



# Around the IH World in 30+ Years

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December, 12<sup>th</sup> 2018

Professional Development Seminar

California Industrial Hygiene Council

San Diego, CA

# Conclusion: Recipe for a Successful IH Career

- 1 lb teamwork and networking
- 1 scoop of global perspective marinated with a strong technical skill set
- 2 cups clear, concise, responsive, factual science-based communication (both written and verbal varieties)
- Equal parts transparency and ethical grounding
- 1 liter enthusiasm sautéed with 1 Tbs of gumption
- 10 pinches of passion
- 8 oz dark chocolate
- 750 ml cabernet sauvignon (can substitute 750 ml highland single malt scotch)
- Blend mixture and bake at 350° for 30+ years

# Agenda

- Background
- The Arc and Trajectory of My IH Work Experiences
- Site Scenarios, Learnings and Initiatives
- Professional Engagement
  - Global Outreach
  - Presentations
  - Teaching and Mentoring
  - Professional Organizations

# Academic Background

- **B.A.**, Biology, Lafayette College, Easton, PA; 1980
- **M.P.H.**, Environmental Health Sciences Industrial Hygiene Program, University of California at Berkeley, School of Public Health, Berkeley, CA; 1984-1986
- Currently serve on the UC COEH Advisory Committee



- Lesson Learned: Support your alma mater!

# Citizens (Communities) for a Better Environment 1981-1986

- Non-Profit Environmental Organization
- Focused on aerial urban insecticide (carbaryl) spraying operations
- Wastewater discharges to the SF bay
- Air emissions
- Committee Chair - Needs Assessment for the SF Household Hazardous Waste Collection Program

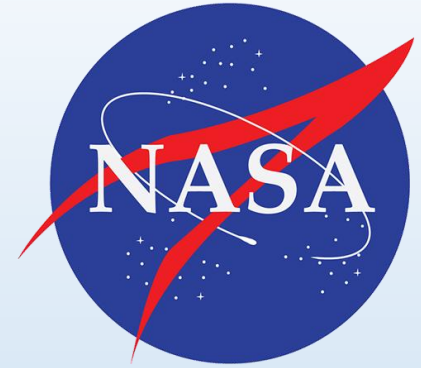


## Lessons Learned:

- The regulatory players in the SF Bay Area: DHS, BAAQMD, ARB, RWQCB, CDFA
- Need to quantify exposures to the public



# Safety Specialists Inc., Santa Clara, CA



## Industrial Hygiene Summer Intern (1985)

- Under the wing of Alfredo Salazar, served as a consultant on IH issues for companies throughout Silicon Valley. Conducted exposure assessments and report writing.
- NASA project to evaluate compressor oil mist exposures on a converted C-130 infrared telescope aircraft at 40,000 ft.

# Research Intern – Department of Industrial Relations Advisory Committee - 1986

- Appointed to 2 subcommittees dealing with fiscal/programmatic problems in the California Hazard Evaluation System and Information Service (HESIS).
- Conducted staff interviews, identified program shortcomings, wrote critique of program, and developed recommendations.



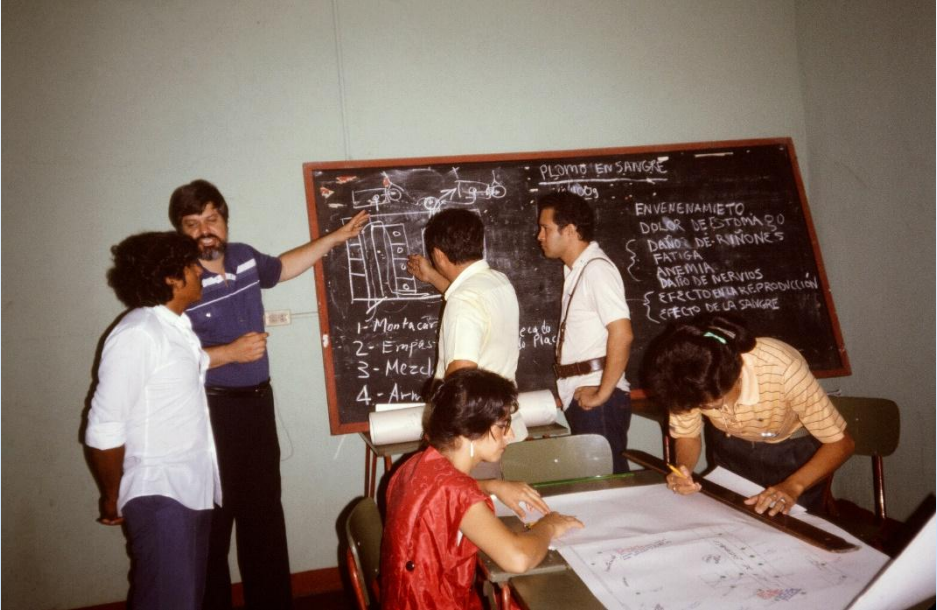
**After graduating from UC Berkeley School of Public Health, I began a 6 month trip through Central/South America – with a 2 month stopover in Nicaragua....**

