# The Road Not Taken- Non-Traditional Career Paths in STEM

Irene Peterson
Principal Research Scientist
Corning Research and Development Corporation

June 2021

# Some kids know exactly what they want to do when they grow up….I was not one of them

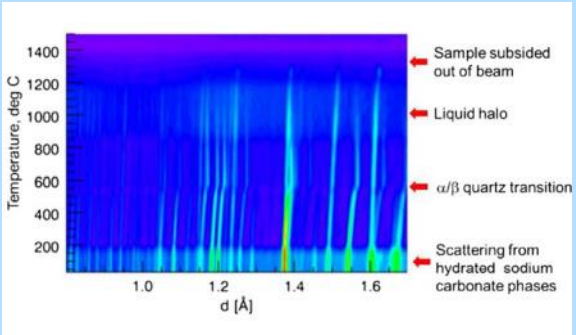
A career is a giant experiment.

What is your favorite habitat?

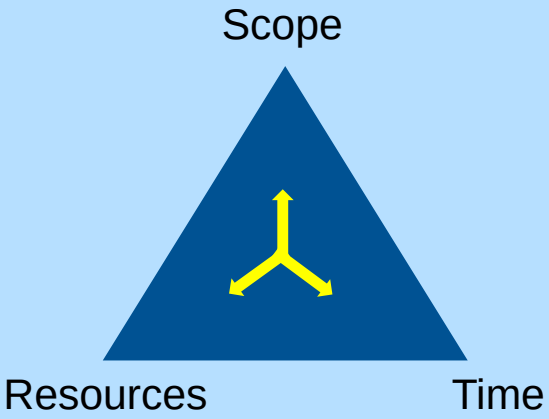
© 2021 Corning Incorporated

# My current roles at Corning Research & Development Corporation

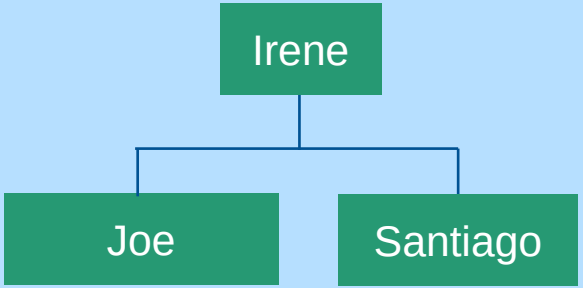
## Principal Research Scientist




## Project Manager




## Supervisor



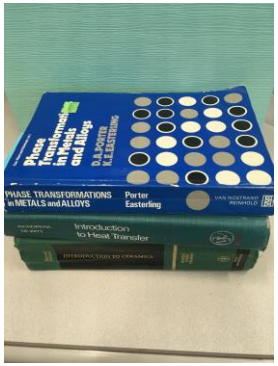


© 2021 Corning Incorporated

# The role of serendipity

Attended University of Michigan

Found Materials Science



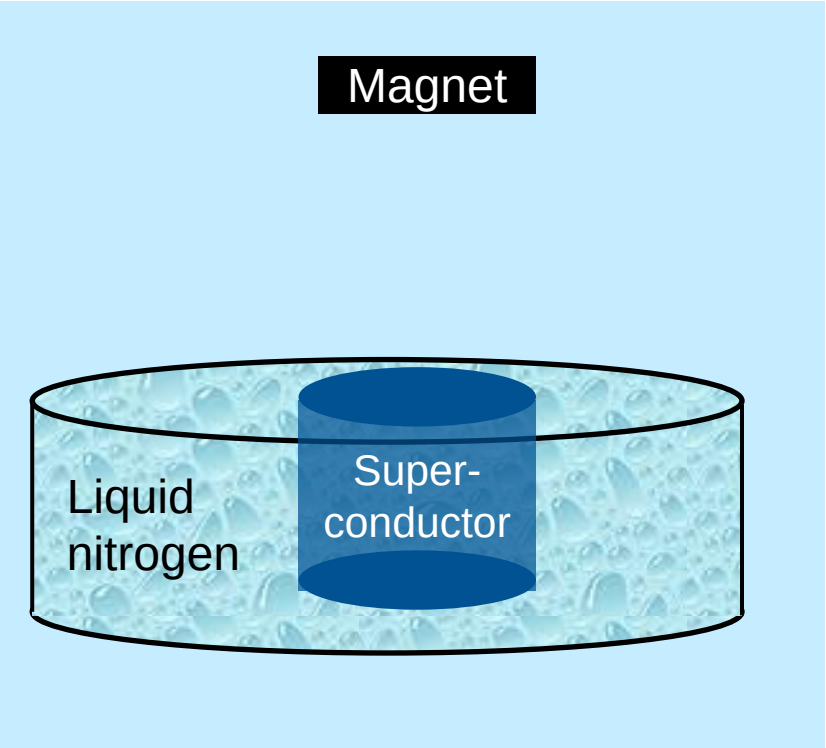

Liberal Arts → Engineering School

*Question from job interviewers: What do you think about graduate school?*


© 2021 Corning Incorporated

# The role of the summer internship

- Summer internship at Argonne National Laboratory – Dr. Mike Lanagan



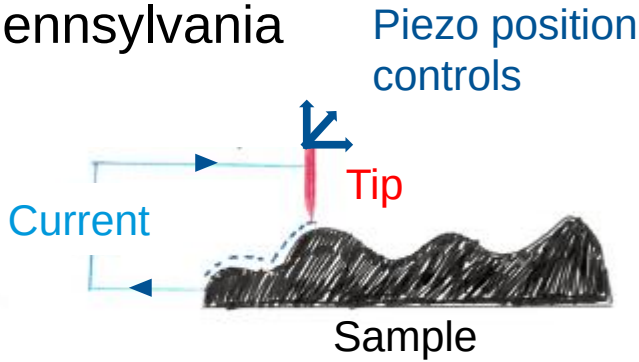

Research is fun!

