Objective
LMI seeks to conduct sponsored research with university partners that supports LMI’s mission of providing independent analysis and practical solutions to the challenges facing the federal government. The objective of this FY18 University Proposal Solicitation is to receive research proposals that investigate topics of critical interest to LMI and its federal customers.

About LMI
LMI is a not-for-profit strategic consulting firm serving the federal government for more than 55 years. Our combination of broad perspective, deep analytical skill, and a public-service mission, enables LMI to offer practical—and often original and unconventional—solutions to enable government managers to attain their organization’s objectives.

Public sector organizations value our not-for-profit status services in logistics, acquisition and financial management, infrastructure management, information management, organizational improvement, and policy and program support. We have comprehensive experience in the defense, intelligence, homeland security, health care, and energy and environment markets.

To advance our public-service mission, LMI invests a portion of its revenue into research and development. The LMI Research Institute (LRI) manages these efforts, sponsoring millions of dollars annually in internal and sponsored research. As part of its outreach efforts, the LRI has a formal Academic Partnerships Program that leverages the expertise and research capabilities of leading universities with LMI’s own innovation program. The program includes this solicitation for university proposals, the annually held Government-University Forum, student research, and other initiatives.

Proposal evaluations
Proposals will be evaluated on the thoroughness of their approach and the innovative techniques used to address the research question(s). More information regarding evaluation criteria can be found starting on page 11 of this solicitation.
FY18 Research Topics
LMI is interested in funding university research addressing the topics listed below. Each topic contains multiple research questions; responses may attempt to address all, one, or a combination of the questions.

Unmanned Systems and Robotics
Unmanned systems, including underwater, aerial, and ground vehicles, and robotics are evolving rapidly, and their use in government agencies is expanding. Unmanned systems and robotics are playing significant roles within military operations and are being considered for expansion into other areas to improve efficiencies, reduce costs, and protect life. Advances in both will further improve monitoring, evaluation, and data collection, ultimately transforming logistics, infrastructure management, land surveying, safety and security, and labor-intensive tasks.

- What is the potential impact of unmanned systems and robotics on operations, economics, and infrastructure? Also consider areas of conflict.
- What are the impacts on workforce requirements and human capital planning in multiple domains of military and civilian applications of unmanned systems and robotics?
- How can unmanned systems and robotics improve monitoring and evaluation, and how can best practices be leveraged across civilian, diplomatic, and military operations?
- How can alternative technology delivery systems, such as unmanned vehicles and robotics provide needed resources to isolated communities?
- How can unmanned systems and robotics be utilized for data collection and analytics to improve infrastructure management, logistics, and climate analysis?
- How can unmanned systems and robotics be leveraged to anticipate possible destabilization, human migration, and other collective patterns and behaviors?

Agile Logistics and Risk Mitigation
A multiple domain battlespace is an ever-changing environment, which can include multiple complex situations being dealt with simultaneously. An example is an area in which military operations are underway, as well as a humanitarian crisis. Mitigating service disruptions is critical for logistical sustainment of military, civilian populations, private and public institutions and financial sectors. Service disruptions can include natural disasters, wartime operations, and other manmade interferences. Industry often employs agile logistics to quickly adapt to changing situations and government
agencies have a keen interest in learning how best practices can provide alternatives for managing the multiple domain battlespace, improving humanitarian assistance, and supporting disaster relief.

- How should organizations account for and mitigate losses in transit and what are innovative solutions for protecting equipment and personnel?
- As self-sustainment time increases for the military and other deployed government agencies, how can self-sustainment be managed, and what is a realistic self-sustainment time line?
- How can technology deployed in smart cities and mega cities be leveraged?
- As multiple domain battle includes cyberspace, how can agile logistics be applied toward ensuring an enhanced security posture?
- How can agile logistics be used to mitigate service disruptions around smart-grids and micro-grids?

Predictive Data Analytics and Human Behavior
As technology adoption continues to accelerate, the amount of data captured will grow. Using data to identify patterns toward predicting human behavior is leading to beneficial and useful insights. Predictive data analytics provides an opportunity for organizations to proactively mine and analyze data to deepen their understanding of individuals, groups, and systems. Two such examples federal agencies are interested in include data capture and its use for anticipating adversaries’ behaviors and providing healthcare providers with new and innovative ways of understanding and interacting with their patients.