# Technical Aid Project to Nicaragua: Sept-Oct 1986

- Worked with Nicaragua Technical Aid Project – part of APHA.
- Request for assistance from the Nicaragua Ministry of Health due to severe acute lead poisoning in the battery plant where many of the workers were hospitalized.
- Worked with Raphael Moure-Eraso from AFL-CIO, later a professor at Lowell University and then Chair and CEO of the US Chemical Safety and Hazard Investigation Board.
- Designed ventilation system
- Participated in worker training program on lead exposure
- Drafted sections of final report on colloquium for the Nicaraguan Ministry of Labor, presented at the 1987 AIHCE in Montreal, Canada.
- **Lessons Learned: Be adventurous! Think globally, act locally!**
- **Keep your hands to yourself in unknown workplaces!**



# Willard Battery Plant Project – Managua, Nicaragua



# Rohm and Haas Company, Hayward, CA - internship

- Rohm and Haas (now part of Dow Chemical) is a specialty chemical manufacturer and R&D company.
- **Lesson Learned: Don't be afraid of what you don't know. Ask questions!**
- March - Sept 1987 – completed 6 months internship as site IH at acrylic polymer manufacturing facility in Hayward.
  - Job Exposure Profiles
  - Exposure monitoring
  - Training
  - IH Program development
  - Respirator fit-testing
  - Ergonomic evaluations
  - Safety Committee



# Safety Specialists Inc., Santa Clara, CA

## Industrial Hygiene Consultant (1987)

- Consultant on IH issues for companies throughout Silicon Valley. Conducted exposure assessments and report writing.

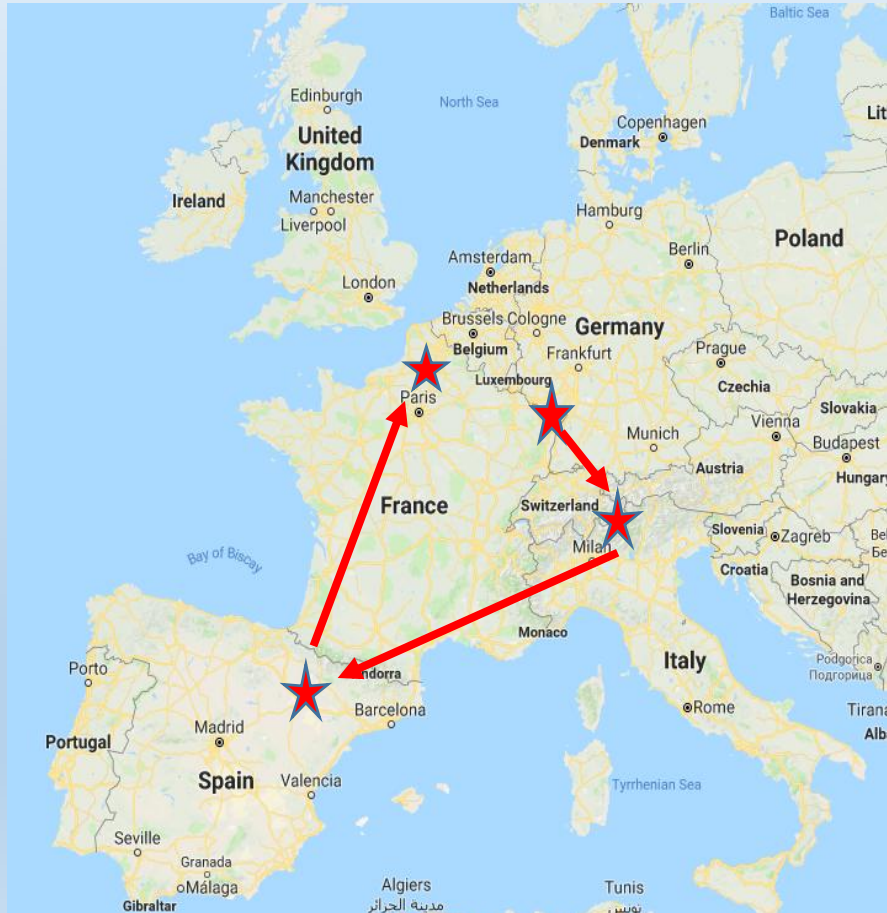
## Lesson Learned:

- **Finally a job with a decent salary and benefits!**
- **Don't burn any bridges!**

**However, it only lasted 3 months! .....When opportunities knock – take them!**

# Rohm and Haas 18 Month European Assignment 1988 – 1989

An offer I could not refuse!



