



SEC Commissioner Luis A. Aguilar ... *warned that “boards that choose to ignore, or minimize the importance of cybersecurity oversight responsibility, do so at their own peril ...”* v13

## PROSPECTUS

**PURPOSE:** The Interdisciplinary Consortium for Improving Critical Infrastructure Cybersecurity, (IC)<sup>3</sup>, is headquartered in the MIT Sloan School of Management. In collaboration with other parts of MIT, (IC)<sup>3</sup> intends to address the important need to improve the cybersecurity of critical infrastructure through an interdisciplinary research approach **focused on the strategic, managerial, and operational issues related to cybersecurity**. (IC)<sup>3</sup> brings together thought leaders from industry and government with MIT faculty, researchers and students, conducting research in multiple relevant areas. (IC)<sup>3</sup> conducts a variety of, meetings, workshops, conferences, and educational activities, and produces research reports which can be used to improve critical infrastructure cybersecurity.

**FOCUS:** Based on initial feedback from prospective sponsors, some important initial issues to be addressed are developing metrics and models that can be used by organizations to better protect themselves, and prevent cyber incidents, including: risk analysis, ROI calculations, process improvements, simulation of cybersecurity resilience, more effective information sharing, and increasing corporate (cultural) adoption and top-management commitment to cybersecurity efforts.

**BROAD SCOPE OF MIT RESEARCHERS:** The researchers participating in (IC)<sup>3</sup> activities are drawn from across MIT and include: Sloan School of Management (Information Technology, Financial Engineering), School of Engineering (Computer Science, Civil and Environmental Engineering, Engineering Systems Division, and Aeronautics and Astronautics), and School of Humanities and Social Sciences (Political Science.)

**SAMPLE RESEARCH PROJECTS** (*continuously evolving based on sponsor recommendations*)

- **MIT House of Security:** (IC)<sup>3</sup> is extending prior research on measuring the Cybersecurity Culture in an organization, and methods for influencing security culture change.
- **Accident and Safety Research:** (IC)<sup>3</sup> is extending its prior research on safety and accident prevention to increasing cyber-safety and preventing cyber events.
- **System Dynamics and Tipping Point Analysis:** (IC)<sup>3</sup> is using System Dynamics to understand and measure what makes complex systems, such as cyber-infrastructures, unstable, and how to make them more resilient.
- **Simulation:** (IC)<sup>3</sup> is building on a rich history in simulation of complex systems under a wide variety of circumstances to develop better metrics and more resilient architectures.
- **Information Sharing:** (IC)<sup>3</sup> has studied and developed ways to improve and better coordinate CERTs that can be extended and applied to further improving information sharing nationally, internationally, and across critical infrastructure sectors.
- **Control Points:** (IC)<sup>3</sup> is studying the best “choke points” to interrupt cyber attackers.
- **Vulnerability Detection:** (IC)<sup>3</sup> has studied crowd source methods of bug detection, and is developing cost effective models to understand issues in black, white and grey markets.

**SPONSOR RELATIONSHIP AND BENEFITS:** It is recognized that the strength of the relationship between MIT and the Sponsor will depend on the efforts that both put into developing and maintaining the relationship. The (IC)<sup>3</sup> intends to become a unique opportunity for its Sponsors, providing a window into relevant research at MIT.

**Members** (\$45,000 per year, or \$35,000 per year if three year commitment)

**Recognition:** Listing in MIT (IC)<sup>3</sup> publications and the MIT (IC)<sup>3</sup> website as a sponsor of the MIT Interdisciplinary Consortium for Improving Critical Infrastructure CyberSecurity.

**Research:** Participation in the research process at the discretion of MIT, including:

- Consideration for possible inclusion as a research site
- Bi-Monthly briefings providing updates on current MIT (IC)<sup>3</sup> research
- Invitations for up to two people to at least two research events each year to hear and discuss findings from ongoing (IC)<sup>3</sup> research
- Reserved place and fee waiver for two people at MIT (IC)<sup>3</sup>'s annual Conferences.

**Communications:** Receive regular updates and notifications of (IC)<sup>3</sup> events, news and publications

**Community Access:** Access to a community of thoughtful, strategic (IC)<sup>3</sup> members, including: conversations (or presentations in conjunction with research visits) with MIT (IC)<sup>3</sup> faculty and staff about current issues, which may result in connections with colleagues from other MIT (IC)<sup>3</sup> sponsor organizations

**Research Content:** Unlimited web access to available password-protected MIT (IC)<sup>3</sup> research content, including sponsor-only access to presentations made at (IC)<sup>3</sup> workshops

- Early access to MIT (IC)<sup>3</sup> working papers and other publications, which, subject to third party rights, will be available to members for 90 days before public release

**Executive Education:** Reserved place and fee waiver for two people at MIT (IC)<sup>3</sup>'s Annual Conference.

**Student Access:** Consideration for possible selection for involvement in a Sloan MBA student project or thesis research.

**Partners** (\$120,000 per year), All of the above, plus

- Ability to suggest research projects.
- Ability, subject to other third party rights, to re-distribute select research content to their existing clients and customers.
- Reserved place and fee waiver for three people at MIT (IC)<sup>3</sup>'s annual Conferences.
- Ability to contact designated faculty member via telephone.
- Ability to participate in select informal meetings in which students, faculty, and staff present their preliminary research and recent results.
- Ability to provide feedback and discuss the relationship of the research to industrial needs.
- Ability to interact with (IC)<sup>3</sup> students for purposes of recruitment and internships.
- Ability to participate in (IC)<sup>3</sup> round tables on "hot topics" of interest to industry and discussions on shaping the (IC)<sup>3</sup> research and technology roadmap.
- Receive regular updates and notifications of (IC)<sup>3</sup> events, news and publications.
- Reserved place and fee waiver for three people at CSAIL@Cybersecurity annual Conferences.
- Access to the research and hardware and software tools developed by CSAIL@Cybersecurity.

**Patrons** (\$450,000 per year), All of the above, plus

- ❖ Ability to help define a specific research project, and consideration of patron's organization as a possible site for, or participant in, that project.
- ❖ Patron may nominate one employee as its representative to (IC)<sup>3</sup>'s Advisory Board, which advises and provides feedback to the (IC)<sup>3</sup> leadership on worthwhile directions of research.
- ❖ Reserved place and fee waiver for six people at MIT (IC)<sup>3</sup>'s annual Conferences.
- ❖ A dedicated faculty contact, with monthly consultations.
- ❖ One on-site faculty presentation to the organization's governing board.

**For more information, please see <http://ic3.mit.edu>  
or contact Stuart Madnick <[smadnick@mit.edu](mailto:smadnick@mit.edu)> or Michael Coden <[mcoden@mit.edu](mailto:mcoden@mit.edu)>**