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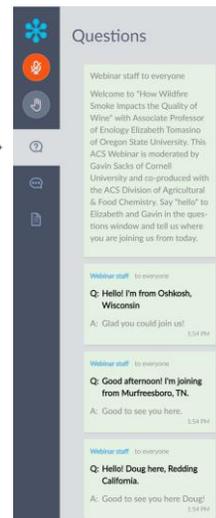
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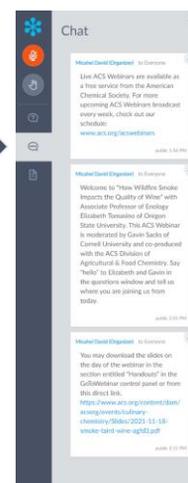


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**Chat**

Announcements and hyperlinks from our team



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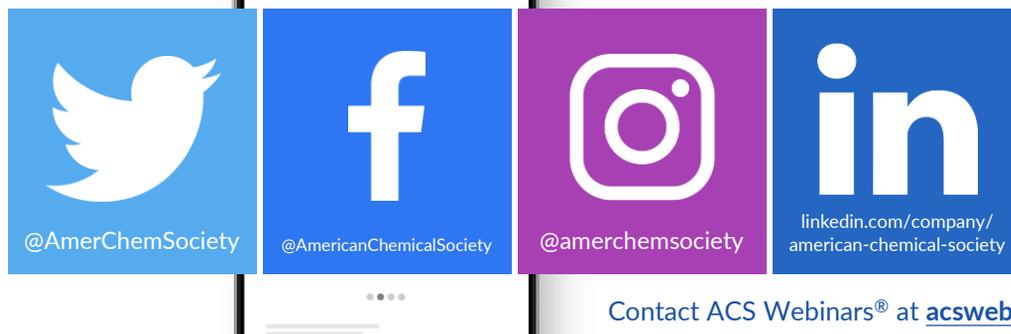


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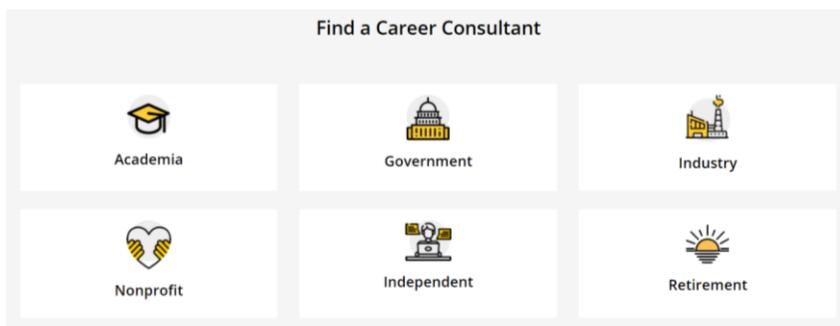
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BS, Massachusetts Institute of Technology, June 2021  
(Chemical-biological Engineering, Computer Science & Molecular Biology)

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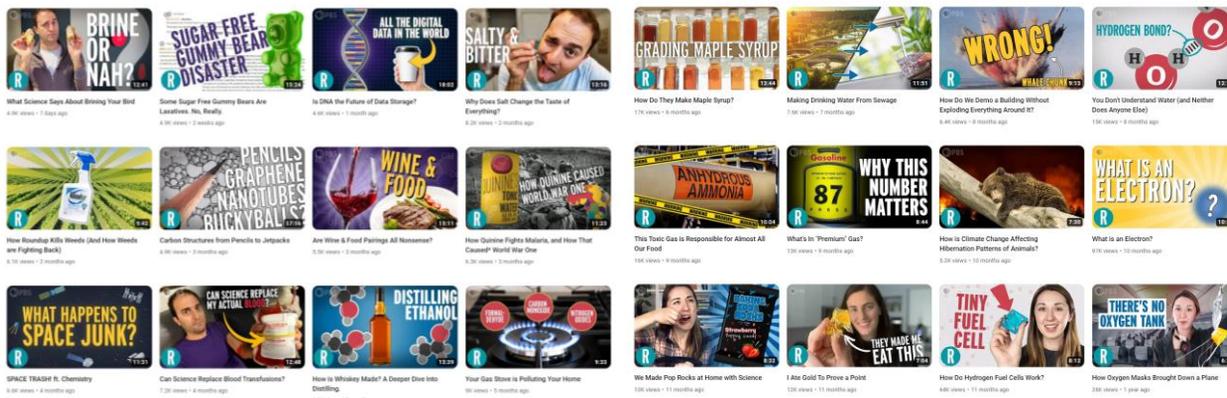
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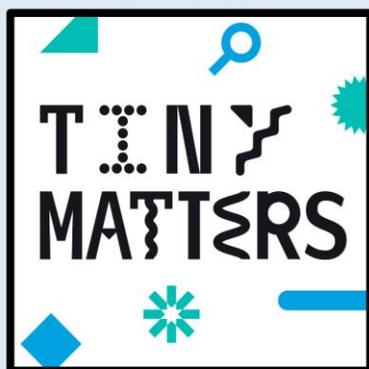
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December 6, 2022