- 4 manufacturing facilities:
  - **Lauterbourg, France** (Alsace Lorraine) - Ion Exchange Resins, Acrylic Polymers, Plastic Additives - **1, 3 Butadiene**
  - **Mozzanica, Italy** (near Milan) – Herbicides/Fungicides, Ion Exchange Resins for pharmaceuticals, Acrylic Polymers - **Pharma and Fungicides don't mix**
  - **Tudela, Spain** (near Zaragoza) – Acrylic Polymers **Cyanide Antidote - Amyl nitrite vs amyl acetate**
  - **Chauny, France** (north of Paris) – Ion Exchange Resins (chloromethylation), **CMME/BCME**
- Project to train new IEs and implement a new qualitative assessment system (Job Exposure Profiles) at each location.

# Alsace, France



Frederique Parrot – now  
President of the French OH  
Society

# Northern Italy

## Bergamo

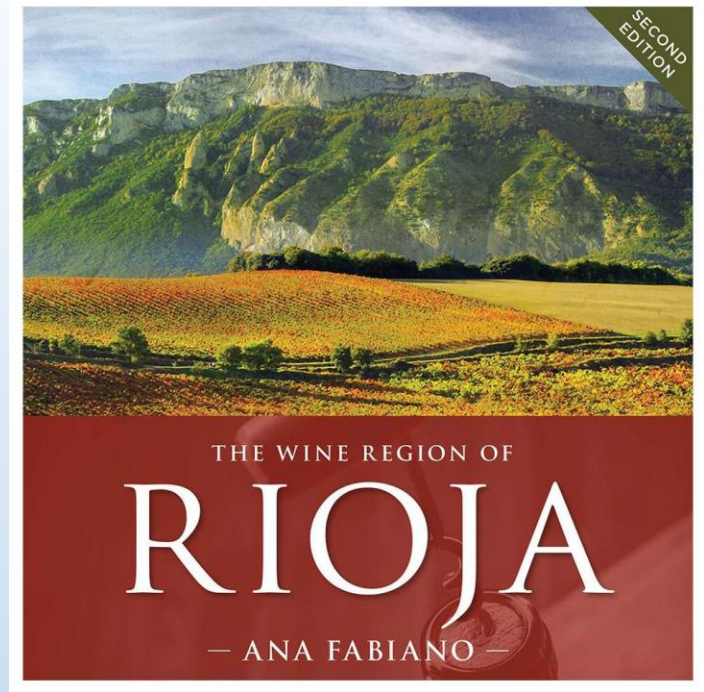


# Spain

San Sebastian



Tudela



Rioja Wine Region

Barcelona



# Northern France

Normandy



Paris

Champagne Region



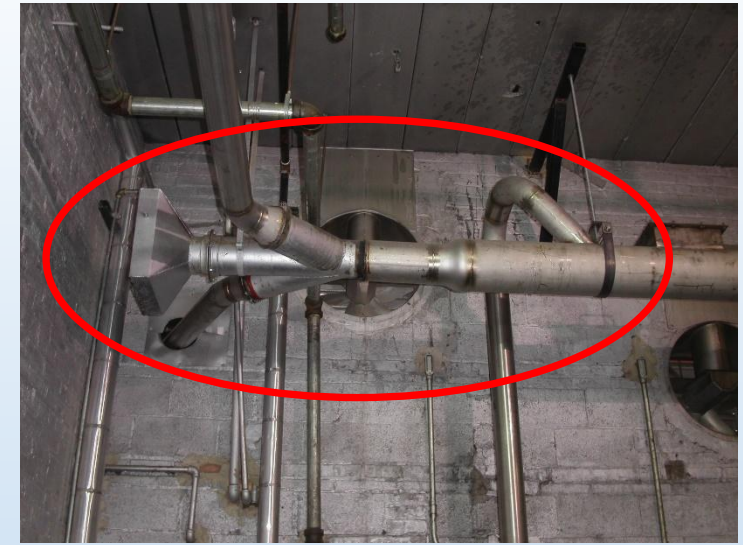
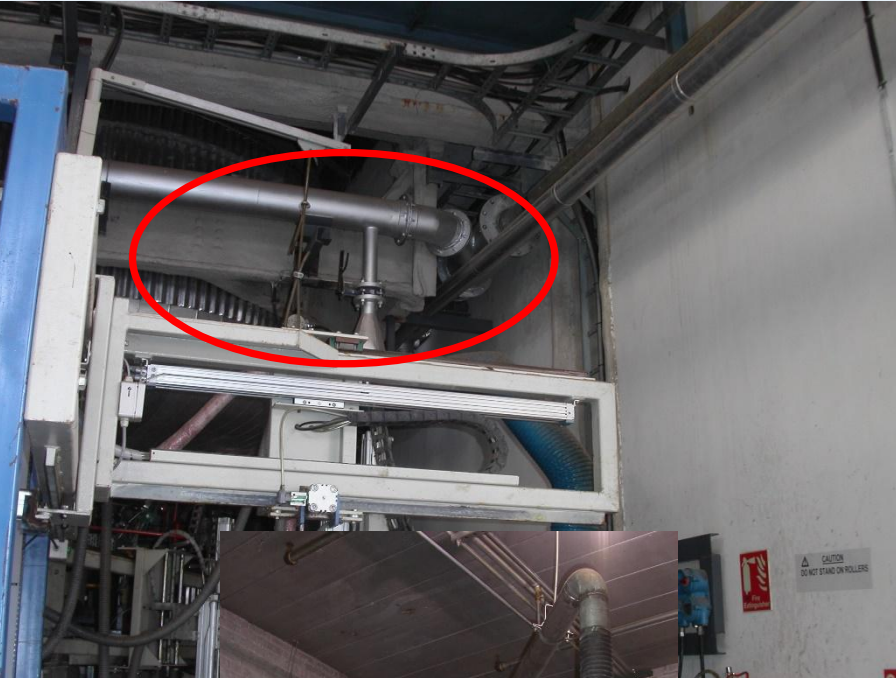


