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B.S., Biomedical Engineering
Marquette University

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Northwestern University

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Marquette University

Chair, Department of Biomedical Engineering
Marquette University

Executive Associate Dean, Opus College of Engineering
Marquette University

Opus Dean, Opus College of Engineering
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Kohler Company

M.Ed. Higher Education, Student Affairs
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Marquette University

Assistant Dean, Leadership and Vocation Programs
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Director, Engineering and Innovation Leadership Development
Marquette University

Mom • Wife • Sister • Identical Twin • Daughter • Leader • Educator • Pediatric Healthcare Advocate • Soccer Coach
Marquette graduates will be problem-solvers and agents for change in a complex world… ready in every way to ‘go forth and set the world on fire.’

A heritage of developing innovation leaders
A PEOPLE-FOCUSED INNOVATION LEADERSHIP DEVELOPMENT PROGRAM

- Undergraduate Engineering Students
  - Three-year curricular program
    - 2014 - Present

- All Undergraduate Students
  - Modular
    - Fall 2019-Present

- Corporate Offering
  - Graduate Certificate
    - (Early Career Professional)
    - Fall 2020

OPUS College of Engineering
MARQUETTE UNIVERSITY
What is innovation?

How does it differ from creativity?

Write down your responses.
What is innovation?

Creatively solving problems + Managing uncertainty + Executing to create value = INNOVATION

“The effort to create purposeful, focused change in an enterprise’s economic or social potential.”
Peter Drucker

“Creating something new that adds value.”
Center for Creative Leadership

Innovation – Not Invention

**INVENTION**
Something new—something that’s never been seen or done before.

**INNOVATION**
Something new that creates enormous value by addressing an important problem (especially disruptive innovation).

“Inventions are rather common and can often collect dust, while innovations change the world. Why is this distinction important to make? Because inventing something is relatively easy compared to what it takes to solve a problem and create real value.”

Chuck Swoboda, Eng ’89
Marquette University Innovator-in-Residence | Retired CEO, Cree, Inc.
Host: Innovators on Tap | Author: The Innovator’s Spirit (May 2020)
Why Should We Care About Innovation?

**Fortune 500 Life Expectancy**

**IN AN AGE OF UNCERTAINTY**

- **1930**: 90 years
- **1964**: 61 years
- **2016**: 18 years

**Rise of the Start Ups: 2015**
- 50 million new businesses formed globally
- **137,000 per day**
Consider the last 5 years.

What innovations have changed how you live, work, conduct business, shop, consume information, learn, etc.?
What does it take to lead innovation?
INNOVATION STARTS... AND ENDS... WITH PEOPLE
Leading Innovation: A People-Centric Endeavor

REAL PEOPLE
SOLVING REAL PROBLEMS
FOR REAL PEOPLE

REAL PEOPLE
LEADING ORGANIZATIONS
 FILLED WITH REAL PEOPLE

PEOPLE EITHER
SUPPORT OR HINDER
INNOVATION

Re-HUMAN-ize
Work

New Products, Services, Business Models

Companies, Manufacturers

Market Study - End Users, Clients, Consumers, Patients

Employees, Managers, Executives

Companies, Manufacturers

OPUS College of Engineering
Marquette University
Leading Innovation: The Mindset Barriers

Management > Leadership

Lack of courage

Focus on perfection

Lack of diverse experience & thought

Culture and the status quo bias
A Tension of Values

MANAGEMENT VALUES
- Risk Management
- Predictable
- Do what works
- Use best practices
- Accountable to do my job
- Process-driven decisions
- Short-term value

INNOVATION (LEADERSHIP) VALUES
- Risk Taking
- Unexpected
- Try something new
- Find a better way
- Accountable for the goal
- People-driven decisions
- Long-term value

Consider the roles management training, organizational design, reward structures, and performance management play in this tension.
What it takes to lead innovation

- Curiosity that seeks change
- Diverse networks that fuel diversity of ideas
- Courage to...
  - ...share your ideas
  - ...change the status quo
  - ...face adversity
- Commitment to an innovation culture