**Bonus Episode**  
Bioorthogonal, click chemistry clinch the Nobel Prize  
October 9, 2022



**Episode #40**  
Lithium mining's water use sparks bitter conflicts and novel chemistry  
September 13, 2022



**Bonus Episode**  
Happy 100th birthday, John Goodenough! Stereo Chemistry revisits a fan-favorite interview with the renowned scientist  
July 25, 2022



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Jess Wade on Wikipedia and work-life balance  
June 21, 2022



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**Jim Tung**

Assistant  
Lacamas Laboratories

S.S., Biochemistry, University of Oregon  
Ph.D., Organic Chemistry, University of Notre Dame

Jim Tung works at Lacamas Laboratories in Portland, OR, currently as a business development manager. He has been with Lacamas for 10 years, working on developing new chemical manufacturing projects. Before that, he was a senior research chemist at Oblet Research in Champaign, IL, performing kilo-scale organic chemistry.

An Oregon native, Jim got his B.S. in biochemistry from the University of Oregon, his Ph.D. in organic chemistry from the University of Notre Dame, with postdoctoral experience at Pfizer's laboratories in La Jolla, CA. He is past chair of the Portland Section of the American Chemical Society and was 2019 general co-chair of NORM 2019. He has interests in process chemistry, labor economics, social media outreach and encouraging career exploration and development for younger chemists.

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## Think like a CSO: How to Develop a Strategic Mindset



MATT GRANDBOIS, PHD

Strategic Partnership Manager,  
DuPont Electronics & Industrial



ANNABELLE LOLINGO, MS

Chemistry Ph.D. Candidate,  
Iowa State University

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# Think like a Chief Strategy Officer: Developing Strategic Mindset

Matthew Grandbois, Ph.D.  
ACS Webinar  
May 2023



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## Professional skills are key to you reaching your potential and fulfill your career goals.

- Your career journey is highly dependent on your human potential.

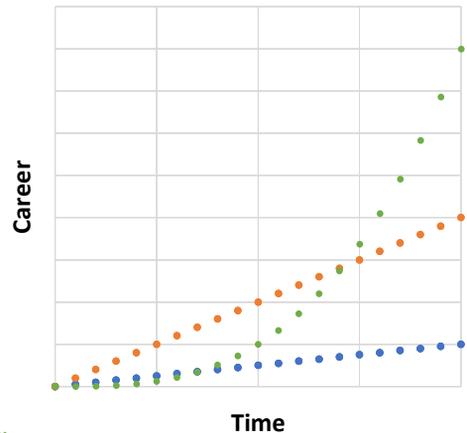
$$\text{Career} = \text{Human Potential} * \text{Time}$$

- Increasing your trajectory can be accomplished by introducing external development.

$$\text{Career} = \text{Human Potential} * \text{Time} * \text{Professional Development}$$

- Strategic compounding** of professional development can unlock your potential and accelerate your career pathway.

$$\text{Career} = \text{Human Potential} * \text{Time} * (\text{Professional Development})^x$$



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## Professional Skills give you a “Seat at the Table”



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## Throwback Thursday: August 2021



**PATRICIA SIMPSON**  
Owner and Consultant, Game Changing Etiquette and the  
Director of Academic Advising and Career Services, School of  
Chemical Sciences, University of Illinois

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## Strategic Mindset

- A strategic mind set requires the use of *strategic thinking*.
- Strategic minds understand how individual activities achieve **the bigger picture**.
- Skill that can be applied both externally and internally:
  - Internally - navigate your career
  - Externally- develop research or disruptive innovation

*It is a skill that can be learned.*



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## Stra-te-gery....