# Rohm and Haas - Corporate and Site EHS position 1989 – 2007



- Global IH technical consultation for ~10 businesses incl. ~125 manufacturing and R&D sites in 27 countries.
- 75 global EHS audits
- Developed Exposure Assessment Strategy and Maintained Databases
- Conducted Workplace Exposure Assessments at new acquisitions and at Hayward site.
- Led compliance reporting for global exposure monitoring activity/ over-exposure follow-up.
- Authored Global IH SOPs and Guidelines
- Organized IH Roundtable at AIHCE
- Corporate IH website
- Global Ergonomics Program and SOP/Facilitated Site Ergonomics Team
- Global IH Training to over 300 EHS and engineering personnel
- Preceptor to 10 UCB graduate student summer interns at the Rohm and Haas Hayward plant, 1993-2007.
- Facilitated site Safety Committee.
- Managed RCRA compliance, fugitive emission and storm water monitoring programs
- **Lessons Learned: Find mentors/Act as a mentor/Support internships**
- **Build your network!**

# Ventilation Design Issues



# Ventilation Interventions



Drum Vent



- Organized 1<sup>st</sup> ventilation design training for R&H Engineers and Global EHS personnel
- Developed Ventilation Guidelines
- Drum Vent introduction

## Stack Design



# Rohm and Haas Fundamentals of IH Course (1989 -2007)

- Annual 1-week training sessions held in US, China, Thailand, Argentina, Mexico France for over 300 IH Coordinators







## Ergonomics Training



# Other Rohm and Haas Experiences and Learnings

- Bis-(Chloromethyl) Ether (BCME) Tragedy
- Management Commitment
- Integrated EHS Disciplines: Environmental, Safety, Med Surv, Epi, Product Stewardship, Process Safety, IH/AIHA Accredited IH Laboratory
- Management Systems – Global SOPs, Compliance Audits and Follow-up, Training, Databases, >OEL actions
- Exposure Assessment Strategy/Job Exposure Profiles/Stats/Bayesian Decision Analysis
- Noise – business case for adopting ACGIH TLVs
- Heat Stress – business case for adopting ACGIH TLVs
- Borden, Shipley, Morton Salt and Morton International Integrations

# Inagua, Bahamas





# Stiefel Laboratories/Glaxo-Smith Kline, Palo Alto, CA 2008 - 2010

## Global IH and Safety Manager/EHS Manager Stiefel West Coast site

- Dermatology Pharmaceutical Company with 9 sites globally (US, Ireland, Mexico, Pakistan, Brazil, Australia, New Zealand, Singapore). Minimal IH Program.....
- Global EHS Management System
- Global Harmonized SDS System.
- Global EHS standards and audit protocols.
- Technical industrial hygiene surveys at Stiefel locations.
- Global Business Continuity Plan for Pandemic Flu Preparedness.
- EHS training modules.
- R&D site EHS activities including EHS permits, written EHS programs, inspections, training, and drills.
- EHS Committee and Emergency Response Team
- **Lessons Learned: Participate in and support your local OHS/EHS organizations! They will support you!**
- **Be persistent when looking for a job! There is light at the end of the tunnel!**



Nektar Therapeutics, San Francisco, CA 2010 - Present  
Director, Environmental Health and Safety



- Global EHS program for immuno-oncology/immunotherapy focused R&D biopharmaceutical company
- 3 sites: San Francisco, CA, Huntsville, AL, Hyderabad, India; ~600+ employees; EHS Staff = 10 including 5 CIHs
  - EHS Management Systems
  - Potent Compound Management
  - Laboratory and Biosafety
  - Respiratory Protection
  - Emergency Response
  - Ergonomics
  - Regulatory Compliance
  - Exposure Assessment and Control
  - Incident Management
  - Management of Change in R&D
  - Training
  - Radiation Safety

# Hyderabad, India - Nayati International – OH Learning W501 and W505 Courses - Curriculum from OHLearning.com, two 5-day courses for 18-22 students

Mentored Nektar India EHS  
Associate Director for CIH Exam  
– 1 of ~20 in India



