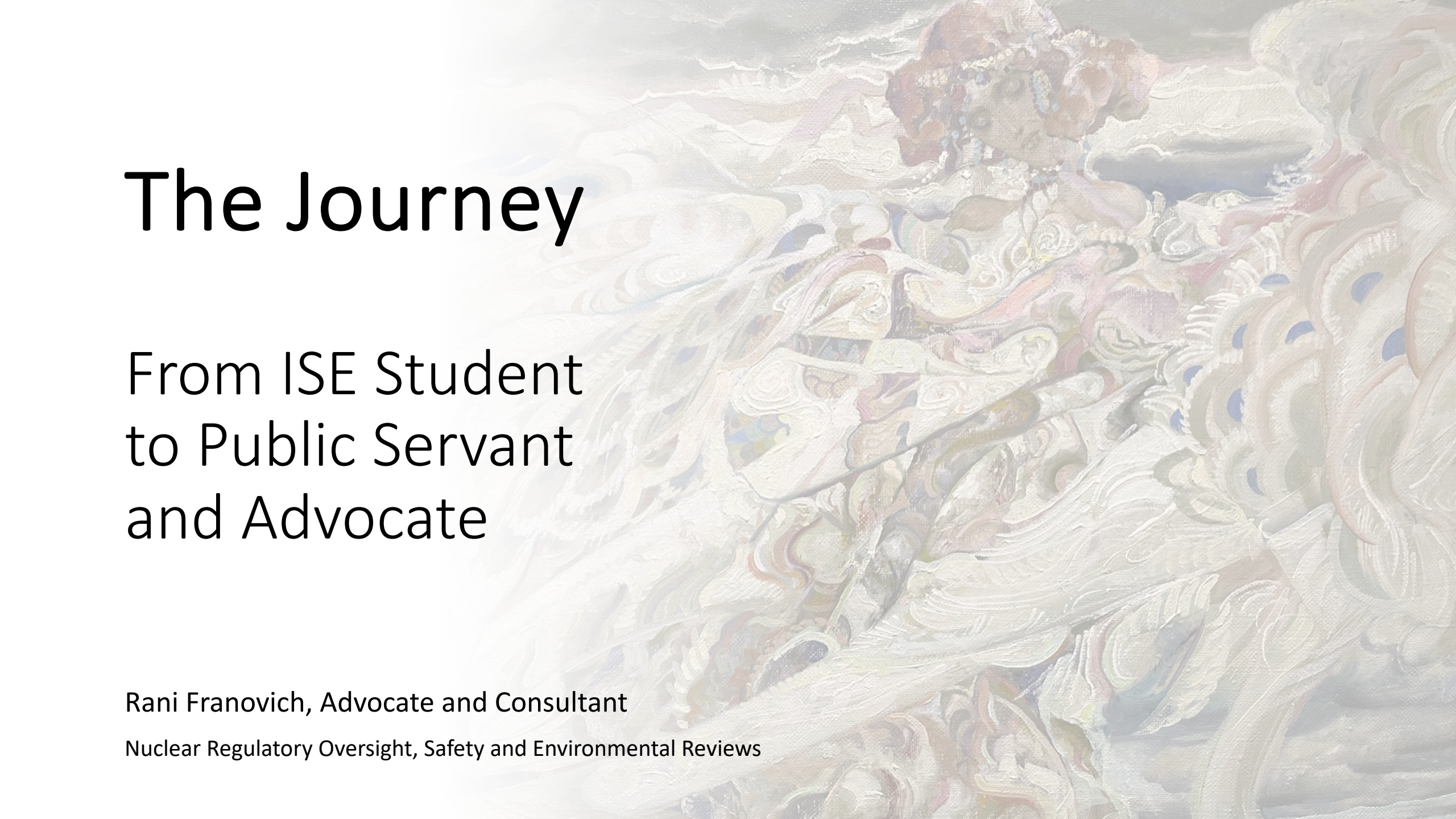


# The Journey



From ISE Student  
to Public Servant  
and Advocate

Rani Franovich, Advocate and Consultant

Nuclear Regulatory Oversight, Safety and Environmental Reviews



# Academic Credentials

## Master of Science, 1991, Industrial and Systems Engineering

Human Factors Engineering Option

Thesis: Human-computer Interaction

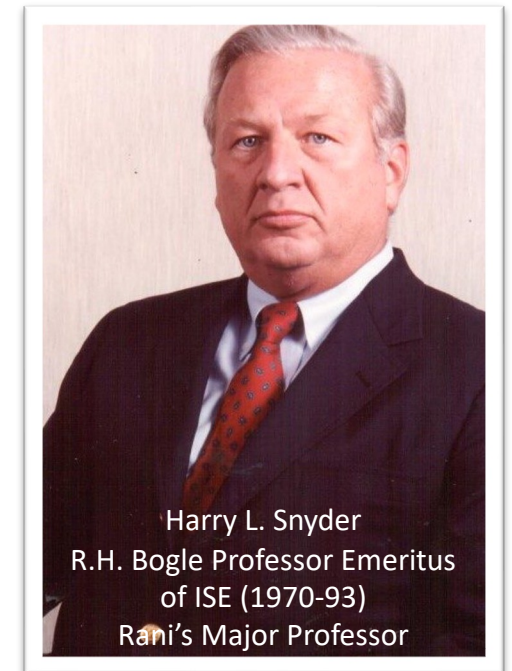


## Bachelor of Science, 1988

Majors: Psychology, English

Minor: Sociology

Fave Class: Phil 1504, "Critical Thinking"



Harry L. Snyder  
