



POWER GRID DEFENSE SYMPOSIUM 2018

LEARN. PROTECT. ADVOCATE.
SAVE THE GRID – SAVE THE FUTURE

August 9-12, 2018

EMBASSY SUITES HOTEL. HUNTSVILLE, ALABAMA



EVENT HOSTED BY



Huntsville Alabama L5 Society

A Chapter of the National Space Society

FROM THE SYMPOSIUM CHAIR

Dear Power Grid Defense Symposium Attendee:

The Huntsville Alabama L5 Society (HAL5), its Power Grid Defense Committee, U.S. Congressman Mo Brooks, and Huntsville Alabama Mayor Tommy Battle welcome you to the 2018 Power Grid Defense Symposium. This symposium is not just another event to hear people talk. Our intent is to initiate activities at this event to get Alabama, the surrounding states, and the U.S. to harden their power grids.

Days 1 and 2 of our symposium will cover sessions 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 1 features an in-depth examination of power grid cyber-security, missile defense, and the nature of Electromagnetic Pulse (EMP) and what we need to do to harden the grid. The Day 1 Thursday night dinner 'Space Force - YES!!!' will cover the U.S. Space Force and how it can serve to defend our power grid against EMP attacks.

Day 2 of our symposium begins with a threat overview of nuclear power plant risk during grid-down situation, and how to perform a 'Black Restart' of these plants. Our CME panel will provide an in-depth look at what solar Coronal Mass Ejections (CMEs) are, and their power. The following sessions will cover how the Emergency Management Agencies (EMAs) will deal with grid-down, and an EMP Commission progress report on Washington activities.

Day 3 has a heavy focus on Civil Defense, Emergency Management, and Prepping. The day starts with a session for why prepping alone is not good enough due to the threat from nuclear power plants, and especially their spent fuel rod cooling pools. This session will cover why something must be done about this to give preppers a fighting chance to survive. The following session will cover how to 'black-start' a nuclear power plant in a grid-down situation. They cannot restart themselves. There will be an overview of the full spectrum threat of a grid-down and what can be done about it. Sessions on prepping will be followed by a prepper panel discussion. Then we will look further into Emergency Management roles, Energy Huntsville's role in resilient grid development, and into hacking the grid by one of the nation's top hackers. We will then review the activities in a number of states to see what lessons learned we can apply. Day 3 will be closed out with a call to action.

Day 4 of our symposium will be an Action Planning Workshop where we will consider legislation, regulations, plans and procedures for Alabama and surrounding states to harden their grids. 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. We also intend to initiate planning for a state-wide/regional multi-year grid-down exercise that assumes no outside help. Such an exercise in South Carolina proved to the local EMA and power grid community there just how vulnerable they truly were. This prompted Duke Power to initiate activities to harden their grid.

At some point (perhaps in this session) we will plan to formulate an Alabama power grid advocacy group, a political action network, and develop 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.

The Power Grid Defense Committee and I want to personally thank, our generous sponsors, supporters, U.S. Congressman Mo Brooks, Huntsville Mayor Tommy Battle for their support of this event. We also extend a special thank you to Brig. General Ken Chrosniak, Ambassador Henry 'Hank' Cooper, and Dr. Peter Vincent Pry and for the support and guidance they provided to us. We especially want to thank each of you for coming and supporting our great effort. We will be happy to work with each of you in the future.

May your lights always shine bright,

P.S. A PDF version of this program book can be found at our website, www.PowerGridDefense.org. Click on the Menu icon and then select 2018 Symposium Program book.

Gregory H. Allison

Founder, Huntsville Alabama L5 Society

Power Grid Defense Committee Chair

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OUR THANKS

The Symposium Chair would like to give sincere thanks to our sponsors who generously underwrote a major portion of our event. If after the symposium, you would like to make monetary contribution to our cause, please visit our website, www.PowerGridDefense.org, click on the Menu Icon and click on "Donation". Donations will be processed through the Huntsville Alabama L5 Society (HAL5), the host and parent organization of the Alabama Power Grid Defense Committee. Donations to HAL5/Power Grid Defense Committee is tax deductible to the extent permissible by law. HAL5 is a 501(c)(3) non-for-profit organization and is a chapter of the National Space Society (NSS).

