

Career Development Series 2022

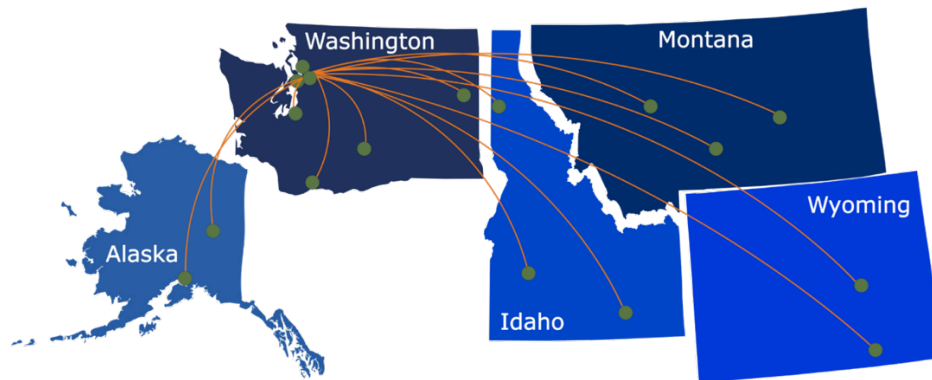
# **Establish and Navigate a Research Career: Forging Your Own Path and Expecting the Unexpected**

Presentation will begin at 12:00 PM (PT)



**ITHS**

Institute of Translational Health Sciences  
ACCELERATING RESEARCH. IMPROVING HEALTH.



## What We Offer:

- 1 Research Support Services:** Members gain access to the different research services, resources, and tools offered by ITHS, including the ITHS Research Navigator.
- 2 Community Engagement:** Members can connect with regional and community based practice networks
- 3 Education & Training:** Members can access a variety of workforce development and mentoring programs and apply for formal training programs.
- 4 Funding:** Members can apply for local and national pilot grants and other funding opportunities. ITHS also offers letters of support for grant submissions.

# Contact ITHS

## Director of Research Development



- Project Consultation
- Strategic Direction
- Resources and Networking

Melissa D. Vaught, Ph.D.  
ithsnav@uw.edu  
206.616.3875

## Scientific Success Committee

- Clinical Trials Consulting
- Guidance on Study Design, Approach and Implementation
- Feedback on Design and Feasibility

[https://www.iths.org/investigators/  
services/clinical-trials-consulting/](https://www.iths.org/investigators/services/clinical-trials-consulting/)

# Feedback

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At the end of the seminar, a link to the feedback survey will be sent to the email address you used to register.

Career Development Series 2022

# Establish and Navigate a Research Career: Forging Your Own Path and Expecting the Unexpected

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Presented by:

**Tueng T. Shen, MD, PhD**  
University of Washington



*The University of Washington acknowledges the Coast Salish peoples of this land, the land which touches the shared waters of all tribes and bands within the Suquamish, Tulalip and Muckleshoot nations*

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# Disclosures

I do not have any financial interests related to this presentation

*All artworks in this presentation are my own, and can be used with my permission*



*watercolor*

# Learning Objectives

At the end of the session, participants will be able to:

- 1 Identify at least one primary reason that you are pursuing a career in research
- 2 List at least one thing you wish you could be doing to further develop your career path
- 3 List at least one resource to use in developing your career path



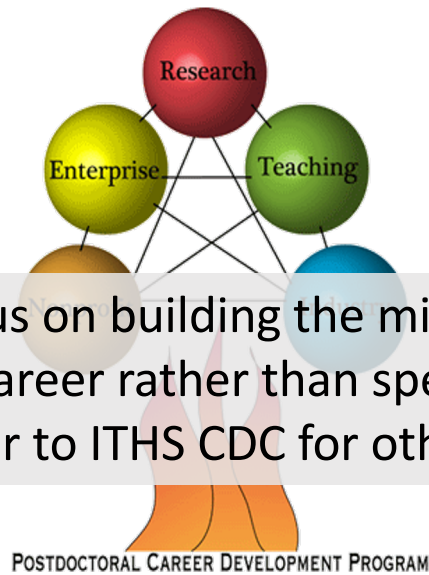
*Calligraphy:  
ink on rice paper*



# Focusing on Mindset



<https://medschool.vanderbilt.edu/career-development/path-to-career/>



POSTDOCTORAL CAREER DEVELOPMENT PROGRAM

<https://med.fsu.edu/pcdp/home>



<https://www.proclinical.com/infographics/2021-1/infographic-how-to-grow-your-career-in-clinical-research>