- **Strategic minds** often develop *strategies* via strategic thinking.
- Strategies are
  - Methods for how to achieve goals
  - Set of choices for what you will do
  - Aligned to goals and objectives.
- Strategic Planning can help develop a strategic mindset.



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Photo by [Randy Fath](#) on [Unsplash](#)

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## Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



**Which Nobel Prize winning Chemist was also president of the British Chess Federation?**

• Ernest Rutherford



• Robert Robinson

• Dorothy Hodgkin



• Linus Pauling



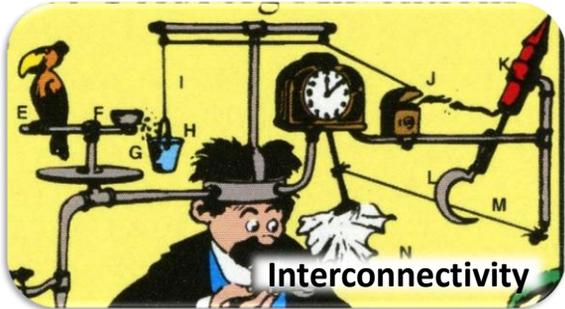
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## Learnable Aspects of a Strategic Mindset



Prioritization



Interconnectivity



Telescopic Focus



Risk Mitigation

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## Telescopic Focus

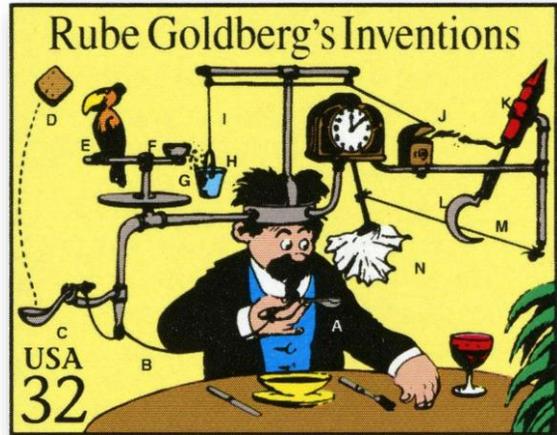
- The ability to change your perspective of the situation based on focus of the system.
- *“The Blind Men and the Elephant”*
- How to improve:
  - Zoom-In Zoom-Out (ZIZO) Framework
  - Stay Curious & Ask Questions
  - Take time to think

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# Interconnectivity

- Strategic minds understand that things are connected.
- Recognizing connection points can help you innovate.
- “Nothing occurs in a vacuum”
- How improve?
  - 5 Whys
  - “And Then....”



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## Interconnectivity leads to Consequences

- Action taken upon one component in a connected system will result in changes throughout the system.
- These actions are planned to cause intended consequences to the system, but often they lead to unintended consequences.
- Consequences can vary in duration, intensity, and impact.



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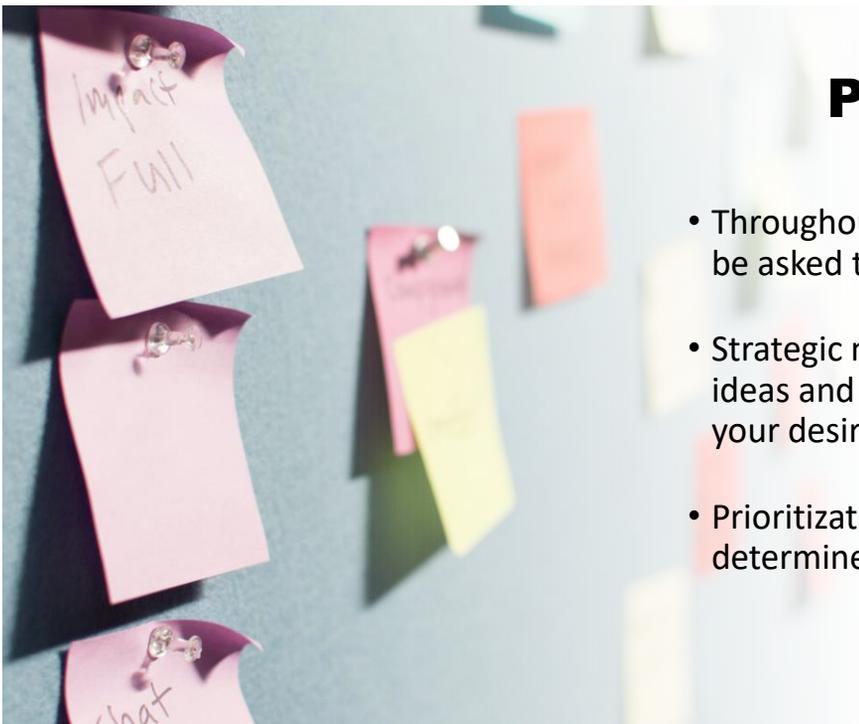
## Intended & Unintended Consequences