PLATINUM LEVEL

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

Dr. Yohon Lo, Ph.D.

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2018 COMMITTEE MEMBERS

Greg Allison, Edward Kiker, Yohon Lo, Tim Travis, Tony Llewellyn, Robert Moore, Mike Blizzard, David Newsome, Dan Brown, and James Howe.

THE BLACK SKY EVENT FILM

The "If the power grid goes down tomorrow and there is no electricity... what will you do?" That's the premise of a new documentary film is being produced by David Womick and Earthling Films. David and his crew are here interviewing and documenting our grassroots effort of hardening our power grid. We welcome David and his crew to the event, and wish him great success in making the documentary. We are looking forward to the final product! Please check out the pre-production trailer of the film at <http://theblackskyevent.com>



Here is the director, David Womick's comment about the film taken from his website: theblackevent.com.

A few years ago a friend of mine gave me a copy of William Forstchen's novel One Second After. I had never considered that the grid could go down or what life would be like without electricity.

As a parent of young children, I became concerned enough to begin preparing for a grid down event, and have a plan to be in a safer place than the crowded suburban area that we call home.

I wanted to learn more on the probability of an event like this occurring, so I downloaded a copy of the 2008 report from the EMP Commission, established by Congress in 2000 to look at the threat of a Nuclear EMP or a solar storm to our critical infrastructure. What I found in their report was disturbing. The system that powers our country is extremely vulnerable to attacks from other countries and from Mother Nature herself.

For the next few years I monitored the situation, reading reports issued and testimony presented. Around 2013, a new and even more likely threat to the grid emerged, a cyberattack. Because this was seen by most as a more immediate and likely threat, the attention of the power industry and the government seemed to shift to cyberspace. Nuclear EMP became seen as low probability, and a solar storm became defined as something other than a catastrophic event.

I fully expected that because of the magnitude of the problem and evidence, the federal government would get together with the power utilities that own the grid. At a minimum I thought they would demand companies protect the grid's most vulnerable components from EMP related threats as recommended by the EMP Commission.

It never happened.

In 2017 Congress disbanded the EMP Commission. Despite the evidence and reality of an EMP threat presented by the Commission over 17 years, Congress has taken little meaningful action to protect the grid.

As I watched the final testimony of EMP Commission members and supporters, I was moved by their call for grass roots and community action to bring awareness to this problem and the necessity of moving outside of Washington to find a solution. Our citizens need to know the truth that unfortunately has fallen on deaf ears in the halls of our government.

I have been in the media production business for over thirty years now, creating commercial video content and documentaries. When I asked myself how I could make a difference and bring awareness to this situation, the answer was obvious: make a documentary.

The Black Sky Event was born.

*Dr. Ry
(540-894-5742)
301-481-4715*



SCHEDULE

Day 1	Thursday, August 9. Big Spring Ballroom C and D
Session 1	The Threat
08:00 am - 08:05 am	Welcome and Introduction of Congressman Mo Brooks and Mayor Tommy Battle Greg Allison, Symposium Chair
08:05 am - 08:10 am	Welcome to the Power Grid Defense Symposium Congressman Mo Brooks, U.S. Representative Alabama 5th Congressional District Vice Chair, Subcommittee on Space; Subcommittee Member, Energy Subcommittee
08:10 am - 08:15 am	Welcome to the Power Grid Defense Symposium Mayor Tommy Battle, City of Huntsville, Alabama
08:15 am - 08:20 am	Why a Space Group Advocates Power Grid Defense Greg Allison, Symposium Chair
08:20 am - 09:00 am	Full Spectrum Power Grid Threats - What We Must Do Brigadier General Ken Chrosniak (U.S. Army, Retired), EMPact America
09:00 am - 09:10 am	Break
Session 2	Cyber Attacks on the Power Grid
09:10 am - 09:50 am	Power Grid Cyber Security Dr. Tommy Morris, Director of the Center for Cybersecurity Research and Education, University of Alabama Huntsville
09:50 am - 10:30 am	Power Grid Cyber Security Jay R. Kurowsky, President and CEO Aleta Technologies, Inc.
10:30 am - 11:10 am	Power Grid Cyber Security Dr. Raziq Yaqub, Electrical Engineering and Computer Science, Alabama A&M University
11:10 am - 11:50 am	Hacking the Grid Gregory "mobman" Hanis, Principal Research Scientist, MeasuredRisk, and Cyber Security Consultant
11:50 am - 01:00 pm	Lunch [Big Spring Ballroom A and B]
Session 3	Missile Defense for Our Power Grid
01:00 pm - 01:45 pm	BMD/Space Force and EMP Threats Ambassador Henry F. Cooper, Former Director of the Strategic Defense Initiative Organization (SDIO). High Frontier
01:45 pm - 02:00 pm	Break
Session 4	Electro Magnetic Pulse - The Toughest Threat
02:00 pm - 03:00 pm	EMP Physics and Effects Dr. Steven Smith, US Army EMP Expert Retired ✓
03:00 pm - 04:00 pm	Protecting the Grid from EMP and GMD Dr. Fair Faxvog, EMPrimus