R.H. Bogle Professor Emeritus  
of ISE (1970-93)  
Rani's Major Professor



# Servant Leadership

Lesson: The trash collector is just as important as the CEO.

- Why?
- Different yet necessary roles.
- What would happen if one or the other failed?





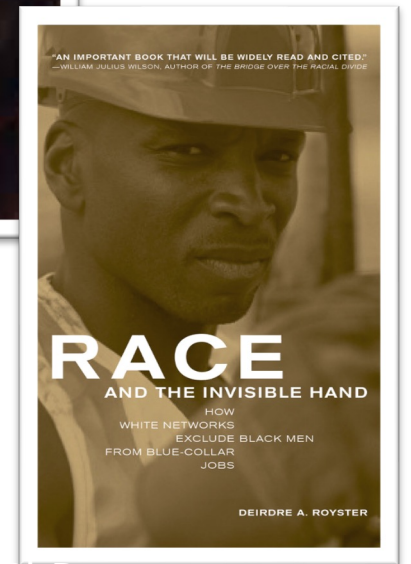
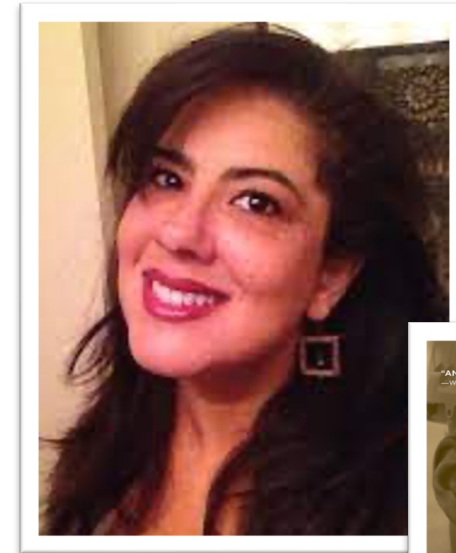
# Invest in Relationships

## If you could change anything...

- Emotionally invest in your family, friends and communities.

## What about professional networking?

- This works well for some but not all.





