eli²’s Strategic Next Moves

We Again Need Your Strategic Guidance

Tim Kotnour, PhD
Lockheed Martin St. Laurent Professor, Industrial Engineering & Management Systems
Director, Engineering Leadership & Innovation Institute
University of Central Florida
We Need Your Input Again...

We’ve Crossed the 1st River

What’s Next?
Essence of the Message

- We Are Driven by Our Mission.
  - Create the burning desire and confidence to deliver world-changing solutions

- I am Grateful for Our eli² Partners, Our Matrixed eli² Team, and My Industry Partners.

- We’ve Delivered on Your Previous Requests.

- We Are Here Today to Set the Path for Our Next Evolution.
  - Undergraduate—How do we move beyond a “feel good” story”?
  - Graduate—How do we maintain and grow our impact?
  - Executive—Does the community want to come together?
  - Capability—How do we sustain our capability to deliver?
We Are Driven By Our Mission...
Create the Burning Desire and Confidence to Deliver World-Changing Solutions.
I Am Grateful...Our eli² Partners Make a Difference.

<table>
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<tr>
<th>Program</th>
<th>Partners</th>
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<tbody>
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<td>Undergraduate</td>
<td><img src="image1" alt="Texas Instruments" /> <img src="image2" alt="Duke Energy" /> <img src="image3" alt="Nielsen" /> <img src="image4" alt="L3Harris" /> <img src="image5" alt="Walt Disney" /> <img src="image6" alt="Boeing" /></td>
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<tr>
<td>Graduate</td>
<td><img src="image4" alt="L3Harris" /> <img src="image7" alt="Kennedy Space Center" /> <img src="image5" alt="Walt Disney" /> <img src="image8" alt="Raytheon" /> <img src="image9" alt="Kratos" /> <img src="image10" alt="Siemens" /> <img src="image11" alt="Lockheed Martin" /> <img src="image12" alt="Northrop Grumman" /></td>
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<tr>
<td>Executive</td>
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<th>CECS Dean’s Office</th>
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<td><img src="image1.png" alt="Undergraduate1" /></td>
<td><img src="image2.png" alt="Graduate1" /></td>
<td><img src="image3.png" alt="CECS1" /></td>
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<td><img src="image26.png" alt="Graduate9" /></td>
<td><img src="image27.png" alt="CECS9" /></td>
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eli²—Being Strategic About Our Next Moves
I Am Grateful...My Industry Partners Provide the Learning Lab.

US Government
- Department of Energy—NETL
- Department of Defense—TARDEC

NASA
- Glenn Research Center
- Wallops Flight Facility
- Science Mission Directorate (Helio)

Advisor to NASA’s Kennedy Space Center
- Executive & Senior Management Teams
- Launch Services Program
- Exploration Ground Systems
- Exploration & Research Technology
- Engineering

UCF Professor
- Lockheed Martin St. Laurent Professor
- Director—Engineering Leadership & Innovation Institute (eli²)
- Director—MSEM

Executive Education
- Harris
- KSC
- Lockheed Martin
- Raytheon
- Siemens
- WDW

Commercial
- EA Sports
- Zynga
- Warner Brothers Interactive Entertainment
- Raytheon
- Harris
- PSM
- GOAA

The Community
- Men’s Group
- Church Leadership

The Family
- Husband
- Father

Learning Community
- Darden
- Boeing
- CCCI
- CNL
- Harris
- HD Supply
- Siemens
- WDW

The Profession
- Book Author
- Professional Speaker
- European School of Management & Technology
- Editor of the Engineering Management Journal

eli²—Being Strategic About Our Next Moves
We’ve Delivered On Your Previous Requests... The Complete Story is Available.

- Undergraduate Program
  - 3:47 long

- Graduate Program
  - 3:38 long
We’ve Delivered On Your Previous Requests.