04:00 pm -	What Must Be Done to Protect the Grid
05:00 pm	Brigadier General Ken Chrosniak (U.S. Army, Retired), EMPact America
05:00 pm -	Audience Q&A
05:30 pm	Various Speaker as Available
Dinner and Social [Big Spring Ballroom A and B, and Pre-Function Area]	
06:00 pm -	Cash Bar and Social
07:00 pm	
07:00 pm -	Space Force – YES!!! (Special Dinner Event)
09:30 pm	Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security

Day 2	Thursday, August 9. Big Spring Ballroom C and D
Session 5	Potential EMP Impacts on Nuclear Power Plants
08:00 am -	Threat Overview and Nuclear Power Plant Risk During Grid Down
09:00 am	Greg Allison, Symposium Chair
09:00 am -	Potential EMP Impacts on and Black Restart of Nuclear Power Plants
09:45 am	Brigadier General Ken Chrosniak (U.S. Army, Retired), EMPact America
09:45 am -	Break
10:00 am	
Session 6	Solar Coronal Mass Ejections
	CME Panel Discussion
10:00 am -	- Mitzi Adams, MSc, Solar and Scientist, NASA
11:00 am	- Dr. David McKenzie, Solar Scientist, NASA
	- Dr. Craig (Ghee) Fry, Solar Scientist, NASA
11:00 am -	Networking Lunch (Included) [Big Spring Ballroom A and B]
12:00 pm	
Session 7	Emergency Provider Grid Down Response
12:00 am -	How to Respond with No Outside Assistance (No Cavalry)
12:45 pm	Jonathan W. Gaddy - EMA Director Calhoun County (Alabama)
12:45 pm -	How to Respond with No Outside Assistance (No Cavalry)
01:15 pm	Brigadier General Ken Chrosniak (U.S. Army, Retired), EMPact America
01:15 pm -	Civil Defense - How to Respond with No Outside Assistance (No Cavalry)
02:00 pm	Command Sergeant Major Michael Mabee, Author of The Civil Defense Book: Emergency Preparedness for a Rural or Suburban Community
02:00 pm -	Break
02:15 pm	
Session 8	Protecting the Grid
02:15 pm -	EMP Progress Report on Washington
03:15 pm	Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security
03:15 pm -	Targeting the Energy Infrastructure by State-Sponsored Enemies
04:15 pm	Darren Mott, Supervisory Special Agent, Counterintelligence Program, Birmingham Division of the FBI

04:15 pm -	Audience Q&A
04:45 pm	Various Speaker as Available
Session 9	Closing Remarks
04:45 pm -	A Call to Action
05:15 pm	Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security

