mr. Nordling is the President and CEO Emprimus. Mr. Nordling has 35 years' experience as an engineer, risk manager, risk management and insurance consultant, and expert witness. He has been involved with the preparation, negotiation, settlement, litigation, arbitration, mediation, and insurance coverage of over \$500 millions of claims and contract disputes

for engineers, contractors, suppliers and owners including universities, hospitals, states, airlines, casinos, and utilities.

Mr. Nordling has been employed by a nuclear utility, a disaster recovery company, national construction company, and international risk management firm. Mr. Nordling served on a national committee to create a national pooled inventory and management of safety related spare equipment for all nuclear plants. The disaster recovery company included some of the largest upper Midwest companies including ConAgra, Cargill, Northwest Airlines, National Car, Gelco, Minnegasco, Northern States Power, and various insurance and banking institutions.



Dr. Steven Smith

Dr. Steven P. D. Smith, Ph.D. is a retired physicist with careers spanning 40+ years at Redstone Arsenal's Army Missile Research, Development, and Engineering Center (AMRDEC) starting as research aerospace engineer/general engineer working on diverse projects from various Army field missile systems, ballistic missile defense propulsion and propellant technology, nuclear effects research on propellants and propulsion systems to chemically-pumped and nuclear-pumped lasers.

At his last position, Dr. Smith was a Senior Research Physicist at Georgia Institute of Technology Research Institute on loan to U.S. Army to serve as Senior Technical Advisor to the Director of AMRDEC, and later as Deputy Director for Special Projects. Dr. Smith supported the AMRDEC Director in a wide variety of functions and assignments, including: Development and review of AMRDEC strategic plan; conducting evaluations and analyses of concepts to assure that AMRDEC programs are consistent with warfighter requirements; Harmonizes and unifies investment and partnership strategy; and planning and execution of research, development, and engineering programs. Dr. Smith's prior experiences at AMRDEC also included served as Acting Director of the Advanced Systems Directorate, and Chief of the Technology Integration Division where he was responsible for the synthesis and defense of AMRDEC's research, exploratory development, and advanced development programs.

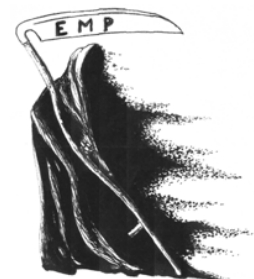
Dr. Smith received his Ph.D. in Nuclear Engineering Sciences with an emphasis in Propulsion Systems from 1967 University of Florida, Gainesville. M.S.E. in Engineering Sciences with an emphasis in Fast Neutron Moderation from University of Florida, Gainesville, and B.S. in Mechanical Engineering from University of Florida, Gainesville. Dr. Smith was the recipient of the Department of the Army Meritorious Civilian Service Award in 2001, and MICOM Commander's Award for Civilian Service in 1980. Dr. Smith served as General Chairman of the National Joint

Army, Navy, NASA, and Air Force (JANNAF) Meeting in 1976, 1981, and 1986. Technical Chairman, American Nuclear Society Aerospace Meeting in 1971. Dr. Smith has over 23 Open Literature Publications and eight Government Classified Publications.

SELECTED RECOMMENDED READING LIST

- *Blackout Wars*. Dr. Peter Vincent Pry. Task Force on National and Homeland Security, 2011.
- *One Second After*. William R. Forstchen. Tor Books, 2011.
- *One Year After*. William R. Forstchen. Tor Books, 2011.
- *Lights Out: A Cyberattack, A Nation Unprepared, Surviving the Aftermath*. Ted Koppel. Crown Pub., 2011.
- *EMP Survival: How to Prepare Now and Survive, when an Electromagnetic Pulse Destroys Our Power Grid*. Larry and Cheryl Poole. CreateSpace Independent Publishing Platform Pub., 2011.
- *EMP Survival: 36 Useful Survival Skills for Emergency Preparedness in a Case of Electromagnetic Pulse (electromagnetic pulse protection, survival tactics, survival handbook)*. Laura Campbell. CreateSpace Independent Publishing Platform Pub., 2015.
- *Preparedness for EMP Attack and Solar Storms: A Survival Guide to EMP Weapons, Electromagnetic Pulse, Solar Storms, Solar Flares and Carrington Events*. Steve Rayder. CreateSpace Independent Publishing Platform, 2015.
- *EMP Survival: The Ultimate EMP Survival Guide! How to Survive Electromagnetic Pulse. Plan, Protect and Prepare for Grid Down Scenario*. James Will. CreateSpace Independent Publishing Platform, 2015.
- *Disaster Preparedness for EMP Attacks and Solar Storms (Expanded Edition)*. Arthur T. Bradley. CreateSpace Independent Publishing Platform, 2012.
- *Electromagnetic Pulse (EMP): Threat to Critical Infrastructure. Infrastructure Protection, and Security Technologies of the Committee on Homeland Security House of Representatives Subcommittee on Cybersecurity*. CreateSpace Independent Publishing Platform, 2014.