# Careers in Biomedical Research

- Diversity of the biomedical workforce is essential to the scientific enterprise
- Discrepancy still exist today among NIH grantees (31% women)
- Leaky pipeline in academic biomedical research is well documented

PNAS July 31, 2018 115 (31) 7943-7948; first published July 16, 2018;  
<https://doi.org/10.1073/pnas.1800615115>



*Acrylic on canvas*

# Overview

- Personal experience (career path)
- What I have learned along the way
- Motivation
- Institutional expectations
- Personal fulfillment
- Key factors for success
- Mentorship
- Continued process of improvement
- Your suggestions



*Acrylic on canvas*

# Personal Experience: Current Roles

## Clinical:

- Graham and Brenda Siddall Endowed Chair and Professor of Ophthalmology
- 50% effort for patient care (corneal surgeries) and education (fellows, residents and medical students)

## Research:

- Adjunct Professor of Bioengineering and global health
- Research on corneal biomechanics

## Administrative:

- Associate Dean of Medical Technology and Innovation, UW Medicine and College of Engineering



*Ink on rice paper*

# My plan?

Q: Did you always know that you will be a clinician scientist?

A: no

Q: Were you a pre-med undergraduate?

A: no

Q: How did you get to where you are today?

A: it is complicated...

My path has been nonlinear, with a lot of luck, a bit of planning, chance, serendipity, risks and embrace of the unexpected.



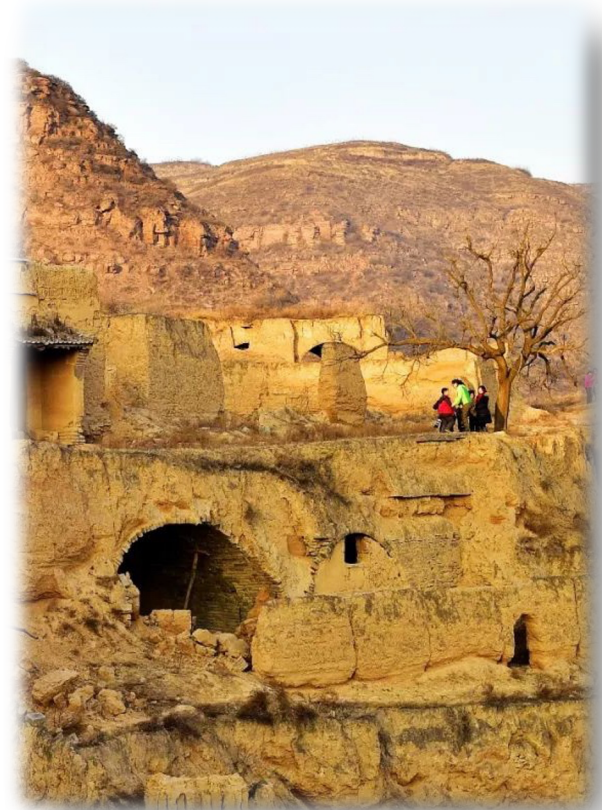
*watercolor*

# My home city



## LOESS PLATEAU (3000-10,000 feet above sea level)

- Cradles Of Chinese Civilization (records from 5000 Years Ago)
- City Of Coal
- The Poorest Regions In China
- Most Polluted City



# Mindset Shaped by Society

- Conformity is expected
- Set-formula and rigid structure for education
  - Early focus
  - College entrance exam
- Family background and gender dictate the future
- No question of authority
- Creativity—not rewarded
- Cultural Expectations
  - girls and their roles