Day 3 Saturday, August 11. Big Spring Ballroom C and D

Session 10	Potential EMP Impacts on Society
08:00 am -	Why Prepping Will Not Be Good Enough by Itself - Nuclear Power Plants
08:20 am	Greg Allison, Symposium Chair
08:20 am -	Preparedness for EMP Attacks and Solar Storms
09:00 am	✓ Dr. Arthur T. Bradley, Engineer and Author of Handbook to Practical Disaster Preparedness for the Family
09:00 am -	Full Spectrum Power Grid Threats - What We Must Do
09:45 am	Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security
09:45 am -	Break
10:00 am	
Session 11	Prepping - How to Protect Yourself from an EMP Attack or CME
10:00 am -	Practical Disaster Preparedness for the Family
10:45 am	✓ Dr. Arthur T. Bradley, Engineer and Author of Handbook to Practical Disaster Preparedness for the Family
	Prepper Panel Discussion
	✓ Dr. Arthur T. Bradley, Engineer and Author of Handbook to Practical Disaster Preparedness for the Family
10:45 am -	- Edward Kiker, Symposium Committee Member
12:00 pm	✓ Command Sergeant Major Michael Mabee, Author of The Civil Defense Book: Emergency Preparedness for a Rural or Suburban Community
	- Tim Travis, Symposium Committee Member, EMI Subject Matter Expert
	✓ Brigadier General Ken Chrosniak (U.S. Army, Retired), EMPact America
12:00 pm -	Lunch (On Your Own)
01:00 pm	
Session 12	Emergency Provider Restart of Society After Grid Down
01:00 pm -	All Roads Lead to Civil Defense
01:35 pm	✓ Command Sergeant Major Michael Mabee, Author of The Civil Defense Book: Emergency Preparedness for a Rural or Suburban Community
01:35 pm -	How Huntsville Can Secure and Restart the Community During a Long-term Nationwide Grid-down
01:50 pm	Bill Sizemore, City of Huntsville
01:50 pm -	Energy Huntsville's Role in Resilient Grid Development
02:10 pm	Roger Herdy, C.E.M, Government Energy Solutions and Energy Huntsville
Session 13	Hack the Power Grid
02:10 pm -	Hack the Grid
02:40 pm	Gregory "mobman" Hanis, Principal Research Scientist at MeasuredRisk and Cyber Security Consultant.

02:40 pm - 02:55 pm	Break
Session 14	States Efforts to Harden the Grid
02:55 pm - 03:30 pm	Coalition to Secure the Grid Tommy Waller, Director for Special Projects, Center for Security Policy
03:30 pm - 04:00 pm	What is South Carolina Doing Ambassador Henry F. Cooper, Former Director of the Strategic Defense Initiative Organization (SDIO). High Frontier
04:00 pm - 04:30 pm	What is Louisiana Doing Henry Newton, P.E.
04:30 pm - 05:00 pm	What is Alabama Doing Greg Allison, Symposium Chair
05:00 pm - 05:30 pm	What are Other States Doing Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security
Session 15	Closing Remarks
05:30 pm - 06:00 pm	A Call to Action Dr. Peter V. Pry and Greg Allison
Day 4	Sunday, August 12. Redstone Boardroom (Second Floor)
8:00 am - 12:00 pm	Legislation and Regulations for Alabama to Harden its Grid, how to get these Items through the legislature, Public Services Commission, and Governor's Office

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 has written numerous books on national security issues. Dr. Pry often appears on TV and radio as an expert on national security issues, including Fox News' Mark Levin's *"Life, Liberty & Levin."* 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, MSc



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.

Gregory H. Allison



Gregory H. Allison has been active in the aerospace community as an electrical engineer, systems engineer, system safety engineer, project/program manager, team lead, and an avid space activist for 40 years. He designed the architectural layout of the power and data systems distribution for the International Space Station's Nodes 2 and 3. He has designed power and control systems for industrial equipment, and worked on M1 Abrams tank and F-15 avionics. For the Past 15 years Mr. Allison has been performing avionics system safety for NASA as a contractor employed by Bastion Technologies Incorporated.

In 1994 Mr. Allison was the founding Program Manager for the Huntsville Alabama L5 Society (HAL5) High Altitude Lift-Off (HALO) Program. He led efforts that developed and launched hybrid rockets developed in garages from balloons at the edge of space into suborbital trajectories. Some of these balloons that carried the rockets up were launched from ships in the Gulf of Mexico. These activities were conducted with part time help on a shoestring budget. This caused Mr. Allison to become quite concerned about the types of missions that terrorist could one day launch.