- How does an organization determine which data to collect? How do they collect and store this data?
- What processes, methodologies, and approaches can assist organizations with collecting, analyzing, and using data in new and meaningful ways?
- How are algorithms and other advancements being used to increase the amount of data being analyzed and the rate at which it is analyzed?
- How can predictive data analytics help organizations identify internal and external threats?
- What are the advantages and disadvantages of using remote sensing?
- How can predictive data analytics assist physicians in disease identification and prevention?
- How can cyber vulnerabilities be identified and mitigated?
Domestic Resource Mobilization
Capacity and capability development focus on assisting the developing world to create sustainable systems that support economic growth, democracy, human rights, access to global health, food security, environmental sustainability, education, and humanitarian assistance. As part of these efforts, agencies such as the Department of State and the United States Agency for International Development (USAID) are looking for ways to solve some of the financial and infrastructure challenges in these areas.

- What systems and processes are currently in place? What is working and what are the areas for improvement?
- How can technology be used to improve capacity and capability development to include reducing fraud and corruption?
- What alternative energy solutions can increase the accessibility of power, water, food, and petroleum distribution?
- What are the advantages and disadvantages of using small mobile solar self-sustainment systems for power generation in isolated communities?
- What are the best practices for rapidly deploying solar desalination systems and distributing the produced water?
- What are the best practices for monitoring and evaluating resource allocation, distribution, and accountability?

Opioid Drug Addiction
Researchers continue to discover new methods for the treatment and management of disease. Currently, two medical challenges in the United States are pain management and opioid addiction. “Since 1999, the number of overdose deaths involving opioids (including prescription opioids and heroin) quadrupled (CDC, 2016).” The Centers for Disease Control (CDC), US Public Health service, military medical community, the Veterans Administration, and private sector medical systems are grappling with new ways to treat and manage pain without addiction.

- What clinical options are available for pain management that can provide similar relief as opioids without the addictive qualities?
- What patient care strategies can help mitigate opioid addiction?
- Is there a relationship between the treatment of childhood conditions and illnesses and future opioid addiction?
Effect of Quality Management Systems (QMS) on Delivery of Healthcare

The Military Medical Corps, Veteran’s Administration, commercial and private hospital systems, Affordable Care Organizations, and Health Management Organizations deploy Quality Management Systems and use Electronic Medical Records (EMRs) in an attempt to improve patient satisfaction and care. While this may be happening, some medical providers are concerned that increased documentation is reducing time spent with patients. This research seeks to understand how QMS and EMRs may help practitioners and providers identify processes and procedures that improve patient care, reduce misdiagnoses, and increase patient satisfaction, while reducing the impact electronic record keeping is having on practitioners and patients.

- How do QMS and EMRs affect the quality of care patients receive from medical providers?
- What are patients’ perceptions of the impact of QMS and EMRs on their care?
- What are the advantages and disadvantages of using QMS and EMRs?
- How do QMS and EMRs affect medical practitioner morale?
- What, if any, are the concerns about privacy and security and what can be done to ensure patient information is protected?

Proposal Submission Requirements

Technical

Proposals are limited to three (3) pages (for the technical approach) and must include the following information:

- Description of the proposed research approach for the chosen topic, including but not limited to defining data requirements, discussing alternative approaches, etc.
- Mention of the specialized or complex facilities/equipment/software/solutions you have access to that may be exclusive and vital to this research effort.
- List of project deliverables; deliverables must include, but are not limited to, a final report and presentation to LMI staff. If appropriate, a deliverable other than a report can be proposed (such as a process methodology, tool or application, etc.).
• Project timeline (13 October – 30 September is the funding period) with anticipated major milestones; more guidance on the timeline will be provided by the LMI project lead upon funding.

• Names of project team members – the project team can be comprised of faculty and undergraduate, graduate, doctoral students, and researchers from other universities needed for the research. Please note if any team members are not US citizens.
  – Name and brief biography of the principal investigator (this section does not count toward page limit).

• Cost proposal outlining the costs associated with the project. See below for more information regarding what may or may not be included in cost – as stated, LMI does not pay for university overhead costs such as ODCs, travel, etc. The cost proposal does not count toward the 3-page limit.