Additional publications will be posted on www.PowerGridDefense.org



SCHEDULE: DAY 1. SEPTEMBER 20, 2016

AFTERNOON		USSRC EDUCATION & TRAINING FACILITY	
Session 1		The Threat	
12:00 pm		Welcome and Why a Space Group Advocates Power Grid Defense. <i>Greg Allison, , Alabama Power Grid Defense Conference Chair</i>	
12:10 pm		Full Spectrum Power Grid Threats - What We Must Do. <i>Dr. Peter V. Pry, Task Force on National and Homeland Security</i>	
Session 2		Cyber Attacks on the Power Grid	
1:00 pm		Power Grid Cyber Security. <i>Jay R. Kurowsky, President & CEO Aleta Technologies, Inc.</i>	
1:25 pm		Power Grid Cyber Security. <i>Dr. Tommy Morris, Dir, Center for Cybersecurity Research & Education, UAH.</i>	
1:50 pm		Break	
Session 3		Solar Coronal Mass Ejections	
2:00 pm		CME Panel Discussion. <i>Dr. David Falconer - UAH/NASA Solar Research Scientist</i> <i>Mitzi Adams, Solar/Solar Terrestrial Scientist, NASA</i>	
2:50 pm		Break	
Session 4		EMP – The Toughest Threat	
3:00 pm		EMP Physics and Effects. <i>Dr. Steven Smith, US Army (Ret), EMP Expert</i>	
3:30 pm		Protecting the Grid from EMP. <i>Gale Nordling, EMPrimus</i>	
4:00 pm		What Must Be Done to Protect the Grid. <i>Brig. Gen. Ken Chrosniak (Ret), EMPact America</i>	
4:30 pm		Potential EMP Impacts on Nuclear Power Plants <i>Brig. Gen. Ken Chrosniak and Greg Allison</i>	
Session 5		Closing Remarks	
4:50 pm		Closing Remarks – A Call to Action. <i>Dr. Peter V. Pry and Greg Allison</i>	
EVENING		MARRIOTT BALLROOM	
6:00 pm		Open to All. Networking & Social (Cash Bar). Marriott Ballroom Foyer	
7:00 pm		Special Evening Meal Function. Defending Our Power Grid. Ambassador Henry F. Cooper, Chairman of the Board of High Frontier. Former Director of SDIO.	

SCHEDULE: DAY 2. SEPTEMBER 21, 2016

Open to All Who Are Interested (No Registration Necessary)

MORNING	MARRIOTT ENTERPRISE MEETING ROOM
8:30 am	Legislation and Regulations for Alabama to Harden its Grid, How to get these Items through the Legislature, Public Services Commission, and Governor's Office
11:00 am	Lunch (On your Own)
1:00 pm	Forming an Alabama Power Grid Advocacy Group, Political Action Network, and plans to get proposed legislation, and regulations approved.

ACKNOWLEDGEMENT

The chair would like to thank the following individuals for making this event possible.

- Dr. Deborah E. Barnhart, CEO, U.S. Space and Rocket Center.
- Robert Bijvoet, Vice President, HAL5.
- Col. Victor Budura (U.S. Air Force, Ret), HAL5 and Armed Forces Communications and Electronics Association.
- Dr. Bill Carswell, Executive Director, Energy Huntsville Initiative.
- Thomas Gates, Dynetics, Inc.
- Dr. Walter Hammond, HAL5.
- CPT Edward B. Kiker (U.S. Army, Ret), HAL5/APGDC/Kepler Space Institute.
- Dr. Yohon Lo, President, HAL5.
- Evelyn Sabino, HAL5.
- Robin Scott, Membership Chair, HAL5.