Mr. Allison was a survivalist prepper since he was 14 in 1974 when he started studying bushcraft by learning about wild edibles, and primitive camping. When Mr. Allison was 17 he built a muzzle loading 50 caliber Hawkins rifle. He runs an organic market garden and worm farm on the side. Mr. Allison determined

that he could not as a prepper expect to survive a grid down scenario so he decided to do something about it. He formed the Power Grid Defense Committee. He is the chair of this event. He also chaired the 2016 event in Huntsville. Mr. Allison is drawing on his 10 years of experience and Chairman of the National Space Society's Policy Committee to build an advocacy base to support hardening the power grid.

Dr. Arthur T. Bradley, Ph.D.



Dr. Arthur T. Bradley is an Army veteran and father of four. He received his B.S., M.S., and Ph.D. degrees in Electrical Engineering from Auburn University in 1990, 1992, and 1999 respectively. He joined NASA in August of 2003 and currently serves as the Head of the Electronic Systems Branch. Dr. Bradley's first book, the "Handbook to Practical Preparedness for the Family" was widely successful, praised for its depth of research and practical advice. Future works included his "Preppers Instruction Manual" and "Disaster Preparedness for EMP Attacks and Solar Storms."

Dr. Bradley is also the author of a bestselling post-apocalyptic series, titled, "The Survivalist." Having lived across the United States, Dr. Bradley writes from personal experience about preparing for a variety of disasters, including earthquakes, tornados, hurricanes, floods, house fires, and massive snowstorms. He prescribes to the philosophy that preparedness should always be motivated by love and concern, never by fear and paranoia. His practical approach to family preparedness has received widespread acclaim from individuals, emergency preparedness consultants, and religious organizations.

Brigadier General Ken Chrosniak (U.S. Army, Retired)



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. Craig D. "Ghee" Fry, Ph.D.



Dr. Craig D. "Ghee" Fry is Assistant Manager of NASA Marshall Space flight Center's (MSFC) Heliophysics and Planetary Science Office, and internationally recognized expert in solar-wind and Coronal Mass Ejection (CME) numerical modeling and forecasting. His current research interests are focused on space weather and ionospheric physics, and the transition of research into operations (R2O). Prior to his present position, Ghee was a NASA technical manager and subject matter expert advising MSFC leadership on advancing orbital and sub-orbital solar and ionospheric science missions. Career highlights include leading a service-disabled

veteran-owned small business conducting space weather research, development and transition of research to Department of Defense (DoD) operations, including the first operational DoD CME forecast model. As principal investigator of multiple heliophysics and planetary science research projects, he has authored or co-authored over 80 peer-reviewed science papers and presentations. Ghee is a 20-year veteran of the United States Air Force, retiring in 1993 at the rank of Lt Colonel. While on active duty, he served as weather/space weather observer, forecaster, liaison officer, staff weather officer, and unit commander, providing operational support to National programs, USAF strategic forces, presidential flights, and NASA Apollo-Soyuz and Space Shuttle missions. Ghee is an Eagle Scout and avid Amateur Radio Operator.

Jonathan W. Gaddy



Jonathan Gaddy is the Emergency Management Agency Director for Calhoun County, Alabama, where he has worked since 2007. Calhoun County is a dynamic community, and the EMA provides services for over 100,000 residents, seven municipalities, and two military installations, with three college campuses and numerous schools and industries.

Mr. Gaddy joined the EMA as a WMD planner under the DoD/FEMA Chemical Stockpile Emergency Preparedness Program (CSEPP). Mr. Gaddy coordinated emergency planning efforts and federally evaluated disaster exercises related to chemical warfare agents, focusing on healthcare and hazardous materials, in addition to supervising watch center operations and coordinating responses to natural and man-made emergencies. In 2011, Mr. Gaddy was named director of the Calhoun County EMA and tasked with a strategic transformation of the community's emergency management system. In closing out the CSEP Program, he supervised the transition of emergency management operations in Calhoun County from a large, unitary and federally-supported program to a leaner and more integrated locally-supported program. He has also served on numerous boards, committees, and special projects and is a past-president of the Alabama Association of Emergency Managers.

