



# Tips for Career Success in Optics & Photonics

Katie Schwertz, Sept 7, 2022

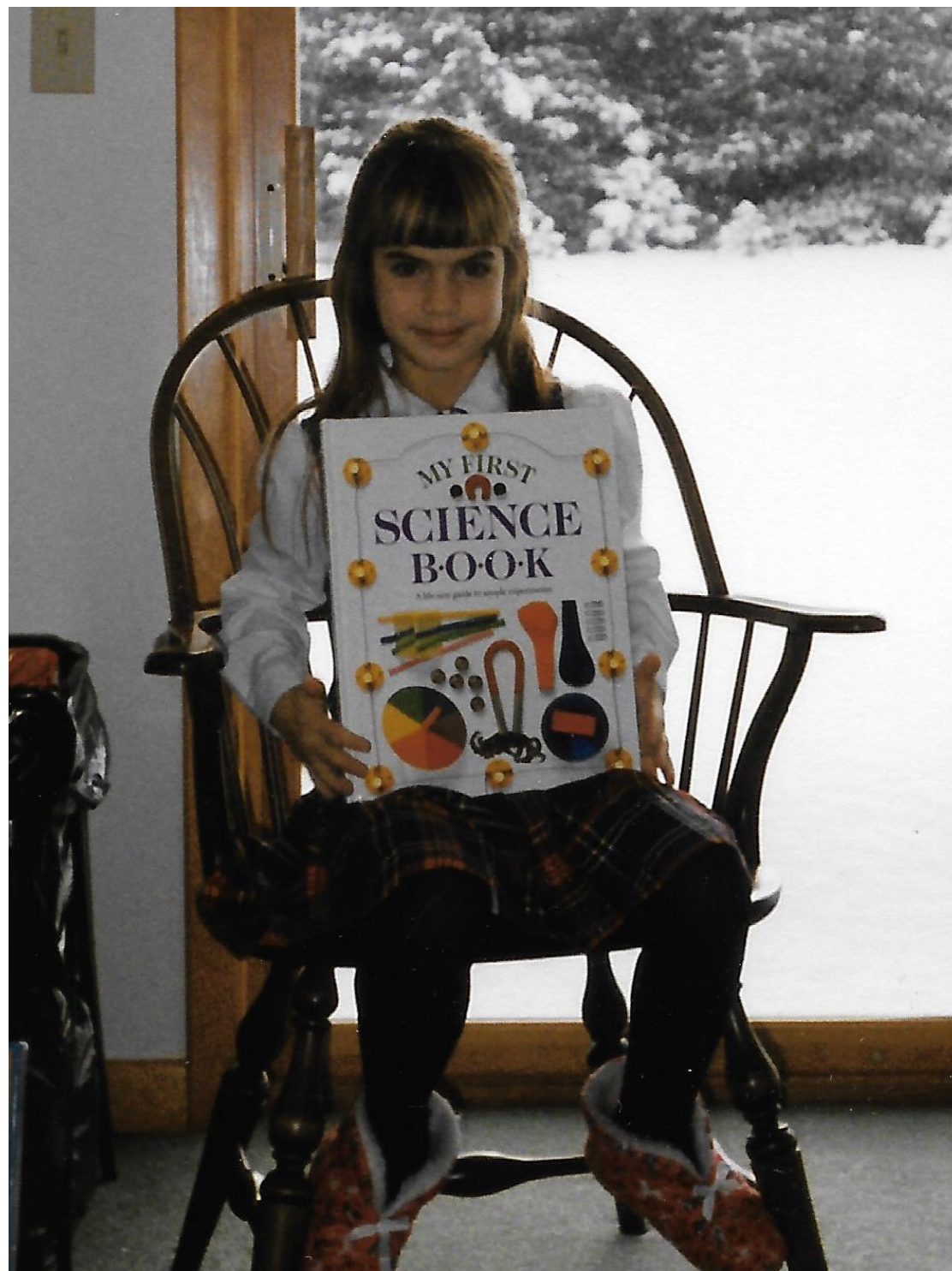
# Introduction

University of Rochester, BS in Optics (2008)

University of Arizona, MS in Optical Sciences (2010)

