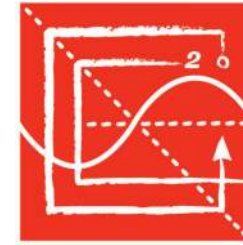


# THE 2022 ENGINEERING IDEAS INSTITUTE



# ECL-USA FINANCIAL SUPPORTERS

- Autodesk
- C&S Engineers
- Degenkolb
- Freese & Nichols
- Gannett Fleming
- GMB
- IMEG
- Jose Guerra Inc.



**NCEES**  
*advancing licensure for  
engineers and surveyors*

- KL&A
- Kyle V. Davy Consulting
- Lamp Rynearson
- Mead & Hunt
- MSA Professional Services
- Parametrix
- Pennoni
- Power Engineers
- Ulteig



# ECL-USA STEERING COMMITTEE

- Stacy Bartoletti, Degenkolb
- Kyle Davy, Kyle V. Davy Consulting
- Lauren Evans, Pinyon Environmental
- Edwin Friedrichs, Walter P. Moore
- Dan Linzell, University of Nebraska College of Engineering
- Mike McMeekin, Lamp Rynearson (EXECUTIVE DIRECTOR)
- Nancy Pridal, Lamp Rynearson
- Clint Robinson, Black & Veatch
- Amy Squitieri, Mead & Hunt
- Bill Stout, Gannett Fleming
- Markus Weidner, Pennoni



**Mission.** ECL seeks to catalyze change within the engineering community through interdisciplinary learning and collaboration.

**Vision.** ECL change leaders are equipped and empowered to lead innovative strategies that better our world.



# PROVOCATEUR PRINCIPLES STATEMENT

- Treat one another in ways that promote trust and mutual respect.
- Be open minded, actively seeking outside information and new perspectives.
- Create a protected sense of inquiry to enable new, essential ideas to emerge and be considered.
- Nurture an inter-connected atmosphere with representation and participation from across the whole system of the engineering community.



# Introductions & Expectations

# Summit Overview

- **The Regenerative / Circular Economy Opportunity**
- **The Engineering Community as Leaders of Change**
- **Advancing Focused Initiatives**