# Site Scenarios and Learnings



- Vinyl Acetate (Borden Acquisition) – Carson, CA
  - **Lesson Learned – Management Commitment**
- Solvent exposures – Arizona cotton processing customer visit
  - **Lesson Learned: Protect yourself as well as the workers around you**
- Fatalities - Deerpark TX, Cincinnati, OH
  - Lessons Learned:**
    - **Use of Acronyms can be dangerous**
    - **Non-routine tasks must undergo thorough EHS Reviews**

# Site Scenarios and Learnings

- Job Exposure Profiles – Cilegon, Indonesia
- Herbicide handling – San Jose, Costa Rica
- Fungicide migration – Barranquilla, Colombia



# Site Scenarios and Learnings

- Audit on EHS Reviews - Jacarei, Brazil
- Hazcom/IP – Chonan, Korea
- Safety Culture - Maptaphut, Thailand



# Zarate, Argentina – Sensitization Investigation









# Developing World Outreach Initiative (DWOI)

- Chair and Founder (2006), sub-committee of the Northern California Section of the American Industrial Hygiene Association, 2006 to present.
- Training Workshops (~5-7 per year)
- Technical Projects (~3-4 per year)
- Reference Text and IH equipment donations/shipments
- AIHA International Affiliate memberships

# Global Impact: Looking back on 12+ years of DWOI



Stars indicate 25 developing countries that DWOI has supported

# Small Technical Grants (~\$2K):

Requests for Proposals are submitted by NGOs and Universities, then reviewed, rated, and selected by DWOI for funding.

- **INDIA**
  - Silica Exposure amongst Stone Crushers
- **INDIA**
  - Byssinosis & Tuberculosis amongst Power Loom Weavers
- **INDONESIA**
  - Asbestos Exposure during Manufacturing
- **KENYA**
  - Lead Exposure during Battery Recycling
- **NIGERIA**
  - Mercury, Hydroquinone Exposures in Beauty Parlors
- **SOUTH AFRICA**
  - Acrylates, VOC Exposures in Nail Salons
- **TANZANIA**
  - Silica Exposure in Gold Mining Operations



# 45 DWOI Training Grants Since 2008

- Cambodia
- China
- Hong Kong
- India
- Indonesia
- Kenya
- Mexico
- Philippines
- Singapore
- Vietnam



# DWOI Sponsored AIHA International Affiliate Memberships

Annually sponsor individuals and representatives from the following NGOs:

- Asia Monitor Resource Center (AMRC)
- Asia Network for Rights of Occupational and Environmental Victims (ANROEV)
- The Institute for Occupational Health and Safety Development (Philippines)



# DWOI OHS Reference Book Shipments to NGOs and Universities Since 2007

- Afghanistan
- Bhutan
- Botswana
- Cameroon
- Chile
- Ethiopia
- Ghana
- Grenada
- Indonesia
- Kenya
- Malaysia
- Namibia
- Nicaragua
- Nigeria
- Singapore
- South Africa
- Sudan
- Tanzania
- Turkey
- Uganda

- DWOI has also gained free access to several AIHA electronic publications for distribution to NGOs and Universities including:

- A Strategy for Assessing and Managing Occupational Exposures
- Industrial Hygiene Reference and Study Guide
- The Noise Manual - 5th edition
- Toxicology Principles for the Industrial Hygienist
- Welding Health and Safety- A Field Guide for OEHS Professionals
- The Occupational Environment: Its Evaluation, Control, and Management



# DWOL Equipment Donations

Donations from SKC or used equipment from AIHA-NCS members:

- 2008 Nigeria
- 2012 Indonesia (University)
- 2012-14 Indonesia (NGO)
- 2012 Grenada
- 2015 South Africa



# Presentation Venues

## International/National Conferences

- American IH Conference and Exhibition
- National Ergonomics Conference
- New Zealand Occupational Hygiene Society
- Organization Resource Councilors, Pacific Rim Roundtable

## State and Regional Conferences/Forums

- California IH Council Professional Development Seminar
- Phylmar Regulatory Roundtable
- Peninsula Industry Business Association Seminar

- Contra Costa County California CAER IH Group Meeting
- NCS/Sacto Local Sections

## Universities

- University of Oregon, Labor Education and Research Center, Workplace Health and Safety in the Global Economy Conference
- UCSF Grand Rounds – Occupational Medicine Program on Global Health
- UC Berkeley Global Health Careers Seminar Roundtable



# Presentation Topics

**Lesson Learned: Share what you know!**

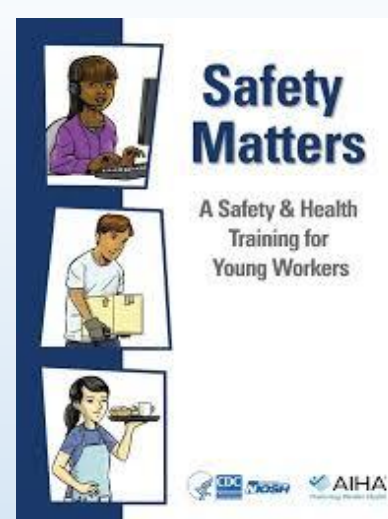
## **Topics:**

- **Establishing a Sustainable EHS Program in India**
- **EHS Supply Chain Issues in China**
- **Developing and Retaining IH Talent Globally**
- **Globalizing an IH Program**
- **Local Exhaust Ventilation**
- **Respiratory Cartridge Change-Out Frequency**
- **Exposure Assessment Strategies**
- **Global Ergonomics Program**
- **EHS Management of Change Process**
- **Young Workers Health and Safety Initiative**
- **Developing World Outreach Initiative and Workplace Health Without Borders**