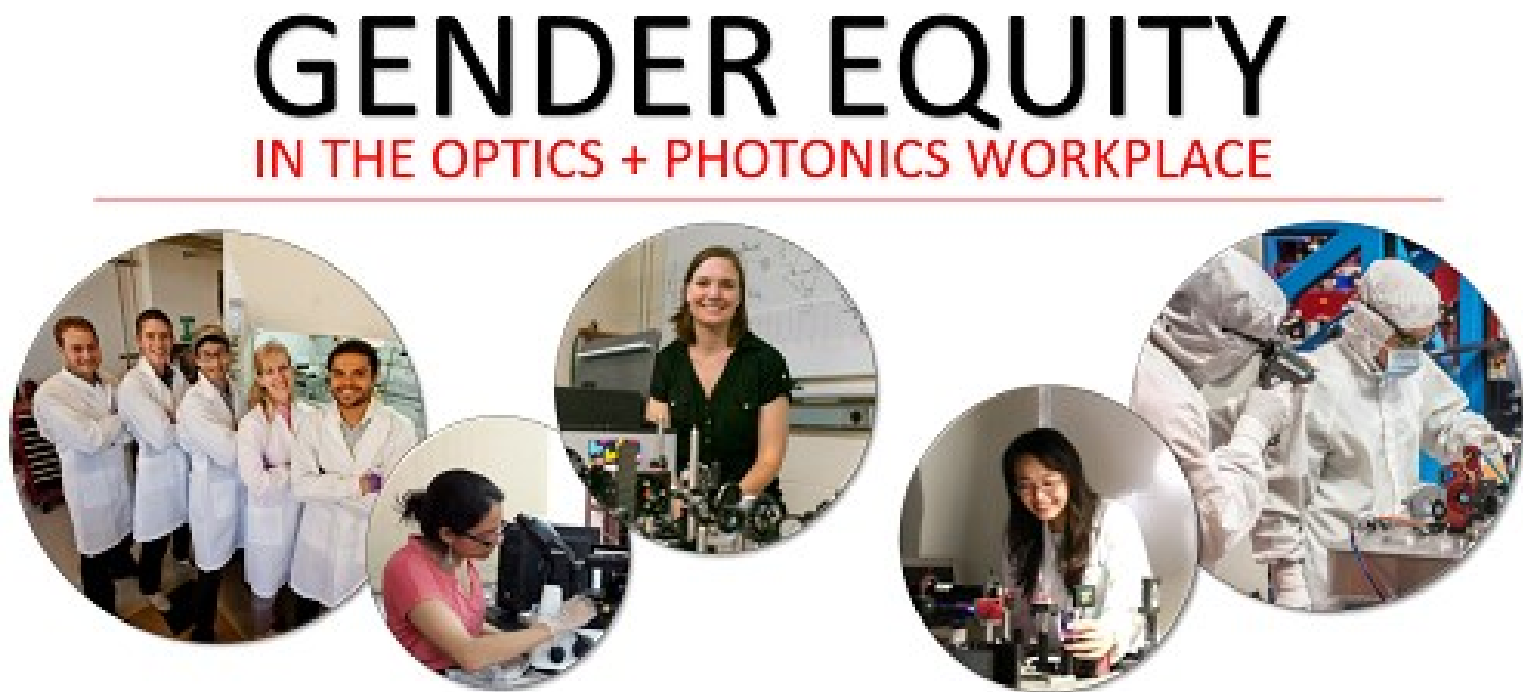
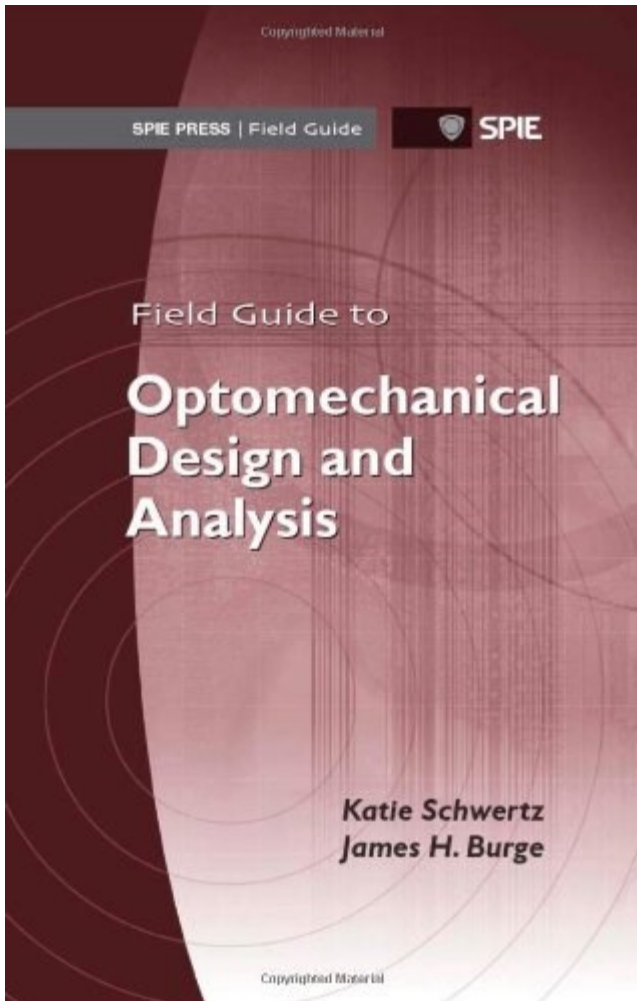
Design Engineer for Edmund Optics Tucson (2010 – 2020)