*Self portrait (watercolor)*

# Coming to America: change of mindset



*Sculpture: bronze*

- Immigrate to the US
- Transition to college
- Language barrier (English)
- Learning new languages
  - Studio Arts
  - Computer science
  - STEM subjects

## Arts or Engineering?

- PhD in Medical Engineering and Medical Physics (MEMP) at MIT, Health Science and Technology (HST) program





# Exposure to Medicine

- HST Course: Introduction to Clinical Medicine
- MD after PhD training?
- Discovered Surgery
- Complete full clinical training
- Residency and fellowship in Ophthalmology



*Sumi ink on paper*

# Starting Academic Career

University of Washington:

- Superb Medical School
- Great Engineering School
- Outstanding Public Health program
- Nice city to raise a family



## Established Region's Artificial Cornea Program



**KING 5.com** / HealthLink  
Coverage You Can Count On

Seattle Sinus & Allergy Center (206) 682-6103  
Allergy or sinus problems? We can help you.  
> [seattledoctors.com](http://seattledoctors.com)

Seattle, Washington  
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- Advertising Info.

**ON 5 TV**  
Newslinks on KING

**UW performs first artificial cornea surgery**  
06:06 PM PDT on Wednesday, June 9, 2004  
By JEAN ENERSEN / KING 5 News

SEATTLE - For Joe Vallejo, 13 operations have taken a toll.  
"Up and down. My hopes get real high, then all of a sudden, straight down," he said.  
His last hope is an artificial cornea.

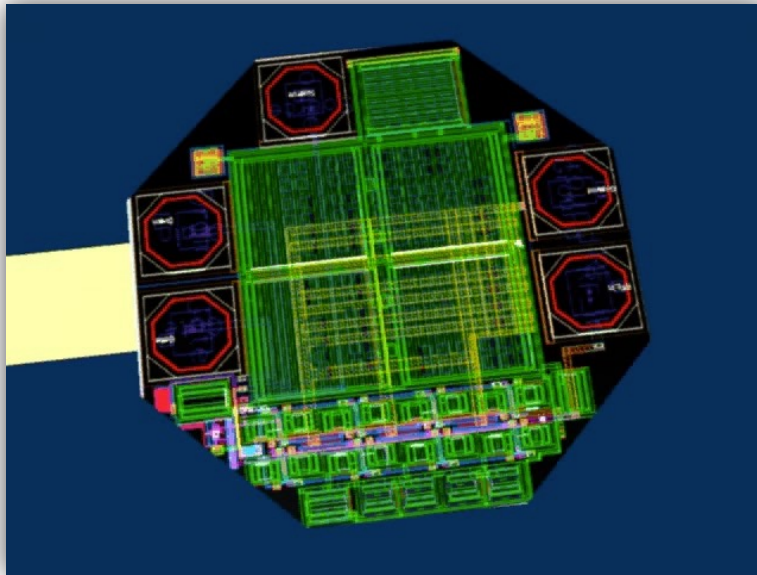
**Artificial cornea**

"It does not have issues with rejection and it has very good optics," said Dr. Tuen Shen.  
But the surgery will be complicated. Dr. Shen is one of the few doctors in the country who can do this procedure. It's considered a last resort for people like Joe, who've had donor corneas fail.  
"It really does make a big difference for those people who have no other choice," said Dr. Shen.

Unexpected increase in clinical load allowed building a busy and productive practice and fulfilling the unmet clinical need in the WWAMI area.

## A 2.3 $\mu$ W Wireless Intraocular Pressure/Temperature Monitor

Yi-Chun Shih, *Student Member, IEEE*, Tueng Shen, and Brian P. Otis, *Senior Member, IEEE*