Learned path from idea to hypothesis to experiment


© 2021 Corning Incorporated

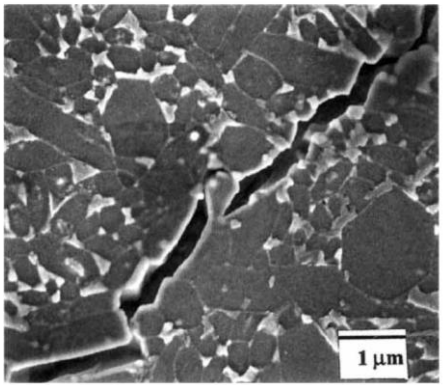
# Graduate school

- Professor Dawn Bonnell - The University of Pennsylvania
  - M.S. Thesis : Scanning Tunneling Microscopy of Grain Boundaries in Strontium Titanate




- *Detour back to Michigan to get married*

- Professor T.Y. Tien – The University of Michigan
  - Ph.D. Thesis: Effect of Grain Boundary Microstructure on Fracture Toughness in Silicon Nitride

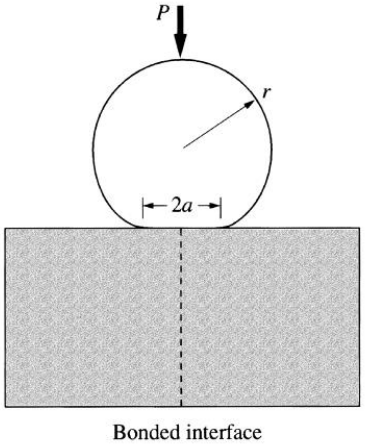


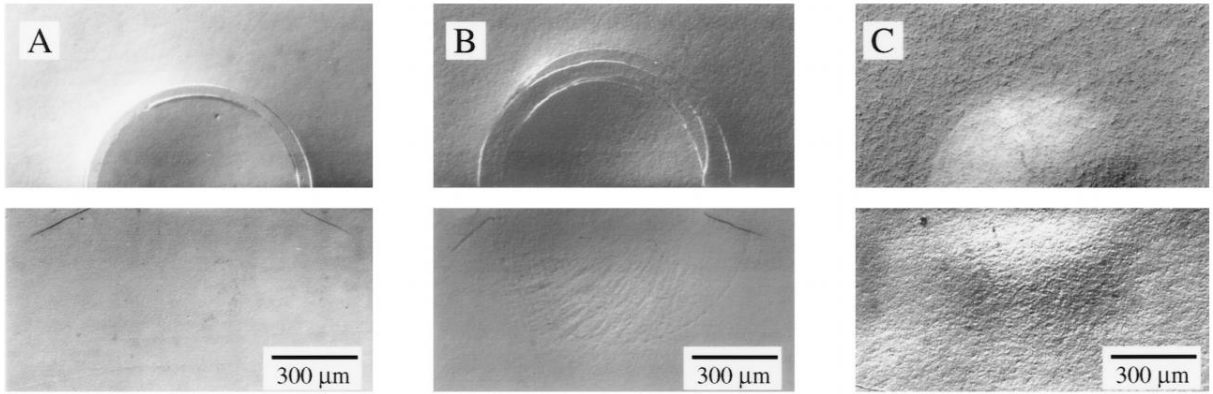


© 2021 Corning Incorporated

# The post-doc – a time to learn and grow

- National Institute of Standards and Technology – Dr. Brian Lawn
- Effect of microstructure on contact damage in dental ceramics





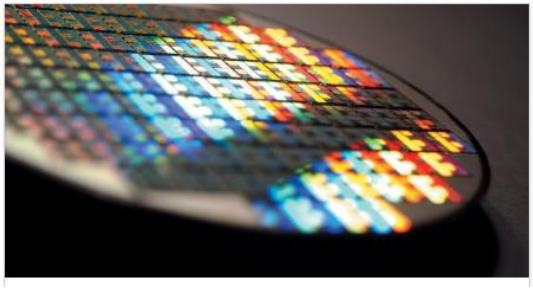
© 2021 Corning Incorporated

# Additional valuable skills from a post-doc

- Publishing
- Networking
- Collaborating
- Writing proposals for funding
- Learning about different careers
- Presenting at conferences
- Participating in a technical society
  - The American Ceramic Society

© 2021 Corning Incorporated

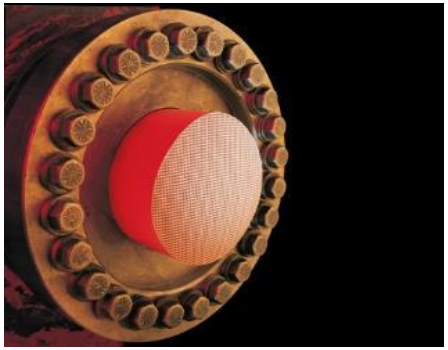
# Joined Corning Incorporated as a Senior Research Scientist



Photos: https://www.corning.com/worldwide/en.html


© 2021 Corning Incorporated

# Followed the technical work that interested me the most



Ceramic microstructure and process design

Glass Melting and Forming

Crystallization

*A university education teaches how to learn. Be fearless.*



Extrusion Photo: https://www.corning.com/worldwide/en.html

© 2021 Corning Incorporated

# A scientist's view of building a career path

- Gather data about yourself
  - What energizes you?
  - Balance between personal and work time
- Gather data about different roles
  - What does a person in that role do during the day?
  - What skills would you need for that role?
- Run career experiments
  - Teams, technical societies and volunteer work

© 2021 Corning Incorporated