- Chemical industry is often cited for many of the issues that the global society is plagued with today that were unintended consequences.
- Unintended consequences are not always negative: Fleming invented the first antibiotic while researching the influenza virus in 1928.
- Unintended consequences are difficult to predict, but through proper planning you can mitigate negative unintended consequences.

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## Prioritization

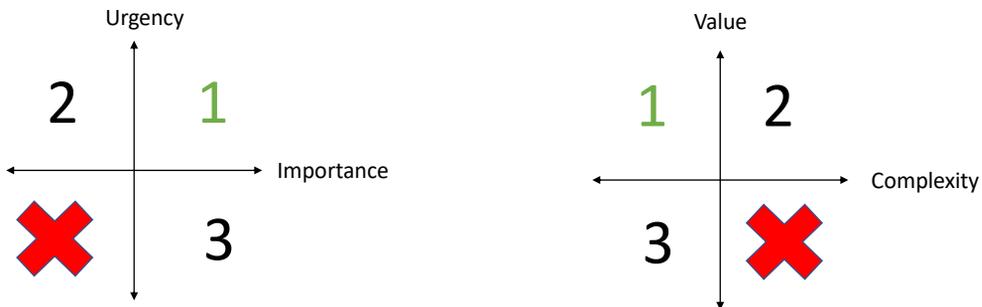
- Throughout your career you will be asked to “do more with less”.
- Strategic minds create many ideas and actions that can lead to your desired result
- Prioritization is critical to determine what to do and when.

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## How to prioritize?

- 2x2 Frameworks can be help to reduce complexity to simple variables

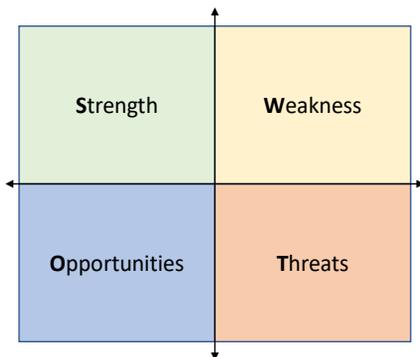


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## How to prioritize?

- SWOT Analysis is also a traditional 2x2 framework to prioritize actions based on characteristics of an organization and its environment



1. Characterize Internal Strengths and Weaknesses
2. Identify External Opportunities and Threats.
3. Align Strengths to Opportunities.
4. Avoid Threats that align to Weaknesses

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## How to prioritize?

- When there are more than 2 factors involved in determining the quality of an idea or strategy, scorecards can help prioritize.
  1. Identify the criteria to evaluate ideas and actions.
  2. Determine quantification scheme
  3. Determine weighting of options.
  4. Evaluate options and calculate prioritization score.

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## Prioritization Scorecard

Real-Win-Worth framework commonly used by chemical industry to evaluate projects.<sup>1</sup>

	Is it Real?	Can we Win?	Is it Worth it?	Prioritization Score
Option A	9	3	3	81
<b>Option B</b>	9	9	3	<b>243</b>
Option C	1	3	3	9
Option D	3	1	9	27

1-3-9 Quantification scheme provides weighting for highest performing options. Common in Six-Sigma.

Prioritization Score take aggregate product to guide decision making.

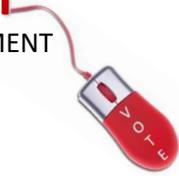
<https://hbr.org/2007/12/is-it-real-can-we-win-is-it-worth-doing-managing-risk-and-reward-in-an-innovation-portfolio>

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## Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



**How often have you used a prioritization matrix in your current/past role?**

- Never
- Once or Twice
- A few times
- All the Time



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## Strategic Alignment to Goals

- Strategy planning will help you make choices to achieve your goals (Strategy)
- Strategic thinking is critical to maintain alignment to your goals and recognize when things are getting off track.
- Question you should continue to ask:
  - Has the environment changed such that your goals are no longer viable?
  - How can you determine how your strategy is working?