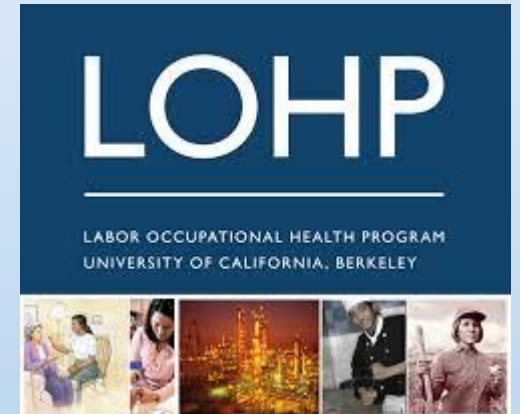
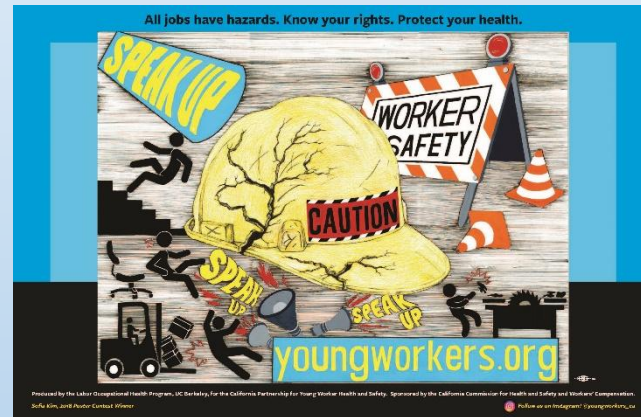
# Teaching Experience

- **Lecturer** for U.C. Berkeley, SPH, Global Occupational Health (PH 290), Fall 2018
- **Preceptor** to 10 UCB SPH graduate student summer interns at the Rohm and Haas Hayward plant, 1993-2007.
- **AIHA Mentor** – for UC Berkeley School of Public Health EHS Graduate Students 2011-2013.
- **Instructor** for PDC workshop on EHS Auditing for the Tri-state (NJ, NY, PA) Industrial Hygiene Association in Princeton, NJ
- **Author** for **Distance Learning Modules** on:
  - Skin sensitization
  - Local exhaust ventilation
  - Respirator cartridge change-out frequency
  - Hearing conservation and noise control
  - Exposure monitoring
  - Ergonomics

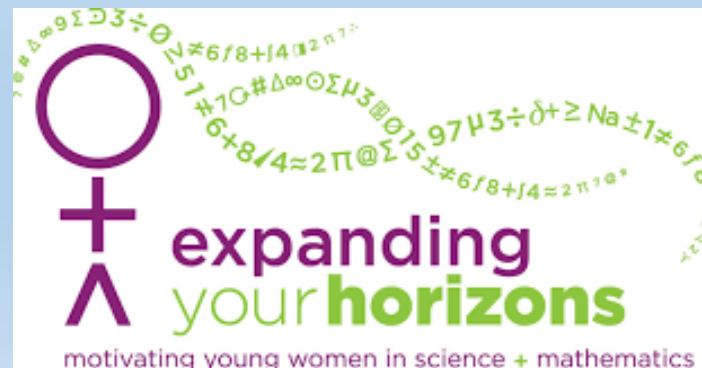
- AIHA Teen Task Force – **Safety Matters**



- California Partnership for Young Worker Health and Safety



- **Expanding Your Horizons** in Science and Math Conferences for Young Girls – **Industrial Hygiene as a Career**



# Professional Memberships and Service

## Lesson Learned: Give back to the profession!

- The 11<sup>th</sup> **International Occupational Health Association** 2018 Conference – International Scientific Planning Committee (2017-2018)
- **Workplace Health Without Borders** – U.S. Branch – Board of Directors (2017-2018)
- **California Industrial Hygiene Council** (CIHC) representative (2009-2010, 2016 - present)
- **Center for Occupational and Environmental Health, UCSF/B/D** Advisory Committee Member, 2006-present
- **Center for Occupational and Environmental Health, Univ. of Michigan**, Advisory Committee Member, 2016-present



**IOHA**



*Advancing public policy to improve the health and safety of workers and the community.*