Design Engineering Manager (2020 – present)



# Introduction

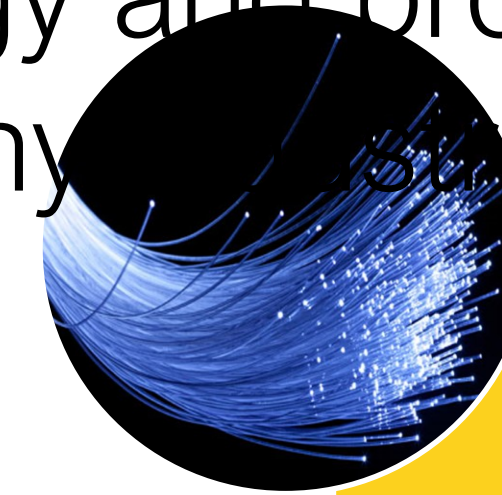
Published *Field Guide to Optomechanical Design and Analysis* (2012)  
Professional involvement with the AZ Technology Council and Optics Valley  
Board Member of SPIE (2020 – 2022)  
Advocate for Women in Optics



# Participant Introductions

# Optics & Photonics Industry

- Enabled Services:
  - Optics is considered an **enabling technology** – the technology and products the internet, video/music streaming, cloud storage, optics community develops is utilized throughout many industries
- Enabled Products
  - autonomous vehicles, AR/VR, medical imaging, smartphones
- O&P Products:
  - inspection systems, optical scanners, display screens
- Core Components:
  - lasers, detectors, lenses, filters, fiber



Enabled Services



Enabled Products



O&P Products



Core components

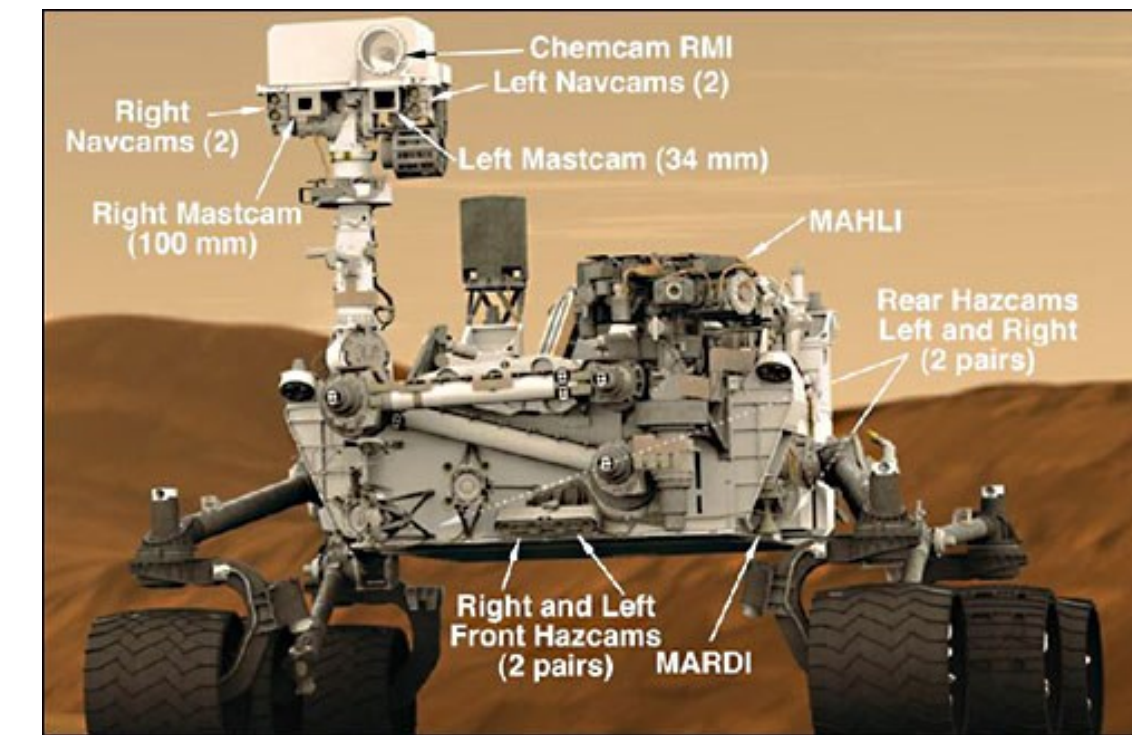
# Optics & Photonics Industry

Nearly 1,000 companies making and selling core photonics components in the US

~75% of photonics component manufacturers are **small and medium size** (<\$10M revenue)