INDIVIDUALLY & COLLECTIVELY
Curiosity That Seeks Change

*Discovery skills of great innovators: IQ + EQ + DQ*


- **Questioning:** The passion and skill for inquiry. It's measured by the frequency and types of questions you ask that lead to new insights, connections, possibilities, and directions.
- **Observing:** The propensity to intensely observe (not just visually) the world around you. This includes customers, products, services, and technologies. Through observation, you gain insights and ideas about new ways of doing things.
- **Networking:** The ability to actively search for new ideas by talking to people who may offer a radically different perspective. This includes testing ideas with individuals who are diverse in both background and perspective.
- **Experimenting:** The frequency with which you have an experimental mindset as you visit new places, try new things, seek new information, and experiment to learn new things.
- **Associating:** The ability to make connections across seemingly unrelated questions, problems, fields of study, or ideas.
Curiosity That Seeks Change

Discovery skills of great innovators

Your Idea Network

You have a new idea you are excited about. Who would you call to discuss the idea (your sounding boards)?

In 60 seconds, list your top 10+ people you go to for critical feedback about new ideas.

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<th>Top 10 Go-To People</th>
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Adapted From The Innovator's DNA Training Tools.
Your Idea Network

<table>
<thead>
<tr>
<th>Top 10 Go-To People</th>
<th>Like Me</th>
<th>Not Like Me</th>
</tr>
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<tr>
<td>1.</td>
<td>✓</td>
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Adapted From The Innovator's DNA Training Tools.

Like Me? Not Like Me?
Profession or Education
Organization function
Organization
Industry
Gender
Age
Nationality
Ethnic group
Political group
Religious group
Socio-economic group
Your Idea Network

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</tr>
</tbody>
</table>

Raise Your Hand If…

Using this Zoom feature, please respond to the questions we ask about your idea network.

Ensure you have the “participants” window pulled up on the right side of your screen. If you don’t see it, click on “participants” in the toolbar on the bottom of your screen. “Raise Your Hand” should be a button in the bottom left corner.
A Diverse Network That Fuels Diversity of Ideas

Changing the Face of Innovation

The people we interact with shape our life and world view. They also shape our “work view”.

If we only interact with people like us, we have a limited set of perspectives to draw on to evaluate the status quo and the potential for new ideas.
Courage

Merriam-Webster Dictionary

courage

: mental or moral strength to venture, persevere, and withstand danger, fear, or difficulty
Courage To…

...Share your ideas

Pursue passion tempered with indifference

...Change the status quo

Overcome the status quo bias

...Face adversity and risk failure

Take risks and demonstrate resilience

*A note about perfectionism*
Reflections On Your **Courage To**…
Share your Ideas | Change the Status Quo | Face Adversity and Risk Failure

**YOUR POLL RESPONSES**

What prevents you from inviting input from others about an idea or a solution?

What is your relationship with the status quo?

When do you avoid risk?

How do you react to failure?
Commitment to An Innovation Culture

Culture Eats Innovation (et al) for Breakfast
Commitment to An Innovation Culture

People are…

- Engaged in the vision and strategy
- Comfortable being uncomfortable
- Candor and ideological conflict are frequent
- Are unafraid of failure, yet unwilling to fail
Making Connections
An Exercise In Associational Thinking

IGNATIAN PERSPECTIVE

- Magis
- The mission and location mission of Jesuit schools
- Indifference and disordered attachments
- Cura Personalis
- Leading With Greater Love Than Fear

LEADING INNOVATION

- Curiosity That Seeks Change
- Diverse Networks That Fuel Diversity of Ideas
- Courage to…
  - Share your ideas (indifferent passion)
  - Change the status quo
  - Face adversity
- Commitment to An Innovation Culture

A Gratitude Moment…

Thank you for inspiring me to innovate! Thanks to you, I have …
QUESTIONS?
Reflections On Your **Courage To**…

*Share your Ideas | Change the Status Quo | Face Adversity and Risk Failure*

- What are you passionate about?
- Under what conditions do you share your ideas and let others make them better?
- What prevents you from inviting input from others?
- When do you take calculated risks?
- When do you avoid risk?
- How do you respond when people challenge your ideas?
- How do you react to failure?
- What is your relationship with perfection?