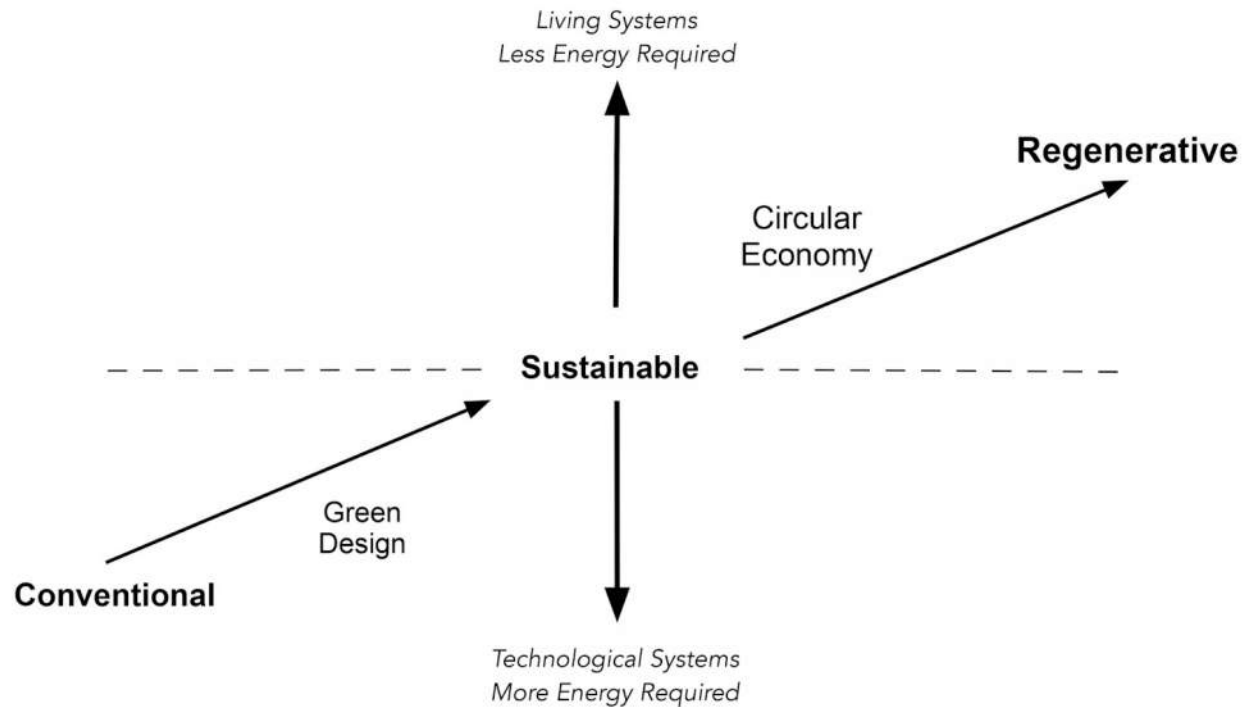
# Logistics & Groundrules

- Be fully present.
- Look for full participation.
- Sense of curiosity.
- Ask great questions.
- Respectful disagreement.
- Honesty.
- Think big about what we can do to catalyze change.





# Beyond Sustainability to Regenerative Practice & The Circular Economy



Adapted from Bill Reed, Regenesi Group



# The Circular Economy Provocation

## Transforming Food and Agriculture to Circular Systems

Maury Salz

*American Society of Agricultural and Biological Engineers*



# *Exercise*

## ***Exploring Circular Economy Concepts***

*Video Introduction*

*Designing a Circular Economy for Plastics*

*David Attenborough, The Ellen MacArthur Foundation*

*Small Group Work*

*Whole Group Report & Discussion*



# **Biomimicry: Being Inspired By Nature**

## ***Introduction***

*Video: A Journey of Design Inspired by Nature, Janine Benyus*



*Exercise*  
***Biomimicry Nature Walk***

*Individual Reflection*

*Small Group Exploration*

*Whole Group Report & Discussion*



# Regenerative Practice Provocation & Exercises

Daniel Lawse

*Verdis Group*



# **Regenerative Practice**

## **Video Provocations**

**John Fullerton Explains Regenerative Economics**  
John Fullerton, Capital Institute

**Principles of the Regenerative Design Paradigm**  
Carol Sanford



# Regenerative Practice Dialogue

## Guidelines for Listening in Dialogue

- Suspend your views (assumptions & certainties)
  - Articulate them (don't advocate)
  - Inquire into them
- Listen to your listening
  - Be aware of your thoughts
  - Maintain peripheral attention
- Be patient with a slow pace and take advantage of silence

## Guidelines for Speaking in Dialogue:

- Speak truthfully and only for yourself
- Build on what others have said
- Seek to expand the inquiry
- Speak to the center of the circle
- Avoid extended “cross-talk” between individuals





# Regenerative Practice Dialogue

*What do we think we know about the role of engineers  
and the engineering community in helping the evolution  
of the living systems they are nested within?*



# Day One Wrap Up

# Day Two Check-In

# Introduction

## Engineers as Leaders of Change



# Engineers as Leaders of Change Provocation

## **ASCE World Vision**

Jerry Buckwalter  
*ASCE*



# Leadership for Social Justice Provocation

## **Engineering Strategies for Making Social Justice Visible & Valuable**

Juan Lucena

*Director, Humanitarian Engineering Undergraduate Programs  
Colorado School of Mines*



# Leading Societal Change Provocation

## **The Mindshift Process**

Rex Miller



# Exercise

## The Change Game

### Exercise Objectives:

- *Explore the potential for members of the engineering community to act as change leaders to address 21<sup>st</sup> Century global imperatives confronting humanity and the world.*
- *Imagine how members of the engineering community might lead change within different arenas of practice (academia, private practice, industry, professional society/association, government) and different settings (company, community, state, federal, global).*
- *Build a set of possibilities that individuals might consider for taking action.*





