



## **ELECTROMAGNETIC TECHNIQUES AND TECHNOLOGY RESEARCH AND DEVELOPMENT**

The U.S. Navy is interested in exploring the use of High Power Electromagnetic techniques and technologies for purposes including anti-ship missile defense (ASMD), engine stopping, counter improvised explosive devices, and command and control warfare (C2W). Proposals that incorporate NRL capabilities are encouraged. Proposals for research and development into High Power Electromagnetic techniques and technologies may include, but are not be limited to:

- 1) Wideband (narrow-pulse) HPM sources. The sources of interest range from compact, lightweight devices that may be conventionally or explosively driven to larger, higher power devices that are suitable for shipboard installation.
- 2) Narrowband HPM sources. The sources of interest are generally high duty, relatively long pulse transmitters. Very high peak power, high average power, and high efficiency are all desirable.
- 3) Innovative conventional and non-conventional HPM based electronic attack (EA) techniques and systems including anti-missile defense applications, special operations, engine stopping, counter improvised explosive devices, command applications and C2W applications.
- 4) The use of RF transmission and backscatter to identify, determine properties, and/or locate potential threat devices.
- 5) Interactions of lasers with materials and electronics. Particular interest in femtosecond laser technology and atmospheric propagation.
- 6) Methods and technology for defending Naval systems from high power Electromagnetic attack.

- 7) RF countermeasure techniques and technologies for anti-ship missile defense.
- 8) Modeling and simulation ranging from device level simulation to campaign models that explore the utility of high power electromagnetic weapons.
- 9) Nearfield effects, sources, and antennas.
- 10) Ultrashort pulse laser technologies.

NRL more favorably will consider proposals offering initial increments comprised of short term studies (6-8 man-months) which then can be used to decide if the research deserves further investment.

Address White Papers (WP) to [BAAHPEM5745@nrl.navy.mil](mailto:BAAHPEM5745@nrl.navy.mil). Any specific security questions should be addressed in advance of proposal submission via separate discussion. Allow one month before requesting confirmation of receipt of WP, if confirmation is desired. Substantive contact should not take place prior to evaluation of a WP by NRL. If necessary, NRL will initiate substantive contact.