During his career, Mr. Gaddy has responded to federally-declared disasters both in Alabama and around the nation, in addition to participation in national level exercises and workgroups. In addition, Mr. Gaddy serves on a federal Disaster Medical Assistance Team, and has worked as an instructor for the National Disaster Medical System. He is also an adjunct instructor in Jacksonville State University's Emergency Management Department. Mr. Gaddy studied geography as an undergrad at JSU and holds a master's degree

in security studies (Homeland Security and Defense) from the U.S. Naval Postgraduate School, where his research focused on national security strategy analysis using actor-network theory.

Gregory “mobman” Hanis



Gregory “mobman” Hanis is the original author of SubSeven, the Remote Administration Tool (RAT) software. Greg has been featured in the Rolling Stones, and CBS Miami in various occasions. Active in the cyber community since his teenage years, he sponsors and volunteers CyberPatriot as a way to help aspiring young cyber professionals avoid costly mistakes he knows all too well. He is a patent holder and former start-up entrepreneur nominated for the North Alabama’s 2017 People’s Choice awards. Greg gives talks and trainings around the country sharing his knowledge with the public and private sectors. Former board member of SFISSA (South Florida Information Systems Security Association), he founded and co-leads HACKBAMA as a way to encourage and cultivate local cyber talent. He has competed in many cyber competitions, recently took 2nd place in the professional division at the Von Braun Center “Cyber Cup” which was held during the National Cyber Summit.

Roger Herdy, C.E.M.



Roger Herdy started his career at the Air Force’s Arnold Engineering Development Center, where he worked in the Special Projects group testing emerging aerospace technologies. He then joined the contractor community at NASA MSFC, where he managed the design and development of test facilities and served as a test engineer. He has managed diverse programs for both Commercial and Government customers. He holds three patents in propulsion, and multiple patents for advanced oxidizers pending. He holds a BS in Mechanical Engineering from the University of Kentucky and a MS in Engineering Management from the University of Tennessee. He currently is the Director of Business Development at Government Energy Solutions in Huntsville, Alabama, and is part of the Executive Leadership Team for Energy Huntsville. He earned a Certified Energy Manager registration through the Association of Energy Engineers.

CPT. Edward B. Kiker (U.S. Army Retired)



Edward Kiker earned his Bachelor of Arts in 1970 in Lunar Geology/Military Science at Harvard University, MA with a U.S. Army ROTC scholarship. He was an active duty Engineer Officer for four years in Alaska, Korea and Virginia, and an Armor Officer with the Alaska Army National Guard for four years.

He joined the US Army Civil Service as a Natural Resources Specialist at Fort Greely, Alaska 1975-1983, and was given the top award for Outstanding Individual Contribution to the Army Natural Resources Program world-wide in 1979. From 1983-1987 he volunteered with Project High Frontier as Alaska State Director to encourage the development of a National Ballistic Missile Defense System, and was selected in 1987 to design the original national ballistic missile defense system with the U.S. Army Space Institute. He represented the State of Alaska at the 1982 Second United Nations Outer Space Conference in Vienna, Austria, giving the lead presentation on Lunar Mining. In 1994 he represented the Army Space institute and the U.S. Army Corps of

Engineers at the International Lunar Workshop in Beatenberg, Switzerland, and at the International Conference on Mining the Moon for Helium-3 at Madison, Wisconsin.

In 2000 he moved to the Office of the Chief Scientist for Operations, U.S. Army Space and Missile Defense Command/Army Forces Strategic Command in Colorado Springs, and in 2006 moved to the Office of the Chief Technology Officer in Redstone Arsenal. He was briefly a NASA Space Architect in 2009, designing and building a full-scale mock-up lunar radiation shelter in Arizona for astronaut training for our return to the Moon. He retired from the Army Civil Service in 2014 and returned to Project High Frontier as a volunteer for power grid defense and space commercialization issues. Mr. Kiker is also a member of the Alabama Power Grid Defense Committee. He continues to design and build engineering models for Lunar and Mars surface operations.

