

Evolving from the “Safety Guy” to COO

Managing Risk at a National Laboratory

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BOLD PEOPLE VISIONARY SCIENCE REAL IMPACT



U.S. DEPARTMENT OF
ENERGY

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NATIONAL
ACCELERATOR
LABORATORY

SLAC-at-a-glance

SLAC



U.S. DEPARTMENT OF
ENERGY

Office of
Science



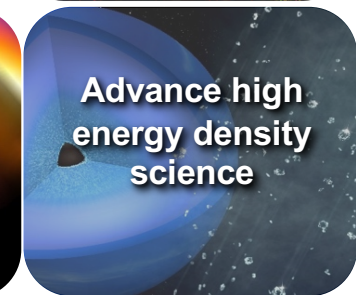
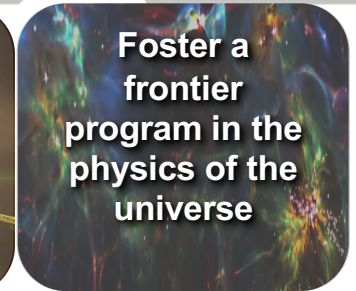
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US\$360M operating
US\$230M capital projects



Nobel Prizes
(1976, 1990,
1995, 2006)



Background

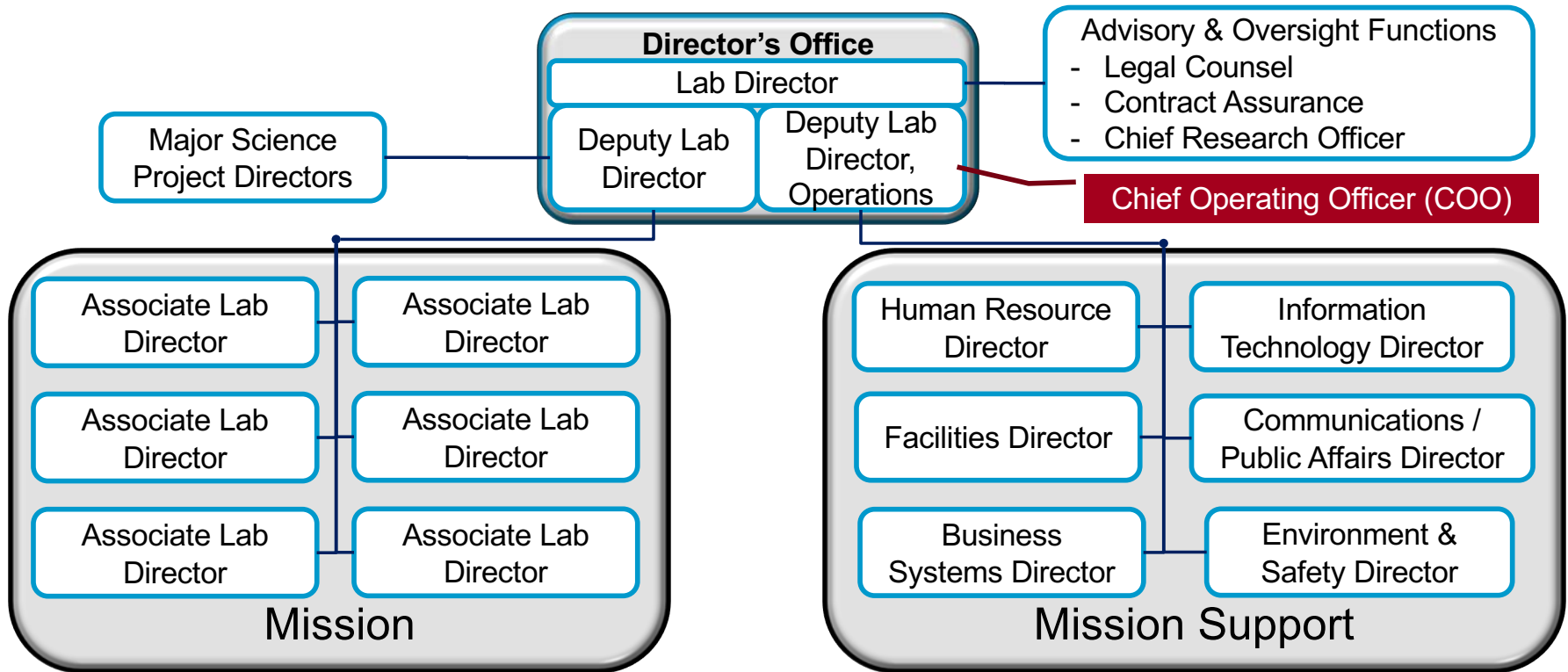


- Undergraduate and graduate degrees in Biological Science
- 9 years in ESH in the microelectronics industry
- Co-founded an ESH consulting/engineering firm (15 years)
- Joined SLAC 12 years ago
 - Chemical & General Safety Dept. Head
 - Deputy Director, ESH Division
 - Director, ESH Division
 - Deputy Director for Operations | COO