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## Risk Mitigation

- Unintended consequences from our strategic initiatives represent the risk of not achieving our desired goal or intended consequences.
- **Risk Mitigation** is a common strategy used to help minimize the negative impact of unintended consequences.
- Commonly used strategies to mitigate the impact of risk include:
  - **Avoidance** Plans are made to reduce unintended consequences as much as possible. *Example: send 3 ships with hope 1 reaches shore.*
  - **Acceptance** Recognizing rewards outweigh any negative impact due to risk.
  - **Transference** Identify external recipients where risk could be transferred.
  - **Reduction** Take action to limit impact of unintended consequences while recognizing the likelihood of these events is relatively high.

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## Risk Mitigation Framework

1. **Identify Risks** - Evaluate environment and work with team to exhaustively identify the potential risks for your strategy/project.
2. **Evaluate Risks** – Define the likelihood of the identified risks happening and define the impact these would have.
3. **Adopt Strategy** – Determine appropriate strategy based on risks
  - *Avoidance* is a common strategy when many low likelihood risks are identified. *Reduction* is used when many high impact risks exist.
4. **Monitor** – Establish key performance metric to indicate progress and likelihood of success.
5. **Pivot** – Contingency plans prepared based on strategy.

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## Inspiration for Designing in Pivots

- Accepting “*Murphy’s Law*” can maintain a mindset focused on acceptance and planning
- Take a lesson from driver’s training: “*always have an out*”
- “*All roads lead to Rome*” - establish multiple paths to reach your desired end goal.
- “*Lose the Battle. Win the War*” – Having multiple paths to goal speeds up moving on
- “*Fail Fast. Fail Forward*” – Design in Proof-of-Concept moments early to speed up learning



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## Resources & Next Steps



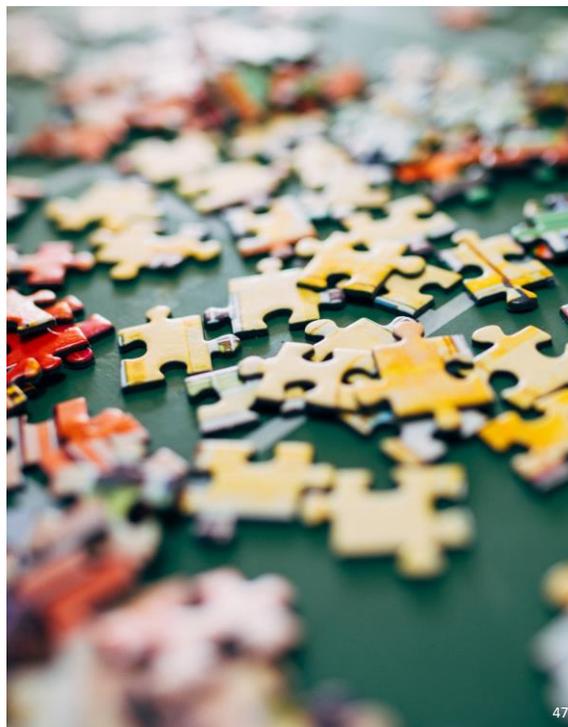
- **Next Steps:**
  - Apply “5 Whys” analysis to an unintended consequence you recently observed.
  - Conduct a SWOT analysis on your current group or organization.
  - Develop a simple prioritization matrix for a daily task or goal (e.g. Friday night dinner)
- **Resources:**
  - ACS Institute: [Strategic Planning](#)
  - ACS Webinar: [Think Like a CEO](#)
  - ACS Division of Professional Relations ([acsprof.org](https://acsprof.org))

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## Summary: Putting together the big Picture

- Strategic thinking involves seeing “*the forest through the trees*” to make clear, winning strategies towards your goal.
- Recognizing the connection from your daily “doing routine” to the bigger picture can help you professionally.
- Applying prioritization, risk mitigation, and connectivity frameworks are ways to build your strategic mindset.



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## Closing Thoughts

- Think Big: Your field of view impacts your perception of the world around you.
- Strategy is not strategic thinking, so use your brain.
- Applying strategic thinking towards your own professional development can help you reach your potential. You got this!!

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