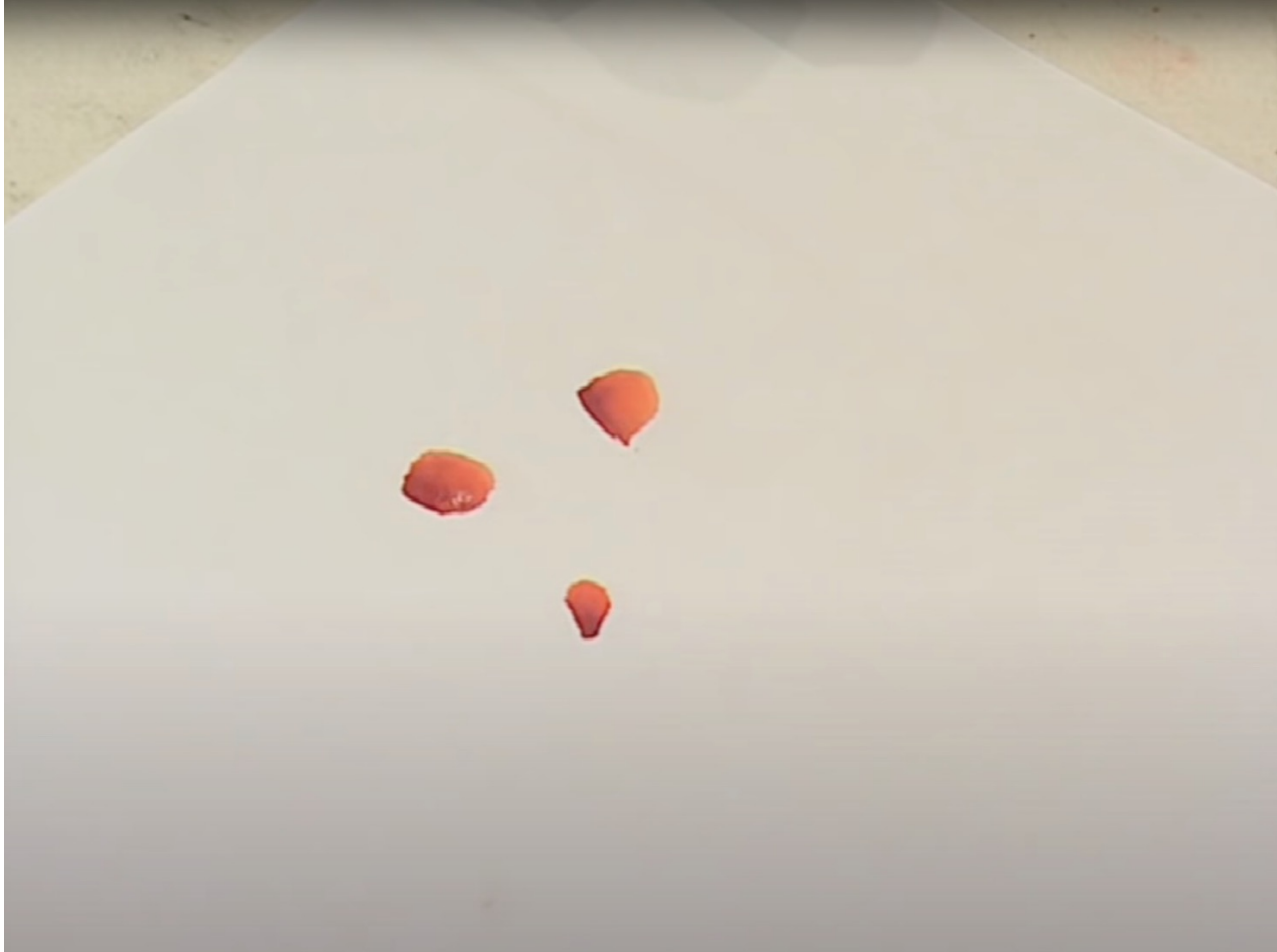
- **Funding Support:**
- NIH R01EY026532,
- DOD W81XWH-11-1-0735
- NSF (EFRI 0937710)
- NIH (R41EY019795 STTR)
- Coulter Translational Research
- Washington Research Foundation
- Glaser Foundation
- Giuliani Family Foundation
- Research to Prevent Blindness
- University Lions Club
- Utah Eye Bank