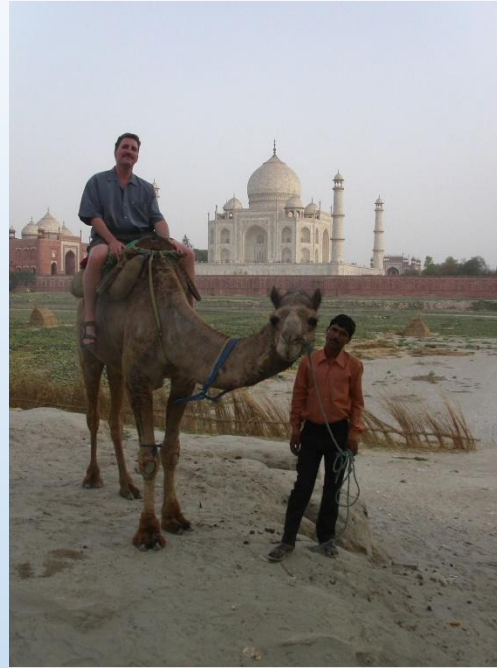


# Other Professional Experiences and Affiliations

- Co-Chair, **AIHA/MIHA Asia-Pacific Conference Planning Committee**, Kuala Lumpur, Malaysia, November 2014
- Chair, **AIHA Asia-Pacific Conference Planning Committee**, Singapore, November 2013
- Secretary, Chair, Past-Chair **International Affairs Committee**, American Industrial Hygiene Association, 2011 - present
- President-Elect, President, Past-President, and current member **American Industrial Hygiene Association Northern California Section**, Board member 2005-2008
- Member, **AIHA Yuma-Pacific Section**, AIHA 2008-present
- Member, **ABIH, AIHA, ACGIH**

