

# The eSTEM Program

## Engage the STEM workforce to Innovate



**Principal Consultant:** Mr. Has Patel is President of Infologic; Inc. Before founding Infologic, he also worked for Bell Laboratories, Glaxo Smith-Kline Pharmaceuticals, and BP Chemicals.

He has over twenty five years of experience in High-tech venture development, R&D Planning, Business Development, Product Management, and R&D efforts to develop Innovation Management methodologies & tools. Industry expertise includes Aerospace & Defense, Pharmaceuticals, and Software.

His research interests include Innovation Management, Analytics, Technology Transition, and STEM. He holds BS in Mechanical Engineering, and MS in Production Engineering.

-----



## INFOLOGIC

The logical approach to harness innovation

**Infologic Inc.**

25 Palatine # 212

Irvine, CA 92612

Phone: (888) 325-0500

[www.infologic.com](http://www.infologic.com)

**Contact: Has Patel, ext. 100**

[has.patel@infologic.com](mailto:has.patel@infologic.com)

### Issues Addressed

The critical need to produce the next generation of the Science, Technology, Engineering and Mathematics (STEM) workforce is now well understood by both the US Government and Corporations, and a number of steps, such as the Next Generation Science Standards, are being taken to rectify this situation. However, The United States 5-year STEM strategic plan, National Science Foundation (NSF), and a number of corporate studies have identified that the Graduate STEM education is at the crossroads and to meet the challenges of the 21<sup>st</sup> Century, there is a need to engage the newly minted STEM Graduates, and the existing STEM workforce to innovate.

To address this need, we have developed an enterprise-based STEM (or eSTEM, for short) Program. The objective of the eSTEM Program is to empower the recently hired and existing STEM workforce by providing the following innovation-enabling skills which are imperative to ensure that they are engaged in the corporate Innovation process.

### 21<sup>st</sup> Century STEM Workforce - Key Innovation-enabling Skills

- **Enterprise Innovation Management Strategies:** The STEM workforce is the cornerstone of corporate innovation strategies, and they should be taught best practices to implement these strategies. The eSTEM Program will cover the components of the corporate innovation strategies, corporate technology knowledge-base, mitigation of the R&D risks and strategies to successfully transit project from R&D to the commercial products.
- **Innovation Ecosystem:** The STEM workforce is an important part of the Innovation ecosystem, and they should be taught the innovation ecosystem components, global ecosystem models, and leveraging the strength of the U.S.A. innovation ecosystem.
- **Emerging Innovation Management Models:** The STEM workforce should be aware of the emerging models and their relations to the corporate innovation practices. The eSTEM program will incorporate such three multi-disciplinary models which were developed by Infologic, Inc. These are: (a) **iModel** (Innovation Management Model), (b) **TechIP** (Technology & Innovation Plan), and (c) **InnovaTE** (Innovative Technology Environment).
- **Art & Science of Entrepreneurship:** It is now widely accepted that lack of entrepreneurship skills inhibits the technology transfer and commercialization activities. As a part of the eSTEM efforts, it is proposed to teach entrepreneurship skills, such as Vision, Bias for Action, Confidence and Winning Attitude.
- **Critical Skills for Personnel Success:** A number of studies by leading education policy setting organizations, such as the NSF, and the Council of Graduate Schools have identified the critical skills for the Graduate workforce. These skills include (a) professionalism and work ethic, (b) oral and written communication, (c) teamwork and collaboration, (d) critical thinking and problem solving, and (e) ethics and social responsibility. These skills are normally obtained during the K-16 education environments where the involvement of parents and teachers is paramount. The STEM workforce should be taught the state of art, current knowledgebase and how to leverage to innovate.

### Infologic Proposition

Infologic has researched and developed a number of Innovation Management methodologies and learning assets for the STEM workforce. These efforts were published at a number of government and corporate conferences, including the Department of Defense Science & Engineering conferences, and Corporate Management Roundtable.

Infologic can provide consultancy and STEM Workforce training support to enhance the corporate R&D and Innovation Management practices. For example: (a) assess existing STEM workforce related training efforts, and where appropriate, incorporate above skill sets in the existing training structure, (b) develop and deliver a customized course using an organization's case studies, and (c) provide consultancy support to enhance the corporate R&D and Innovation Management models and processes.