# What I have learned: Embrace the Unexpected

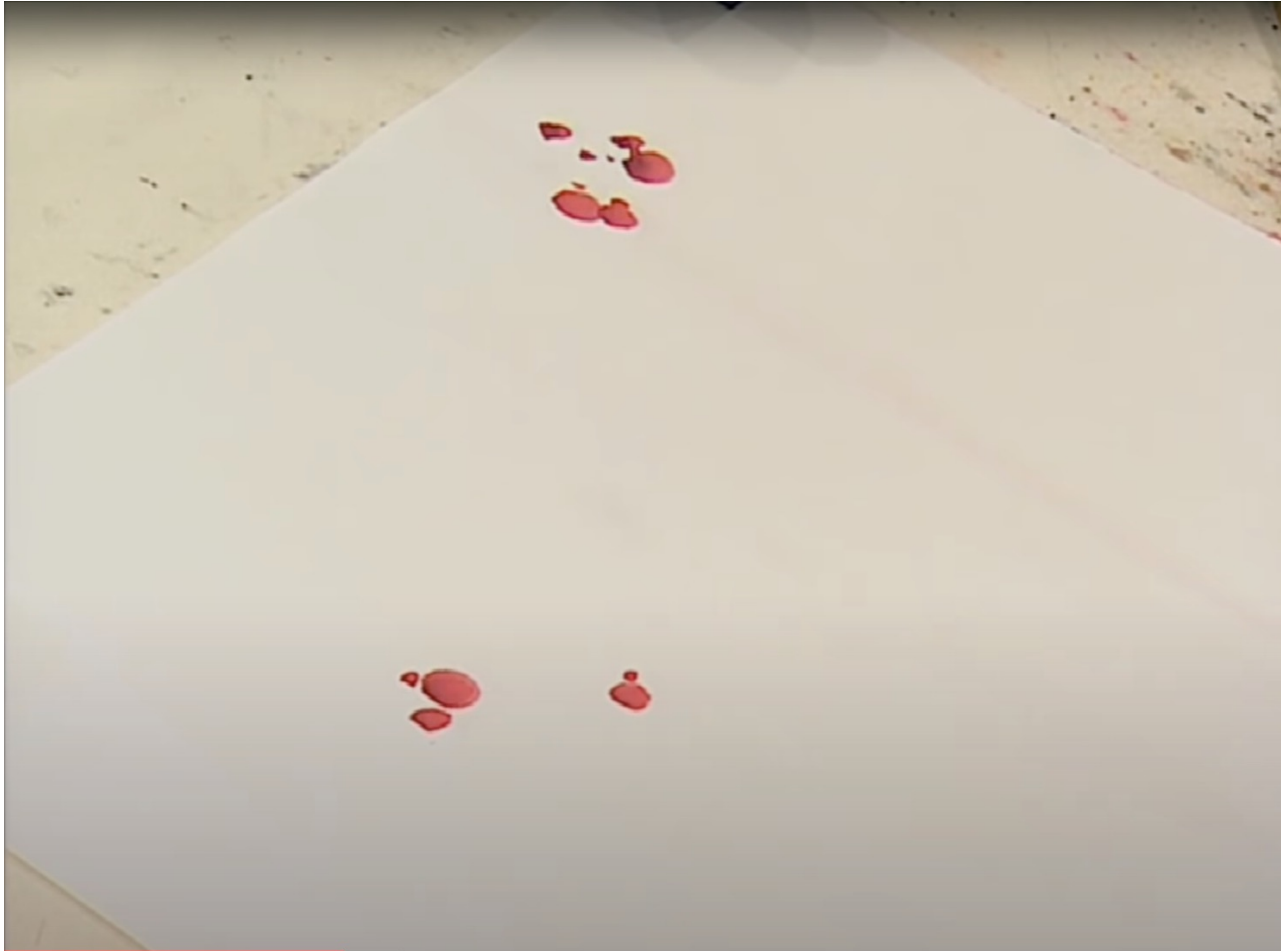
- It is ok not to immediately have an ideal path
- Keep an open mind
- Reach out to others for collaborations
- Establish a common language
- It is about the common goal
- It is not always about you
- Recognizing your strength
- Making connections from seemingly random events– I will use a painting analogy