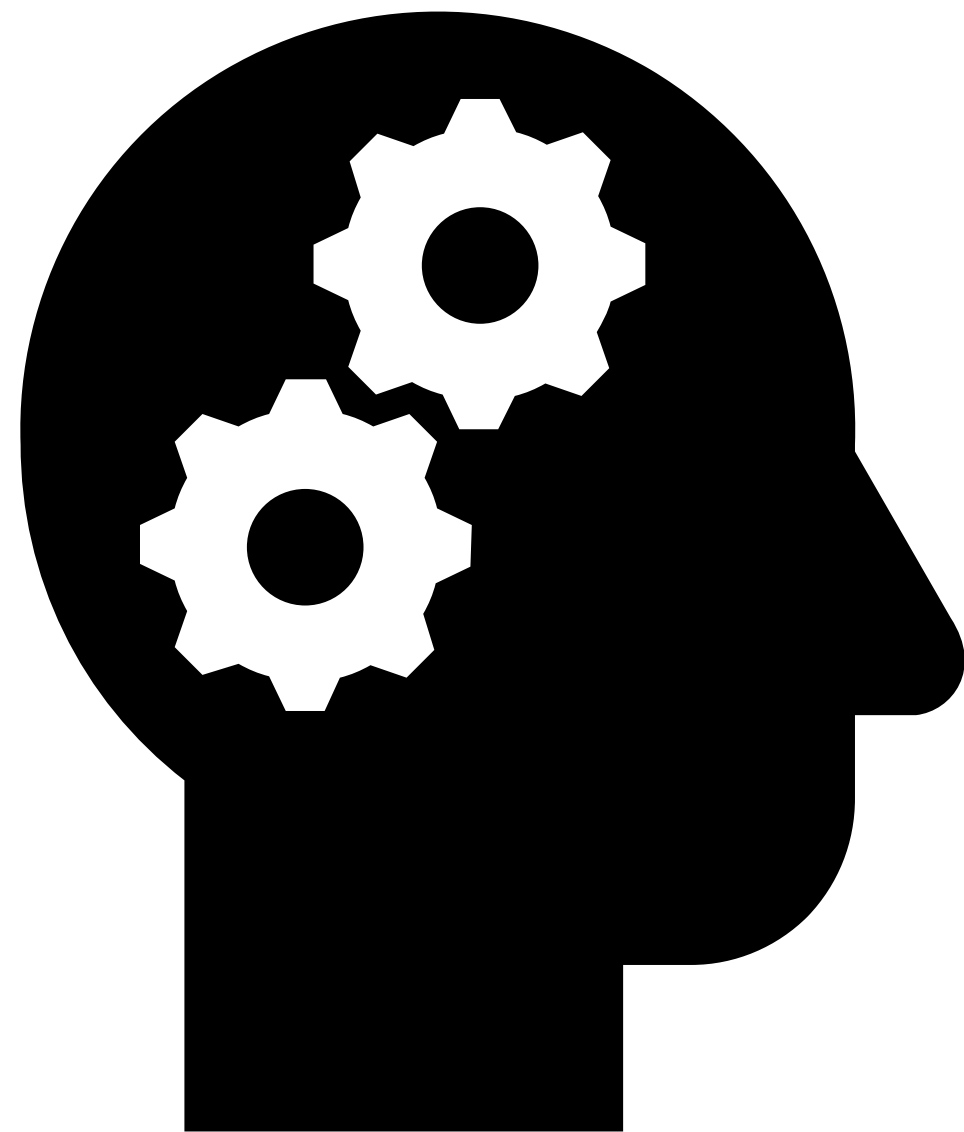
Aerospace  
Medical Diagnostics  
Autonomous Systems  
Defense & Security  
Communications

Materials Processing  
Information Technology  
Machine Vision & Measurement  
Displays & Lighting  
Photovoltaics (Solar)