## *Exercise* *The Change Game*

*Step One: Chartering Small Groups*

*Step Two: Exploring & Developing a Change Plan*

*Step Three: Summarizing Your Change Plan*

*Step Four: Pitching Your Plan*

*Step Five: Whole Group Reflections & Discussion*



# Engineers as Change Leaders Dialogue

*What do we think we've learned about  
engineers as change leaders on behalf of society?*



# Day Two Wrap Up

# Day Three Check-In

# Macro-Ethics & Taking A Stand

## Video Case Study

*Frances Haugen & Facebook*



# Engineering Change Lab – USA

## The First Five Years

Insights on Change Leadership



# Engineering Change Lab – USA

## Envisioning the Future



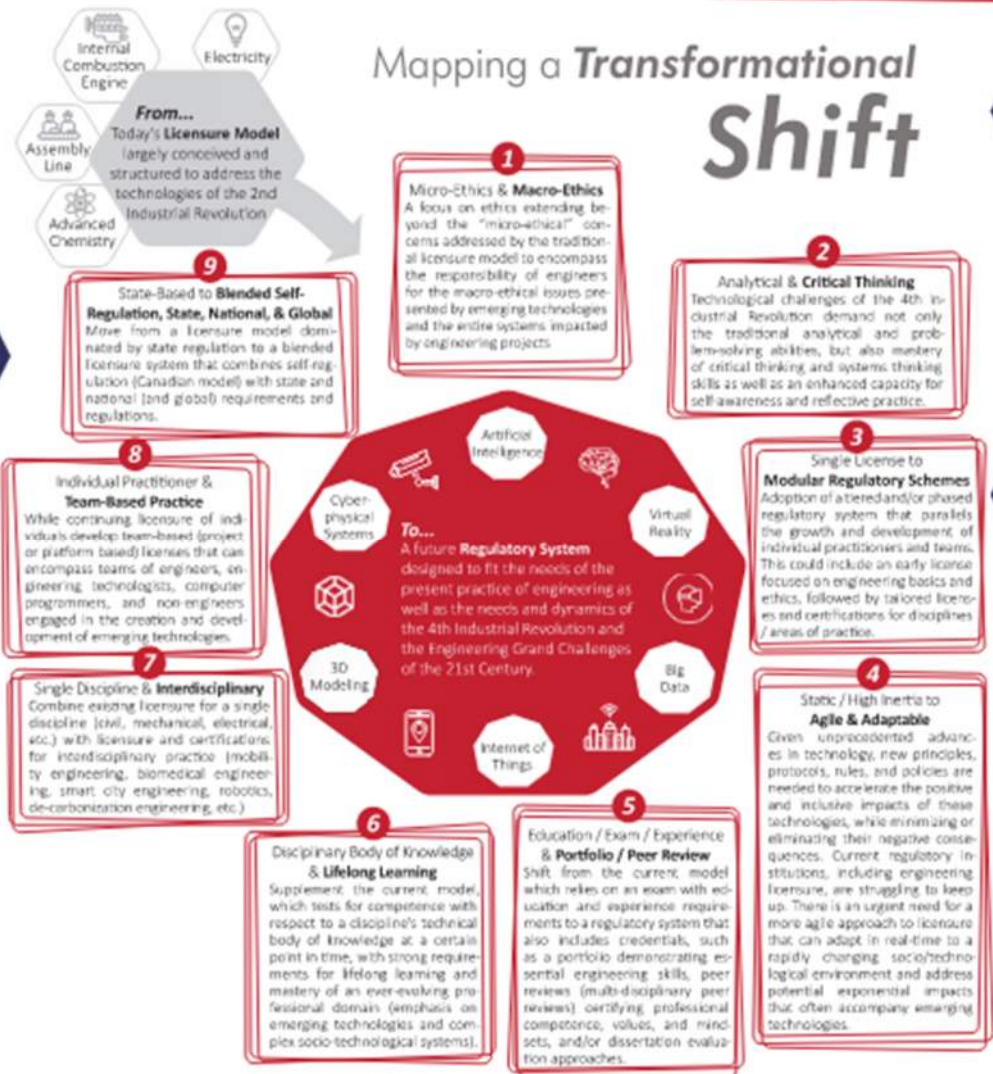
# Closing Remarks



# Advancing Focused Initiatives

# Future of Licensure Initiative

## Mapping a *Transformational Shift*



## FUTURE OF LICENSURE EXPERIMENT STEERING COMMITTEE

- Kyle Davy, Process Design & Facilitation
- Rick Guerra, NSPE
- Tim Jacobs, Texas A&M
- Caitlin Kenney, Int'l. Systems Management Corp.
- Lance Kinney, Texas Board of PELS
- Patty Mamola, Nevada State Board of PELS
- Mike McMeekin
- Brian Robertson, NCEES Board of Directors



# ECL-USA FUTURE OF LICENSURE EXPERIMENT

## Objectives for Action

Create and deploy a set of prototypes for possible advances moving the regulatory system toward this aspirational future.

- Designed around the *tenets* and *parameters* for such a transformational shift mapped out at the ECL-USA Licensure Summit.
- Allow for feedback, learning, and iterative elaboration of possibilities.



# ECL-USA FUTURE OF LICENSURE EXPERIMENT

Status of University of Maryland Research



# Engineering & Racial Justice Initiative

# Engineering & Racial Inequality Working Group

- Ademola Adejokun, Lockheed Martin
- Kyle Davy, ECL-USA
- Laurie Dreyer, Taylor Design
- Josh Elliott, GMB
- Lauren Evans, Pinyon Environmental
- Tricia Hatley, Freese & Nichols
- Khalid Kadir, Cal-Berkeley