Cost
The LRI intends to fund at least one project through this solicitation; however, the number of projects funded is unknown until the time of award – there can be multiple approaches to one topic, or one approach to each topic, or no approaches to one topic. Award is at the full discretion of the LRI and will be based on the merits of the proposed research approach.

Historically, the LRI has funded individual projects in the range of $30,000 to $50,000; however, this amount should not be a limiting factor, as we will consider all proposals. If submitting a proposal for a multi-year project, please note each phase separately, and clearly identify the cost for phase 1 (October 13, 2017 – September 30, 2018), as well as estimated costs for future phases. There is no guarantee that funding for subsequent phases will be approved in future fiscal year evaluations. The total budget for this year’s solicitation may be spread over multiple projects.

Due to LMI’s not-for-profit status, it is LMI’s policy not to pay for university overhead costs (ODCs, travel, etc.). All funding must go to the sponsored research.

Period of Performance
The period of performance is 13 October 2017 – 30 September 2018. Multi-year project submissions are allowed; however, there must be a defined deliverable at the conclusion of each fiscal year (LMI’s fiscal year is October through September). The project scope should be noted in phases, with Phase 1 being the first fiscal year, Phase 2 the second fiscal year, and so on. The evaluation team will consider funding only
Phase 1 of any multi-year proposal. Subsequent phases will be required to resubmit in following years and will be evaluated against the other submissions under consideration at that time.

Requirements for Proposal Submission
The purpose of the proposal is to explain the proposed research approach for the topic and outline deliverables. Each proposal submitted is limited to three (3) pages for the technical approach, a short biography of the principal investigator, and a cost proposal – please do not include links to other materials, as they will not be considered. If the proposal is selected for funding, an LMI project lead, the LMI Research Institute team, and the principal investigator will work together to create a well-defined statement of work (SOW).

Do not include confidential or proprietary information in the proposal—a non-disclosure agreement will be executed in the event that a proposal is selected for award.

LMI has determined that each partner university will be allowed to submit unlimited proposals for this solicitation. Proposals are due COB (5pm EDT) Friday, September 22, 2017. The proposal package must be submitted electronically to Donna Norfleet at LRI@lmi.org. Hard copy submissions will not be accepted.

Questions regarding the submission or review process should be directed to Donna Norfleet, Manager, LMI Research Institute, at 571-633-7889-7174 or LRI@lmi.org.

Evaluation and Award Process
LMI will review and evaluate all proposals that do not contain confidential or proprietary information. Proposals will be evaluated based on their innovative approach, technical merit, alignment with LMI’s strategic interests in the topic areas detailed in this solicitation, feasibility, and applicability to LMI and its clients. LMI reserves the right to

a. award funding to one or more universities,

b. cancel the proposal solicitation, and

c. conduct discussions and/or negotiations with any or all universities submitting proposals under this solicitation.

This Proposal Solicitation and any proposal submitted in response do not authorize universities submitting proposals to proceed with any work without written
authorization from the LMI Research Institute’s Manager. Universities shall not construe this solicitation or any response submitted as a commitment from LMI to pay any costs incurred in connection with preparing a proposal.

**Timeline**
The following table outlines the timeline for the FY18 Academic Partnerships Projects:

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<th>LMI Research Institute – Academic Partnerships Projects Timeline</th>
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<td><strong>August 14</strong></td>
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<td><strong>October 2</strong></td>
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<td><strong>October 13</strong></td>
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**Terms and Conditions**
The following provisions and clauses apply to this Proposal Solicitation. These provisions and clauses shall be included in the award document and should be considered when submitting a proposal. LMI prefers to retain ownership of the intellectual property developed under sponsored project(s); however, other intellectual property arrangements can be negotiated on a project by project basis.

In performing any activities reasonably related to a sponsored project, all parties shall comply with all applicable provisions of federal, state, and local laws, rules, executive orders, and regulations in effect at the time of such activities.

During the course of sponsored projects, universities may be given access to confidential or proprietary information, including, but not limited to, financial information and patient health records. Upon award, universities agree to execute any non-disclosure agreements necessary to protect the confidentiality of such information and to prevent improper disclosure of any portion thereof.