Source: SPIE Optics & Photonics Industry Report, 2020

# Tips for Success



Build, and be careful with, your reputation

Take every opportunity

Ask for/be vocal about what you want

Identify, over time, the core of what you do and don't like

# Build Your Reputation

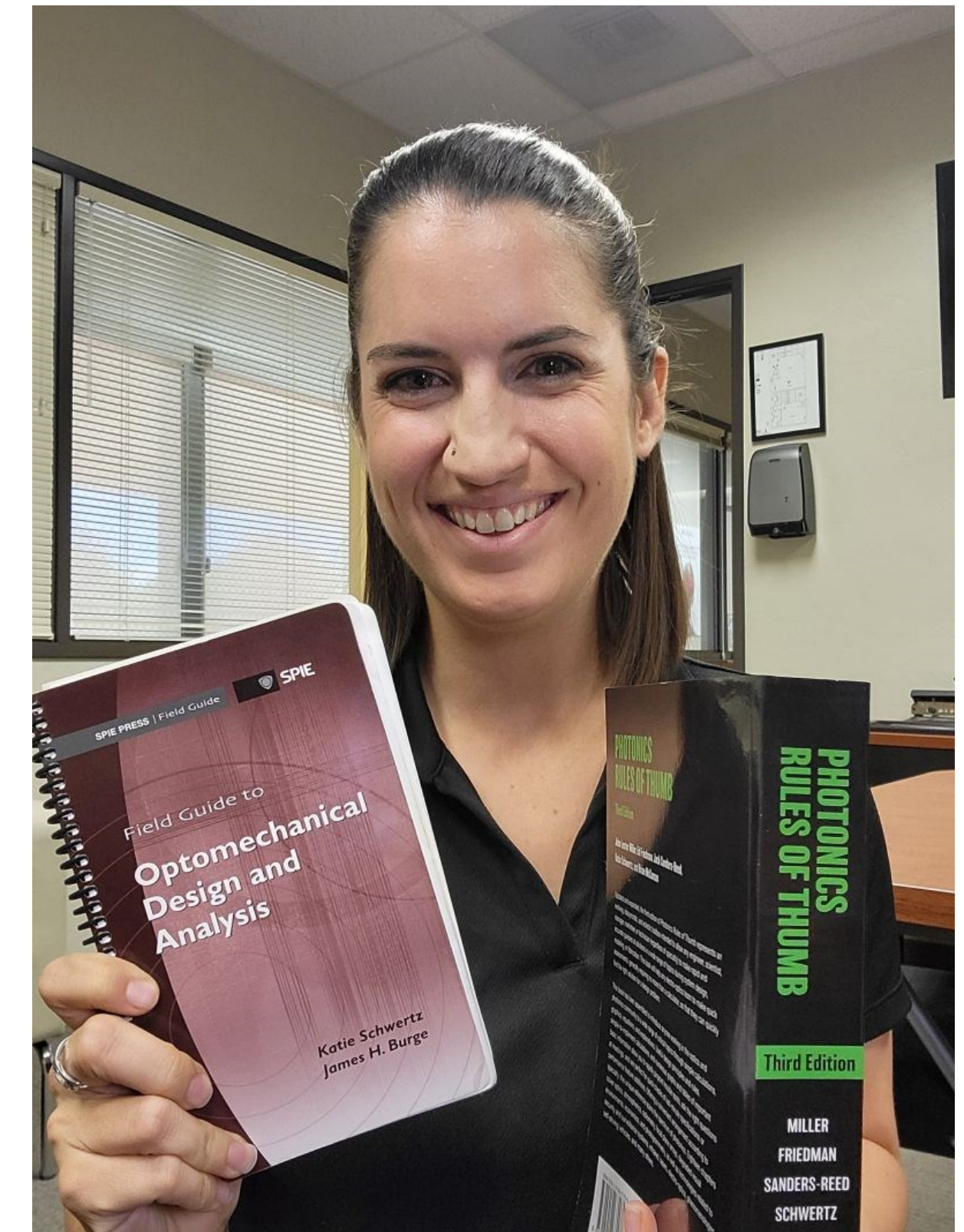
- O&P is a small field – don't burn any bridges!
- Do what you say you will
- Help and learn from others
- It's ok to say "I don't know"
- Be the best employee you can be