Emergency Response

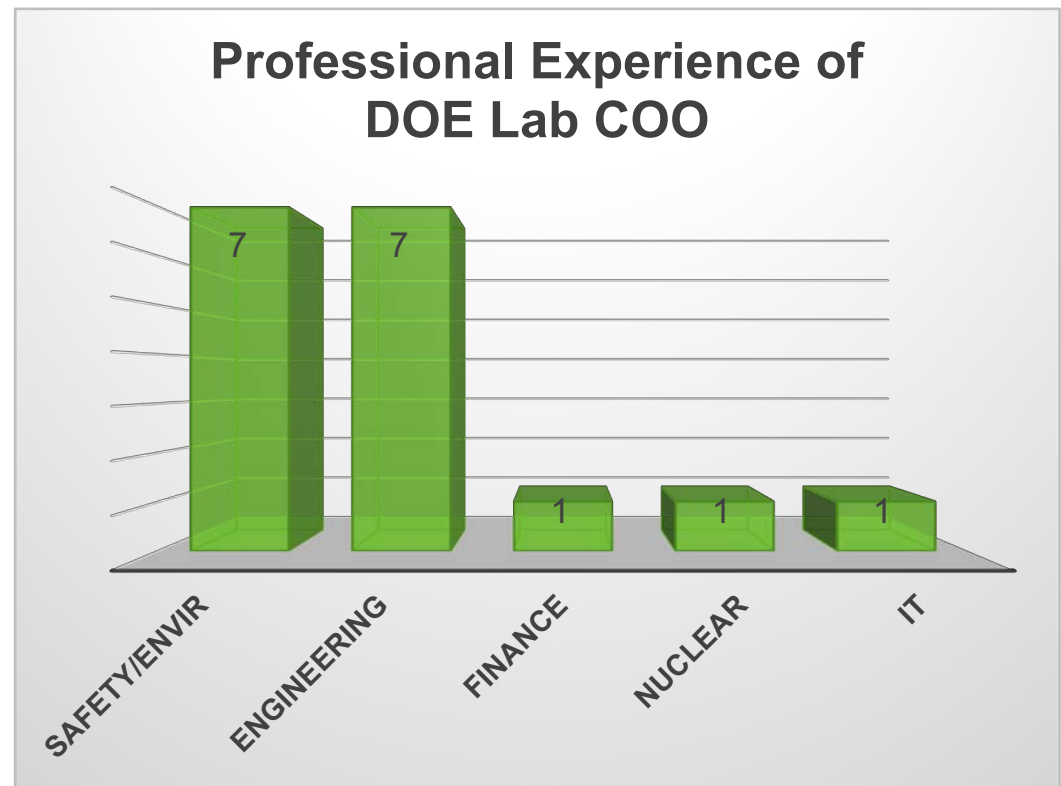
- Volunteer Firefighter
- US HHS Disaster Assistance Team

Typical organizational model



COO backgrounds within the DOE Labs

- Historically, the most common professional background has been engineering
- In the last several years, an increasing number of COOs have come from safety or environmental management professions
 - 3 of the last 4 COOs



Why Safety/Environment to Operations Management?