- Darshan Karwat, Arizona St.
- Patty Mamola, NV BPELS
- Mike McMeekin, ECL-USA
- Charlie O'Donnell, GMB
- Nancy Pridal, Lamp Rynearson
- Kelvin Solco, The Solco Group
- Amy Squitieri, Mead & Hunt
- Karlene Thomas, Pinyon Environmental
- Craig Watts, IMEG
- Yolanda Webb, WEBB Advisory Group
- Alison Wood, Olin College



# Approach & Scope

- Becoming Aware
- Educating Ourselves
- Accepting Responsibility
- Taking Action





# Next Steps

- Sponsor Outreach
  - NSPE
  - ACEC
- Community Identification
  - Dallas
  - Denver
  - Omaha



# Climate Change Noble Purpose Statement

The impacts are serious, and they are accelerating. There is an **urgent imperative** for the Engineering Community (1) to take informed and intentional actions now to both **reduce greenhouse gas emissions and adapt to the impacts of a changing climate.** It is our **duty and purpose** to contribute our skills and knowledge of human-centered technologies and of the natural world to lead humanity out of the climate crisis with a focus on sustainable, resilient, equitable, and innovative approaches.



# Current Signatory Organizations

- AIChE, Cleveland Section
- Aspect Consulting
- Coughlin Associates
- C&S Companies
- Degenkolb Engineers
- University of Nebraska Dept. of Civil & Environmental Engr.
- Engineering for Change
- Engineers Without Borders
- Institute for Sustainable Infrastructure
- Jose I. Guerra, Inc.
- Mead & Hunt
- Morrissey Engineering
- NSPE
- Parametrix
- Siemens
- The Lemelson Foundation
- The Nature Conservancy



# Next Steps

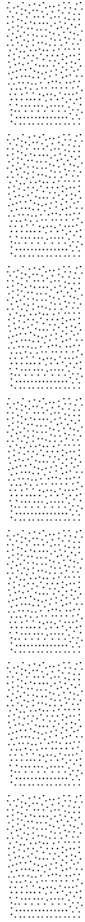


# ECL-USA Visioning Workshop

# Objectives

- Assess achievement and progress over first five years.
- Create aspirational vision for next five years.
- Identify major goals and prioritize next steps.
- Foster engagement among stakeholders.







**THANK YOU FOR YOUR  
CONTRIBUTIONS TO THE  
2022 ENGINEERING IDEAS  
INSTITUTE.**