*Acrylic on canvas*













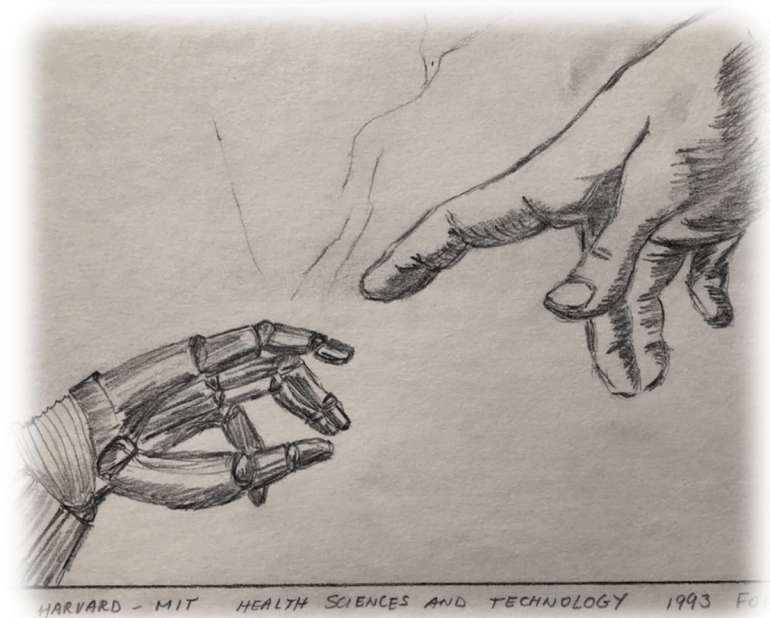






# My Motivations

- Provide the best patient care
- Educate fellows, residents, medical students, and engineering graduate students, and post-doctoral fellows
- Advance the field by cultivating close collaboration between medicine, engineering and global health
- Educate the public and the patients
- Foster professional growth of staff
- Be financially sound



*Pencil sketch*

# Your Motivation...

Q: What is important to you?

- Funding
- Independence
- Impact
- Recognition
- ...



*watercolor*

# Expectations

- Funding:
  - Traditional NIH funding (K, R awards)
  - Private Foundation awards
  - Translational science awards
- Publications
  - Peer reviewed journals
  - Patents for inventions
- Impact
  - Strong collaborations
  - Training and education
  - Societal good



*Sumi ink on paper*



# Define Success for you

- Funding
- Fame
- Freedom
- Improve public health
- Foster trainees to succeed
- Collaborations and teamwork
- Personal fulfillment
- Receiving recognition
  
- Process vs results



*Acrylic on canvas*

# Personal Factors

- Persistence and resilience
- Initiative
- Autonomy
- Personal and professional balance
- Time management



*watercolor*

Acad Med. 2016 April ; 91(4): 570–582. doi:10.1097/ACM.0000000000000979.

# Institutional Factors

- Mentorship/role model
- Resources
- Support
- Protected time for research
- Strong research community
- Relevant patient population



*Acrylic on canvas*

# A Balancing Act

- Institutional structure
- Rapid expanding fields
- Complex problems (language barrier)
- More clinical demand
- Less research funding
- Pandemic



# Mistakes or Opportunities?

Progression from one painting to another



*Acrylic on canvas*

Keep in mind the big picture



# Mentorship



*Acrylic on canvas*

# Friendships



*Acrylic on canvas*





# Summary

- Proactive— keep an open mind and create your own path
- Be curious --ask why not?
- Seek support from the institution
- Build best collaborations with the best people
- It is not always about you
- Focus on Impact, not the title
- Role models for the next generation
- Finding balance in life
- Imperfection is okay
- Expect and create change for the better, for the common good
- **Be 20/happy**



*Ink on rice paper*

# Thank You!

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Open for Questions

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## Feedback Survey

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A link to the feedback survey has been sent to the email address you used to register.

Please get out your device, find that email, and spend a few moments completing that survey before you leave today.

Tip: If on a mobile device, shift view to landscape view (sideways) for better user experience.