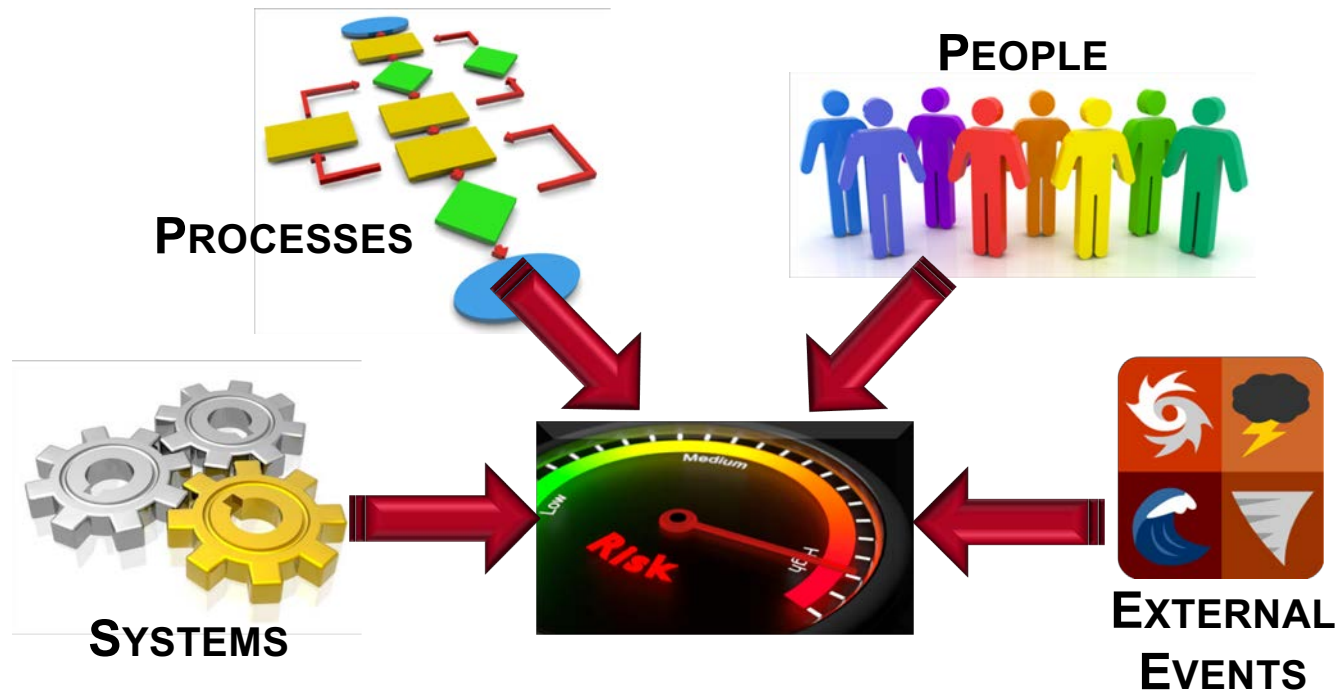


“I believe that to be a successful ES&H leader one has to know enough about all the operations to manage the risk inherent in operations, research, construction, etc. Ensuring policies, procedures, human capital, and material conditions are appropriately balanced to manage risk is the basic undertaking. In addition, M&O contracts are generally heavy on financial and safety requirements, and the the ES&H leader has to also be fluent in managing these contractor requirements.”

“The COO role is closer to ESH because it involves anticipation, recognition, evaluation, and control/mitigation of operational and business risks to the Institution. My mantra is to anticipate and recognize problems as they are emerging and intervening as early as possible to reduce the severity of the outcome.”

Operational Risks

The chance of detrimental outcomes due to an issue with people, systems, procedures, and external events.



Operational Risks



Top operational risks faced by institutions



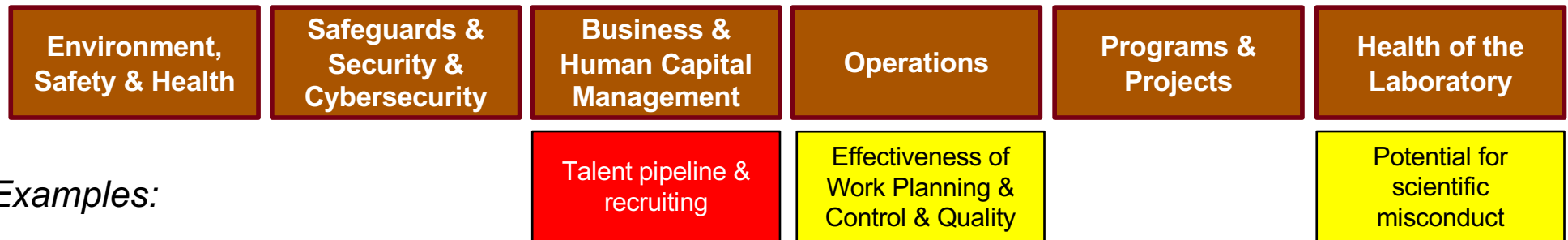
Risk Management Process



Enterprise Risk Management at SLAC



- Division-level risk assessments; workshop annually
- Enterprise (institutional-level) risk registry