### How can new graduates/employees be more employable?

- All Get Some, Some Get All Program
- Integrated Program Across All 4 Years

- 18 Program Elements
- Significant Impacts
  - Creativity (80%), Innovation (78%), Collaboration (79%), Accountability (72%), Solution Delivery (84%)
- Student Ownership of the Process
  - See lunch speakers
  - Just say yes

### How can we lead teams to deliver innovative, world-changing solutions?

- Executive Style MSEM Program
- Focused on Solution Delivery
  - Strategy + PM + SE + Leadership

- 9 Cohorts with 197 + 23 (in process) Alumni
- Significant Impact to Organizations
  - $1 Billion in business impacts
- Significant Impact to Alumni
  - Over 75% of the alumni had significant increases in their job responsibilities

### How can we become a more innovative organization?

- CIO Community of Practice
- Conferences
- Special Projects

- Ten Years of the Community of Practice
- Solution Delivery Methodology for WDW IT
- Leadership Development Program for PSM
- Growth Study for GOAA

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**eli²—Being Strategic About Our Next Moves**
We Are Here Today to Set the Path for Our Next Evolution... We Need to Have Alignment.

**Strategic Analysis**

What the Stakeholders & Customers Want & Need
- Industry, UCF, The Dean, The Students

Position

What We Want to Do

Alignment

What We Have the Capability to Do

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“Leaders are path finders...leaders owe it to the organization to find the way through”
Chester Kennedy, Former LM Executive and eli² Champion

“The choices you make today determine the choices you can make tomorrow”
Dennis Lind, Former WDW Executive and eli² Champion

“Do your customer’s job for them”
Bev Seay, Former SAIC Executive, UCF Board of Trustee, and eli² Champion

“Today I get to...”
Lesa Roe, Former NASA Executive and eli² Champion
## The Undergraduate “All Get Some, Some Get All” Program is Intentional on the Impact.

<table>
<thead>
<tr>
<th>Number of Students Engaged in the Program Element</th>
<th>Build Community</th>
<th>Enhance Awareness</th>
<th>Enhance Understanding</th>
<th>Enhance Capability</th>
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<tr>
<td>1,000s</td>
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<tr>
<td>1) L3Harris Gathering Lab</td>
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<tr>
<td>5) Inspire Students to Join the Engineering Journey (EGS 1006 presentation)</td>
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<td>6) Inspire Students to Join the Own their Academic Journey &amp; Provide a Roadmap (EGS 1007 presentation)</td>
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<td>10) Senior Design Boot Camp</td>
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<td>11) Maker Spaces</td>
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<td>7) NAE Grand Challenges Competition (in EGS 3030)</td>
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<td>8) Google Sprint Competition (in EGS 3031)</td>
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<td>9) Leaders Up Close Seminar Series (EGS 3030/3031)</td>
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<td>12) Engineering Leadership &amp; Innovation (EGS 4624)</td>
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<td>13) Professional Development Workshops</td>
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<td>14) Development Circles</td>
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<td>10s</td>
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<tr>
<td>2) Hope &amp; Proud Breakfast</td>
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<td>3) Freshman Social</td>
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<td>4) eli² Interns and Student Committee</td>
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<tr>
<td>15) Engineering Leadership Minor/Certificate</td>
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<tr>
<td>16) Engineering Leadership Capstone (EGS 4950)</td>
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<tr>
<td>17) Engineering Entrepreneurship (EGS 4641)</td>
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<td>18) eli² Interns and Student Committee</td>
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### Intent of the Experience
- Build Community
- Enhance Awareness
- Enhance Understanding
- Enhance Capability
Undergraduate Program... How Do We Move Beyond the “Feel Good” Story?

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<th>Major Drivers</th>
<th>Proven Program</th>
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<td>We need students who are technically sound, creative, innovative, collaborative, and accountable.</td>
<td>All Get Some, Some Get All Program</td>
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<tr>
<td>➢ Students desire to create a sense of community</td>
<td>• Integrated Program Across All 4 Years</td>
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### Objectives & Potential Moves

- **Truly Infuse CICA and Career Ownership Throughout the Curriculum**
  1) Mandatory “Professional Responsibilities Roadmap”
  2) Automated SDBC Tool + Multiple Lessons Learned Sessions
  3) “Deliverable” & Professional Practice Based Syllabi

- **Help Students Build Community**
  4) Student Led Engineering Community Building Week During 2\textsuperscript{nd} Week of Each Semester

- **Create a Direct Pipeline to Professional Experiences**
  5) Direct Pipeline from EL Minor/Cert to Corporate Internship/Co-Op Programs
  6) Direct Pipeline from EL Minor/Cert to Corporate Leadership Programs
The Graduate Program Focuses on Innovative Solution Delivery.