Jay Kurowsky



Jay Kurowsky, President and CEO of Aleta Technologies, has 22 years' experience in cybersecurity/Information Security (INFOSEC), including 21 years' experience in leading high-performing cybersecurity/INFOSEC organizations. This experience includes serving as an Army Acquisition Corps member and a Vice President of a large, publicly-traded corporation. In these roles, he has provided cybersecurity support to over 1,000 systems. He has advised the Pentagon on such cybersecurity issues as malicious content in commercial software and security accreditation. He has served as the alternate Army representative for

development of one of the overlays for Risk Management Framework (RMF) and served as the Army's representative for Software Protection/Anti-tamper. In 2011, Jay founded Aleta Technologies which provides cybersecurity support to the Department of Defense, numerous global corporations, and other customers, with particular expertise in control systems and research and development in Cyber Electromagnetic Activities (CEMA). Jay has a Bachelor of Science degree in Mechanical Engineering, a Physics Minor, and a Masters' in Management/Information Systems (4.0 GPA). Jay is a Certified Information Systems Security Professional (CISSP) and has a Black Belt in Lean Six Sigma. He has earned three Army medals and various other awards and commendations.

Command Sergeant Major Michael Mabee



Michael Mabee has worked as an urban emergency medical technician and paramedic, a suburban police officer, and in the federal civil service. Michael received his B.A. in English from Southern Connecticut State University in 1994 and is a graduate of the United States Army Sergeants Major Academy, Fort Bliss, Texas.

Michael has a great deal of experience – both overseas and in the U.S. – working in worlds where things went wrong. He is a veteran of both Persian Gulf wars, serving with the U.S. Army as a Platoon Sergeant in Operations Desert Shield, Desert Storm, and Provide Comfort. In his most recent deployment, Michael served as a brigade level Command Sergeant Major in Iraq. He also participated in two humanitarian missions to Guatemala. He retired from the U.S. Army Reserve in 2006 at the rank of Command Sergeant Major (CSM). Michael was decorated by both the U.S. Army and the federal government for his actions on 9/11/2001 at the World Trade Center in New York City. In sum, quite like Forrest Gump, he is generally at the right place at the wrong time.

Michael has studied and written extensively on the vulnerabilities of the U.S. electric grid to a variety of threats. He has participated in federal rulemaking related to grid security and has written two books about how communities can prepare for and survive a long-term power outage. He continues to write and speak about emergency preparedness for a long-term blackout.

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.

Darren J. Mott



Darren J. Mott is the Supervisory Special Agent (SSA) for the Counterintelligence Program for the Birmingham Division of the FBI. This program works with other USIC partners to detect, deter, and neutralize the threat of hostile nation intelligence services active in Northern Alabama. SSA Mott entered on duty with the FBI in 1999 and has worked both the counterintelligence and cyber threats during his career. SSA Mott has worked in the Charlotte and Cleveland Field Divisions and worked at the national program level at FBI HQ.

SSA Mott was responsible for building a working relationship between the FBI and Russian Federal Security Service to combat the cyber threat and he created the first national level program blending the counterintelligence and cyber disciplines within the FBI. The Birmingham Division operates its counterintelligence program out of the Huntsville Resident Agency and has primary responsibility for mitigation of counterintelligence and cyber threats present in Cummings Research Park. SSA Mott holds two Masters Degrees, the most recent, obtained in 2018, being in Cybersecurity Policy and Risk Analysis.

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.

Bill Sizemore



Bill joined the staff of Huntsville-Madison County EMA in January 2000. He holds a BBA degree in accounting from Athens State University. Bill also serves as a member of the North Alabama Incident Management Team and as 2nd Vice-President of the Alabama Association of Emergency Managers and has participated in eight presidentially declared disasters.

Tim Travis



Brought up to be self-reliant, as a young man was doing activities such as hunting, camping and tanning hides. Today he processes his own meat (whether from those he raises or takes through hunting) and lives in a family in which gardening and the art of canning has been a way of life for generations. Interests include; firearms, shooting, reloading, wine making, hunting, self-defense training, prepping and improving his family's 40-acre farm. Has 30 years' experience as an electronics technician, 23 of those in the Electromagnetic Environmental Effects test field. For the past 2 years, he has devoted much of his free time informing people of the vulnerabilities to the electric power grid.