# Reactor Engineer Intern Program

- Technical Training  
Classroom and hands-on: Diesel generators, motor-operated valves, control room simulator
- Developmental Assignments  
HQ (Rockville, MD), Region II (Atlanta, GA) and Shearon Harris Nuclear Power Plant





# Learning the Regulatory Craft

- **NRC Inspector Certification**  
Rigorous two-year qualification program culminating in oral board examination
- **Resident Inspector, Catawba Nuclear Station, York, SC**  
Six years of on-site inspection to gain an integrated knowledge of plant operations





# Integrated Knowledge of Plant Ops

## ISE Knowledge and Skills:

- Systems approach to decision-making
- Critical thinking
- Safety culture
- Ethics
- Questioning attitude



Kristin Chappell, 2016

FitzPatrick's First Female Nuclear Operator – A Look Back ([entergynewsroom.com](http://entergynewsroom.com))

## Engineering Disciplines:

- Mechanical Engineering
- Electrical Engineering
- Structural Engineering
- Fire Protection Engineering
- Software Engineering
- Instrumentation and Controls
- Materials Engineering
- Human Reliability

## Other Disciplines:

- Reactor Physics
- Radiation Protection
- Maintenance & Surveillance
- Emergency Preparedness
- Public Communications
- Environmental Monitoring
- Regulatory Compliance



# Career Advancement into Leadership

Investing in  
field  
experience  
pays  
dividends

- Reactor License Renewal Project Manager, GG-14 (2001-2002)
- Senior Materials Engineer, Reactor License Renewal, GG-15 (2002-2003)
  - Special Assistant and International Liaison, NRR, (July 2003)
- Technical Assistant for Enforcement, GG-15 (2003-2005)
  - Technical Assistant (Reactors) to Commissioner Jeffrey Merrifield, GG-15 (2005)
- Chief, Environmental Branch B, Reactor License Renewal, GG-15 (2005-2007)
- Chief, Projects Branch 2, Reactor License Renewal, GG-15 (2007-2008)
- Chief, Performance Assessment Branch, Inspection & Regional Support, GG-15 (2008-2014)
- Chief, Security Training and Support Branch, Security Operations, GG-15 (2014)
- Senior Policy Advisor, Division of Preparedness and Response, GG-15 (2014-2015)
- Branch Chief, Project Aim Team, Executive Director for Operations, GG-15 (2015-2016)





# Public Speaking Engagements

Embrace opportunities to broaden your experience and improve your skills



NRC Regulatory Information Conference, March 2014

Rani



# Good Leadership and Followership



Rani and Kevin, 2012


- What defines a successful leader?
- What choices does a good leader make?
- How do values and ethics guide behavior?



# Values-based Leadership

## NRC's Values:

- Integrity
- Service
- Openness
- Commitment
- Cooperation
- Excellence
- Respect

A graphic featuring a stylized atomic nucleus with a glowing orange core and yellow elliptical orbits, set within a circular frame. Below the circle is a dark blue silhouette of a person's head and shoulders. The background is black with faint, colorful, abstract patterns.

**crit·i·cal mass**  
*noun*

1. (Physics) the minimum amount of fissile material needed to sustain a nuclear chain reaction.
2. (Social Theory) the minimum number of a collective minority needed to achieve and sustain socio-political change.

**#WeGoCriticalMass**



# Advocacy - Making a Difference

Rani discussing regulatory modernization, March 2023 NRC Regulatory Information Conference



Rani at March 2023 panel discussion of nuclear energy policy with U.S. Senator and U.S. Ambassador to United Nations Organizations in Vienna, Austria





# The Pitch: A Career in Nuclear Energy

ISE brings other engineering and science disciplines together in a coherent organizational structure



**Alireza Haghight**  
Professor & Director of Nuclear Engineering at Virginia Tech

## Virginia Tech nuclear expert says U.S. needs to rebuild its nuclear energy workforce

“A nationally recognized nuclear expert says an insufficient workforce, not technological issues, will be Virginia’s biggest obstacle to developing small modular nuclear reactors. Part 2 of a five-part series on what the new push for nuclear power means for Virginia.”

Cardinal News, April 18, 2023



# Thank you to Virginia Tech Faculty!



Rani with Harry L. Snyder in Sunset Beach, NC  
September 2021