**Course 1:** Technology Strategy
- Strategic Need

**Course 2:** Engineering Statistics
- The Opportunity Gap

**Course 3:** Innovation in Engr Design
- 100 Ideas

**Course 4:** Decision Analysis
- The “Best” Idea

**Course 5:** Systems Engineering
- The System Requirements

**Course 6:** Systems Architecting
- Modeling the System

**Course 7:** Advanced Cost Engineering
- Cost The Solution

**Course 8:** Project Engineering
- Project Plan

**Course 9:** Environment of Tech Org
- Leadership Plan

**Course 10:** Engineering Mgt
- Solution Delivery & Innovation Plan

**Course 11:** Industry Specific Capstone
- Bring it All Together

- Executive style
- Highly selective company driven participation
- Continuous innovation and experimentation
## Graduate Program...
How Do We Maintain and Grow Our Impact?

### Major Drivers
We need teams to deliver world-changing solutions.
- The hybrid work environment is emerging

### Proven Program
- Executive Style MSEM Program
- Focused on Solution Delivery
  - Strategy + PM + SE + Leadership

### Objectives & Potential Moves

- **Operate a Sustainable Model**
  1) More Sustainable Business Model
  2) Annual Cohorts

- **Go National**
  3) New Delivery Models: Light Residency Program

- **Tie the Classroom Discussions with the Emerging Business Challenges**
  4) Applied Research Tied to Assessments in the Classroom

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**eli²—Being Strategic About Our Next Moves**
Executive Program... Does the Community Want to Come Together?

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<td>➢ Organizations will be continuing to adapt to the “Future of Work”</td>
<td>• Conferences</td>
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<td>• Special Projects</td>
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Objective & Potential Moves

- Document and Share Lessons Learned Across Leaders and Organizations
  1) Learning Community
  2) “Leaders in Residence” Program (present and former industry leaders to support projects + memoirs)
  3) “Leaders Up Close” Series
  4) Non-Degree “Certificate” Workshop & Executive Education Model
## Sustainable Capability & Executive...  
How Do We Sustain Our Capability to Deliver?

### Major Drivers
We need the ability to deliver practical, experienced based instruction.
- Universities are pushing for a greater emphasis on research
- Faculty are becoming more and more focused on research

### Proven Capability
- Matrixed team

### Objective & Potential Moves

- **Create a Cadre of “Professors of Practice”**
  1) Formalized “Professor of Practice” Position
  2) Doctorate in Engineering (Management) to Develop Stream of Professors of Practice

#### Executive Leader
- Overall Organizational Success
- Learning Community
- “Mini Sabbatical”
- Doctorate in Engineering Mgt.

#### Chief Technology Officer
- Broad Technical Direction
- Doctorate in Engineering Mgt.

#### Chief Systems Engineer
- Technical Requirements
- MSEM Professional Project & Systems Engineering Cohort

#### Program Manager
- Overall Program Success
- MSEM Professional Project & Systems Engineering Cohort

#### Project Engineer & Manager
- Cost & Schedule
- MSEM Professional Project & Systems Engineering Cohort

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**eli²—Being Strategic About Our Next Moves**
We Believe in Our Mission...We Need to Be Intentional on the Next Move.

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<th>Graduate</th>
<th>Executive</th>
<th>Capability</th>
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• All Get Some, Some Get All Program<br>• Integrated Program Across All 4 Years

• Executive Style MSEM Program<br>• Focused on Solution Delivery<br>• Strategy + PM + SE + Leadership

• Document and Share Lessons Learned Across Leaders and Organizations<br>1) Learning Community<br>2) “Leaders in Residence” Program (present and former industry leaders to support projects + memoirs)<br>3) “Leaders Up Close” Series<br>4) Non-Degree “Certificate” Workshop & Executive Education Model

• Matrixed team