Tommy Waller



Tommy Waller is Director for Special Projects at the Center for Security Policy. Tommy comes to the Center with more than 15 years as an Infantry Officer and Expeditionary Ground Reconnaissance Officer in the Marine Corps and service spanning multiple deployments to Afghanistan, Iraq, Africa, and South America. His assignments have ranged from conducting basic infantry operations, special operations and reconnaissance in combat environments to assignments in staff planning, logistics, training support and professional instruction. His formal education includes numerous military schools and colleges, a bachelor's degree in

International Relations from Tulane University and executive education in high stakes negotiation from the Wharton School.

As Director for Special Projects, Tommy performs a wide range of duties for the Center for Security Policy. These duties include educating policymakers at the federal level in all branches of government and working daily with renowned national security experts to help provide those policymakers an unconstrained analysis of the current threat environment along with workable policy solutions to address these threats. At a time when some state-level policymakers might falsely assume that "national security is a federal concern," Tommy also helps state and local-level officials realize that they too have a valuable stake in shaping policy so that it enhances and reinforces our national security.

In late 2014 Tommy was recruited as the youngest member of The Center for Security Policy's "Tiger Team" to use President Reagan's National Security Decision Directive 75 (a formerly Top Secret document containing his strategy to defeat Soviet communism) as the basis for which to craft a workable strategy for the United States to defeat its current global, ideologically driven, enemy: the Global Jihad Movement. Along with fifteen other well respected national security experts, Tommy helped draft the Secure Freedom Strategy. He now works diligently to educate state and national level policymakers as well as law enforcement on the nation's grave national security threats and some of the methods to defend against these threats, notably The Secure Freedom Strategy.

EXCELLENT POWER GRID RESOURCE REFERENCES

There are many more resources listed on our website, www.PowerGridDefense.org. If you have a suggestion, please email us at PGDC@HAL5.org. You can also search the Internet on “Power Grid Defense”, “EMP” or “electromagnetic pulse”. Website links were verified on August 5, 2018.

- *Blackout Wars*. Dr. Peter Vincent Pry. Task Force on National and Homeland Security, 2011.
- *Electromagnetic Pulse (EMP): Threat to Critical Infrastructure*. Report Number: H. Hrg. 113-68; House Hearing 113-68; Serial No. 113-68, US Govt Printing Office.
<https://www.hsdl.org/?view&did=754439>
- *Foreign Views of Electromagnetic Pulse (EMP) Attack*. Dr. Peter Vincent Pry. Report Number: S. Hrg. 109-30; Senate Hearing 109-30; Serial No. J-109-5 [Page. 46], US Govt Printing Office. <https://www.hsdl.org/?abstract&did=462461>
- *Electromagnetic Pulse (EMP)- The Ultimate Cyber Threat*. November 14, 2013. Ambassador R. James Woolsey. <https://securethegrid.com/2013/11/14/emp-the-ultimate-cyber-threat>
- *One Second After*. William R. Forstchen. Tor Books, 2011.
- *One Year After*. William R. Forstchen. Tor Books, 2011.
- *Disaster Preparedness for EMP Attacks and Solar Storms (Expanded Edition)*. Arthur T. Bradley. CreateSpace Independent Publishing Platform, 2012.
- *Think Ahead: Preparing for the Threat to Our Wired World*, The Heritage Foundation.
<http://shop.heritage.org/distribution-material/think-ahead-preparing-for-the-threat-to-our-wired-world9824.html>
- *Electronic Armageddon*. DVD, National Geographic.
<https://shop.nationalgeographic.com/products/electronic-armageddon-dvd-r>
- *Lights Out: A Cyberattack, A Nation Unprepared, Surviving the Aftermath*. Ted Koppel. Crown Pub., 2011.
- *The Civil Defense Book: Emergency Preparedness for a Rural or Suburban Community, 2nd Edition*. Michael Mabee. CreateSpace Publishing, 2017.



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