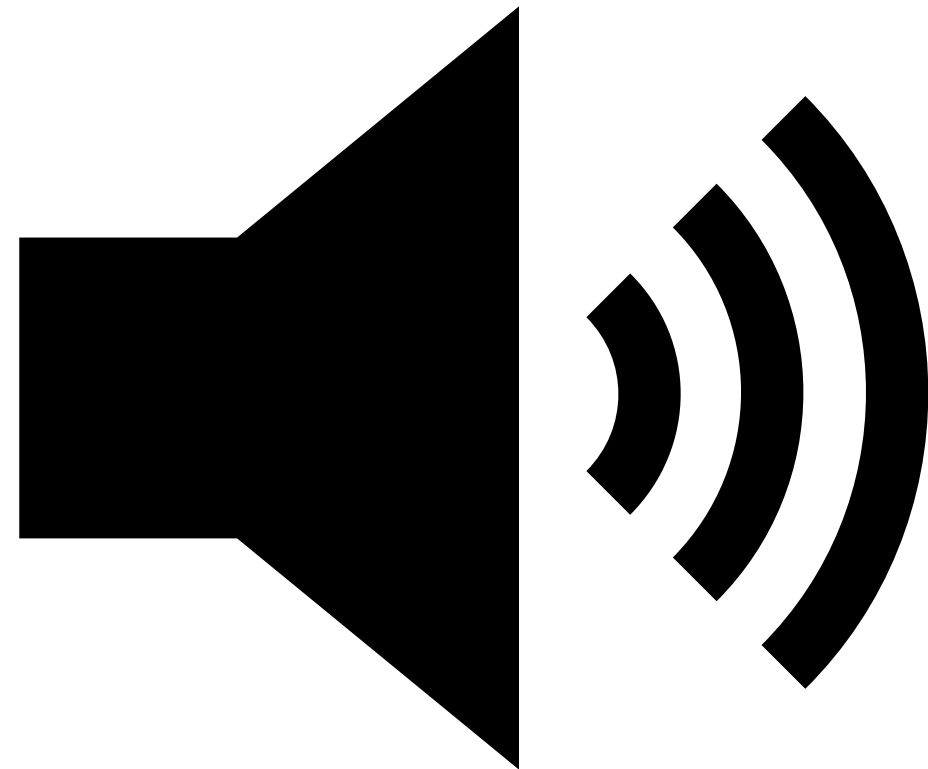


# Take Every Opportunity

- Increase work responsibilities and knowledge
- Look for, ask for, and attend training (webinars, courses, conferences)
- Participate in your (work) community
  - National Societies
  - Local Affiliates
  - Committees
  - LinkedIn
  - Networking Events
  - Office Events



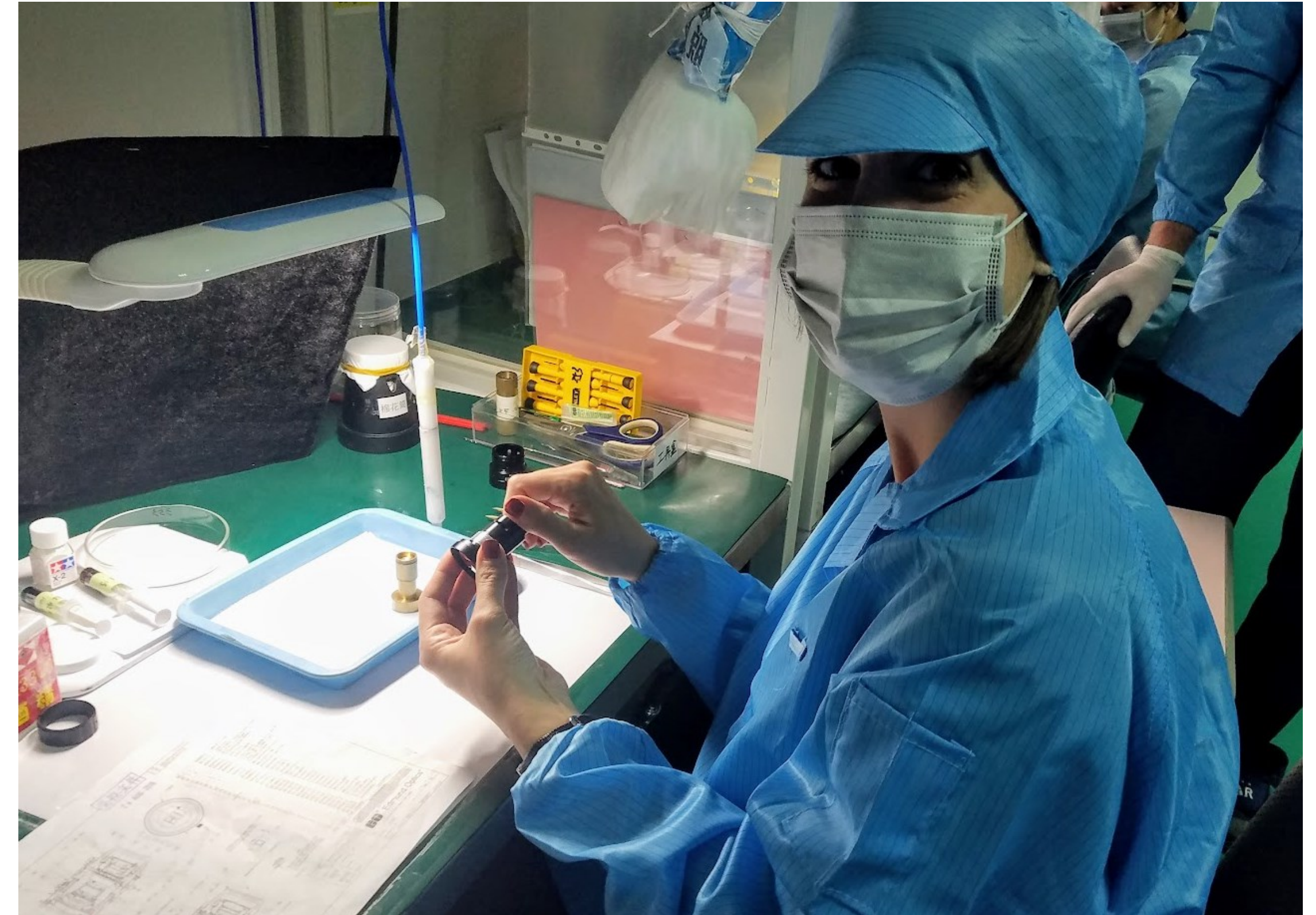
# Ask For What You Want!