# India

## Agra

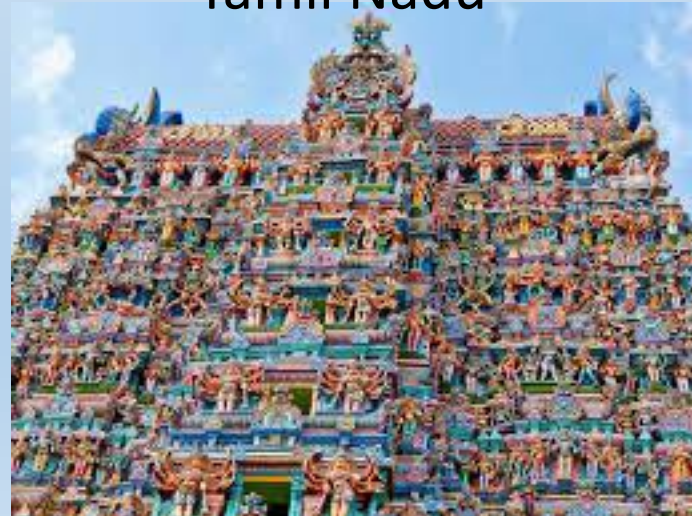


## Mumbai



## Matra Mandir, Auroville

## Tamil Nadu



## Munar, Kerala



# Tokyo, Japan



# China

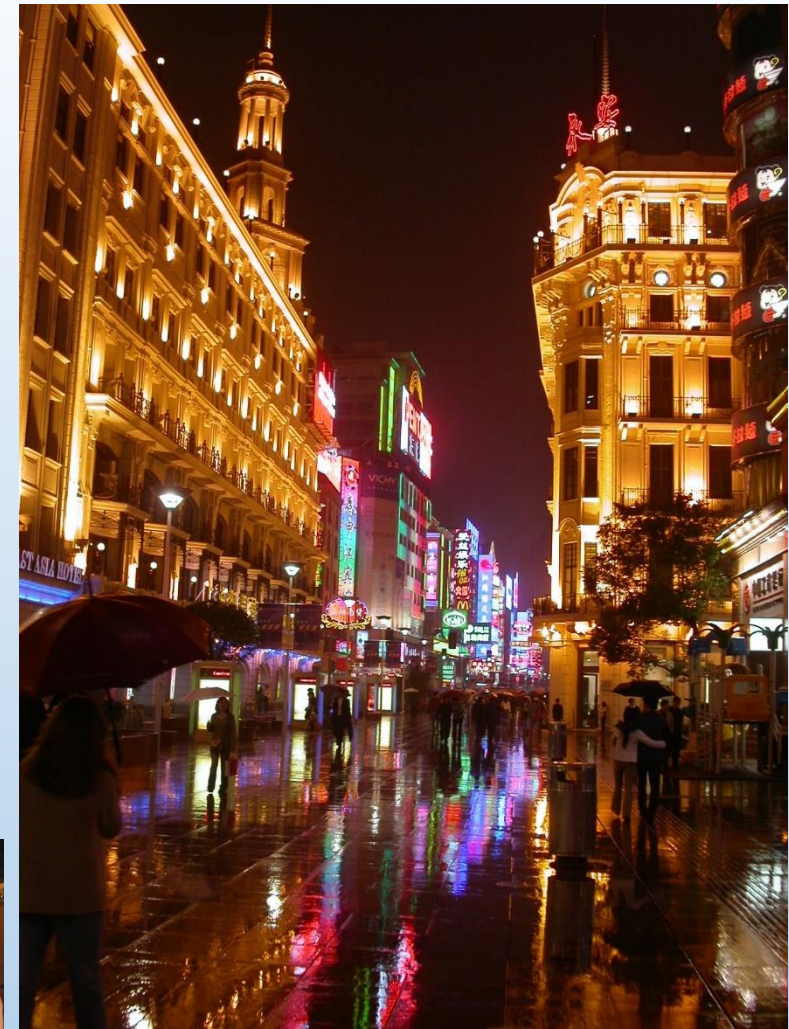


Pearl Tower, Shanghai



Great Wall

Nanjing Road, Shanghai

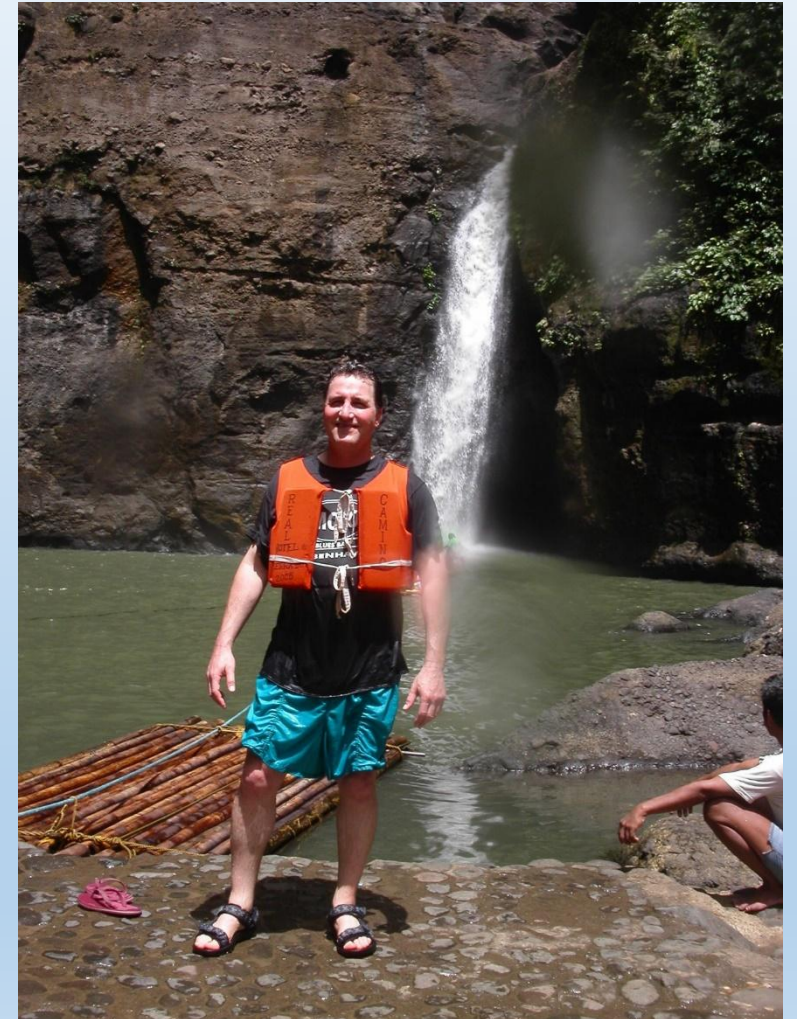


Tiananmen Square, Beijing





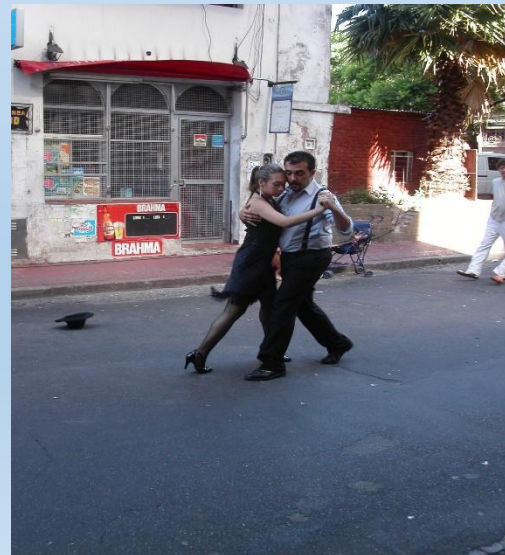
# Philippines - Magdapio River, Pagsanjan Falls (where "Apocalypse Now" was filmed).



# Northern New Zealand



# Buenos Aires, Argentina



# Seoul, South Korea



# Bangkok, Thailand



# Final Thoughts

- **Cultivate your professional connections and friendships.**
- **Understand that teamwork and partnership is better than top down command and control style in business settings.**
- **Learn the business language. Frame your problem statements and options for a path forward.**
- **You will achieve the level of EHS compliance you expect.**
- **Build the safety culture – it's a journey. It will take time.**
- **It's taken me over 30 years!**

Any Questions?

Thanks!

Richard Hirsh, MPH, CIH, FAIHA

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