Examples:

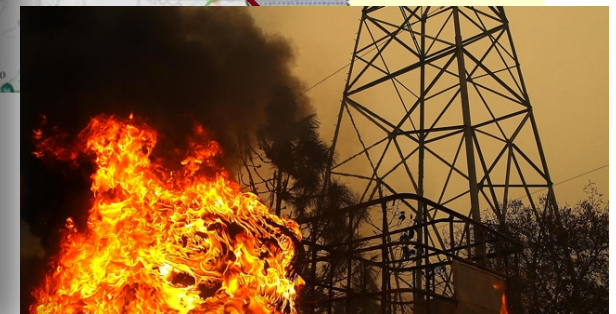
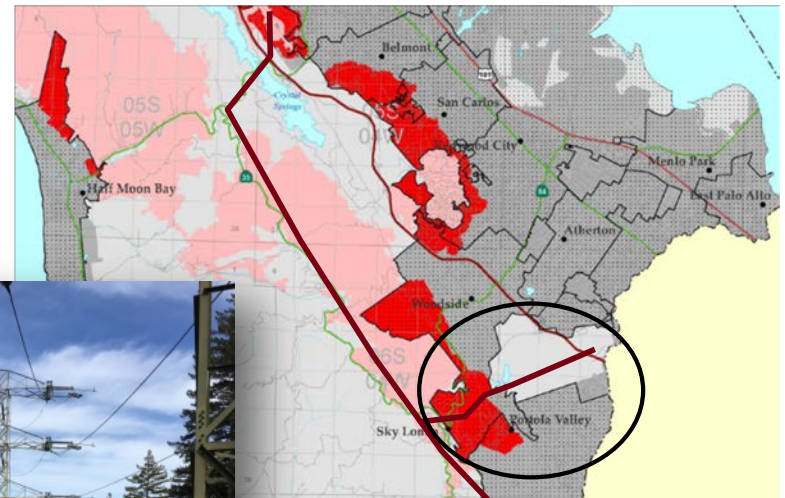
- Responsible line manager assigned to every risk on the registry
- Quarterly Director's Assurance Council
 - Senior management team + representation from Stanford University
- Semi-annual update of risks to the Board of Overseers

Example: 230 kV Powerline Risk

- Main power supply is a 9km, 230kV line through woodland and residential areas
- Fire risk is substantial
 - Historical 50 yr cycle, but climate change is increasing fire conditions in NorCal
 - Multi-million dollar homes; impact to mission; reputational risk; risk to firefighters
- Required improved powerline fire prevention efforts

Operational Risks

- Science Mission
- People & Community
- Reputational
- Financial
- Legal




Example: 230 kV Powerline Risk

- Vegetation management plan
- Remote fault protection relays through PG&E
- Remote breaker operation from power substation

		Severity			
		Minor	Medium	Major	Catastrophic
Likelihood	Expected	Monitor & manage risk	Management effort required	Management effort required	
	Possible	May be acceptable with monitoring	Monitor & manage risk	Management effort required	Extensive management effort required
	Low	Acceptable	May be acceptable with monitoring	Monitor & manage risk	Management effort required
	Not likely		May be acceptable with monitoring	Monitor & manage risk	



Balancing the science mission and institutional protection

A stack of five smooth, dark grey stones balanced on top of each other, set against a background of a sunset or sunrise sky with a gradient from blue to yellow. The stones are positioned on the left side of the slide.

Mission support enables mission objectives in the most efficient and effective manner possible, while protecting Stanford University's and DOE's assets

– Bill Madia

Balancing the science mission and institutional protection



Lean too far toward Mission:

- Institution is put at risk
- Operational problems impact Mission performance
- Sponsors lose confidence and reputation is put at risk impacting future investment

Lean too far toward assets protection:

- Mission is restricted
- Not viewed as supportive
- “We versus They” confrontational culture is created

Summary

- An critical, underlying skillset for senior management is risk management – Effective managers manage risk
- Recognition, assessment, control, and improvement is the underlying principle of both safety & environmental management and overall operations management
- Must maintain a reasonable balance between protection and mission and remember that the goal is to support safe and sustainable science



QUESTIONS?