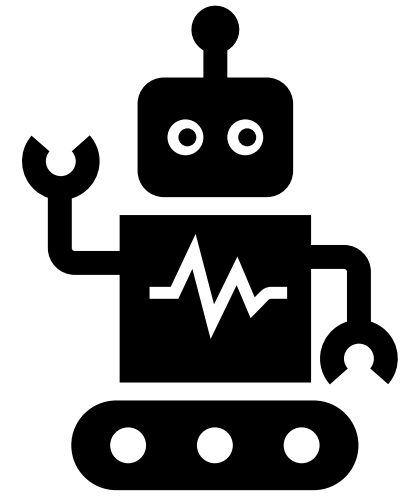
- Raises, promotions, new or different job duties do not happen automatically
  - Even the best managers are not psychics
- Establish regular feedback / check-in with your supervisor
- Don't be afraid to make suggestions

# Identify Likes & Dislikes

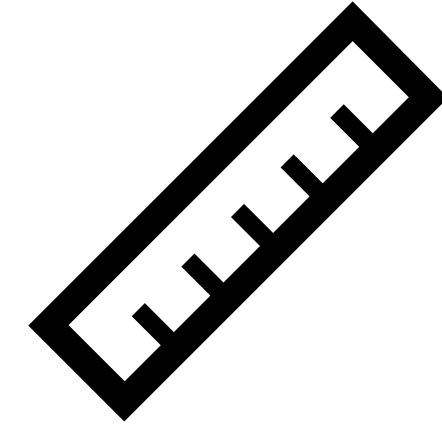
- Some people's careers are straight forward... others are very windy
- If you're not currently happy / satisfied
  - What do you do on your favorite days? Your least favorite?
  - Are you unsatisfied with the work you do? Or who you're working for or with?
- Know that you can pivot into so many other areas!



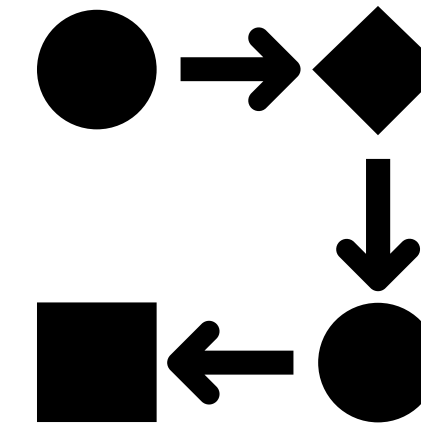
# Engineering is Everywhere



Research &  
Development



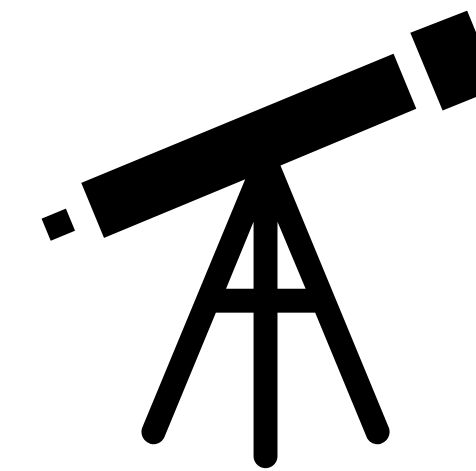
Quality Assurance



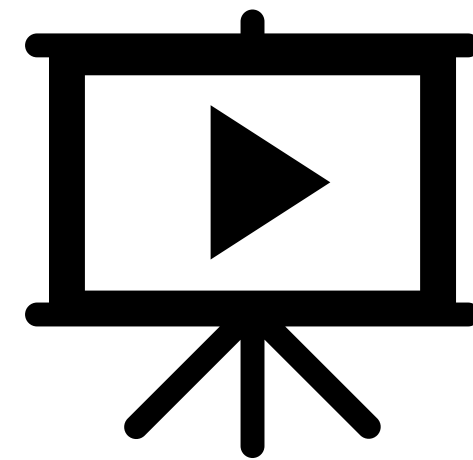
Supply  
Chain



Teaching



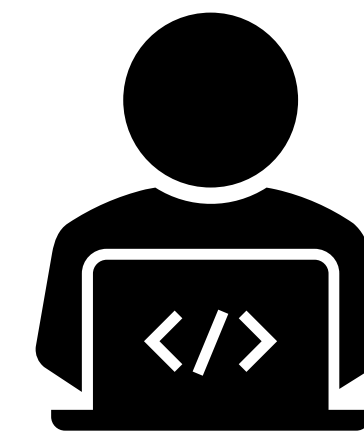
Applications



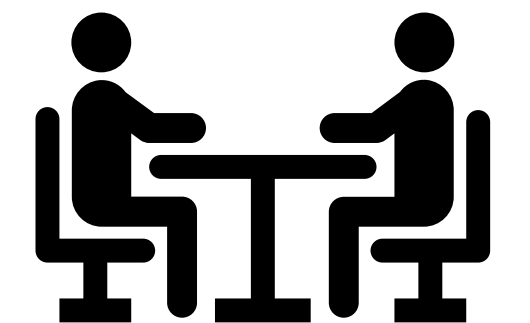
Marketing



Manufacturing



Design



Sales

# Getting a Job

- Attend a **conference** if possible (reach out to organizers for funding, discount, scholarship opportunities)
- Brush up your **LinkedIn profile** – highlight specific work experiences or projects
- **Research companies** you might like to work for, look for job openings
- Reach out to Photonics **Industry Clusters** (<https://spie.org/industry-resources/photonics-clusters>)
  
- Be prepared with **salary expectations**
  - Talk w/recent graduates, research online, understand cost of living adjustments
- Make sure you **interview a company** as much as they are interviewing you
  - What's the workplace like? Can you speak with people in the role currently?
  - How did they handle COVID?
  - What are the traits of their best employees in this role?

# Optics & Photonics Technicians

- Starting salaries for 2-yr degree technicians: \$42,000 – \$57,000
- National median for photonics technicians: \$63,2000 (\$30.38/hr)
- Nearly 100% job placement



Source: <https://spie.org/education/technician-resources>

# Optics Hubs in the US for Technicians

Rochester, NY

Tucson, AZ

Orlando, FL

Bozeman, MT

Southern CA

Huntsville, AL

Boston, MA / Southern NH

Boulder, CO

Silicon Valley (San Jose, CA)

# Resources

- SPIE Career Center: <https://spiecareercenter.org/>
- Optica WorkInOptics: <https://jobs.workinoptics.com/>
- SPIE Technician Resources: <https://spie.org/education/technician-resources>
  - [\\$2,500 Photonics Technician Scholarship](#)
- Listing of Photonics Clusters: <https://spie.org/industry-resources/photonics-clusters/usa-clusters>
- Workplace advice including resumes, interviewing, negotiating: <https://www.askamanager.org>



# Thank you!

Contact Info: [kschwertz@edmundoptics.com](mailto:kschwertz@edmundoptics.com)

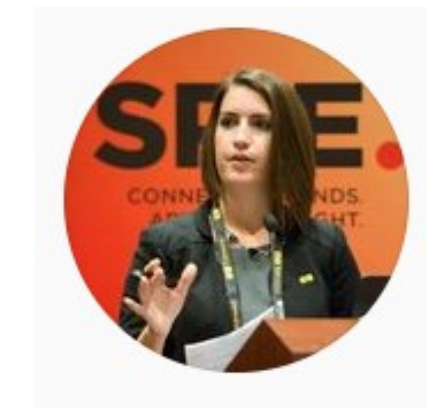


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