



## Project Management Tools and Soft Skills in Scientific Enterprise

Carlos, a Sr. Project Manager, leader, and travel enthusiast is glad to share learnings from a 15-year career in Project Management and Engineering. He has so far led projects in 40 US States, 9 different countries, over 70 cities, with 7 corporate functions, and outdoor adventures in 18 different countries.

Carlos serves as Coach and Mentor to Project Managers and Engineers, and will discuss many of the strategies which have proven successful for him.

He has a Bachelor of Science Degree in Mechanical Engineering, is PMP Certified, is a member of ASME, PMI, a Speaker, and a Volunteer.

# Synopsis

- In this event, Carlos Ubinas Clark, PMP, will share his journey in project management across 9 different countries, leading multi-cultural teams in diverse geographical regions, and overviewing the role of life sciences in project environments.
- Carlos will overview expectations of scientific roles in projects and describe how Iteration-based approaches, such as Agile, further benefit project teams achieve their goals.
- He will highlight soft skills and illustrate Project Management Tools that can be utilized to leverage scientific expertise, and help guide participants who may want to pursue project management in their careers.

# Agenda



- 1 (Slides 1-5) Introduction & PM Role in Science
- 2 (Slides 6-12) Case Study & PM Value in Science
- 3 (Slides 13-19) Case Study & PM Tools in Science
- 4 (Slides 20-25) Two PM Approaches in Science & Takeaways

## Acronyms:

PM = Project Management

SME= Subject Matter Expert

# Speaker's Journey



- Leading International Teams
- Multicultural Influences and Collaboration
- Siemens, Johnson Controls, Honeywell

Disclaimer: The content herein should be considered as educational, and not the advice of the organizations listed.

# PM Process Groups



- **Plan:** Project Plan. Collaborate for Resources. Hire Subcontractors. Time and Cost.
- **Monitor & Control:** Activities vs. Baseline Plan. Collaboration. Change Control.
- **Close:** Validation. Collaboration. Project Conclusion Meeting, Lessons Learned.

Tip: PM Essentials- Time, Money, Baseline

## Part 2.

# Case Study & PM Role in Sciences

## Syringe- Case Study

- **Plan:**
  - Insulin syringe production, 500,000 in 5 months.
    - .Requirements/Constraints
  - Cost of \$100,000
  - Schedule: 5 months
- **Monitor & Control:**
  - Cost forecast: \$20,000 per month
    - .Change syringe quantity. Supply chain
  - Timeline: 150 calendar days
    - .Changes- Outside factors, material shortage/process, time
  - Resources/Team:
    - Team availability. Organizational restructuring
- **Close:**
  - Document per processes. Document Changes. Validate Completion



# Survey

- Survey: In the previous Case Study-
  1. What do you do as leader if material is in short supply?
  2. What do you do if you suddenly become unavailable?
    - A. Cancel the project
    - B. Have a "Plan B"
    - C. Document and discuss with Team



# Survey



- Survey: 1) For the issues with Material-  
To which of the 3 phases covered does it belong?  
  
A. Planning  
B. Monitor & Controlling  
C. Closing  
  
2) Similarly, for the issues with Team Resources?



# PM Role in Scientific Enterprise

## PM Value in Sciences



- How does PM offer value in Sciences?
- PM Skills – Multicultural, Communication Students/Professors from other countries
- PM Tools & Techniques– Scheduling, Project Plan, Coordination

# PM Value in Sciences – Soft Skills

## Meeting Business goals- Prioritizing PM Soft Skills

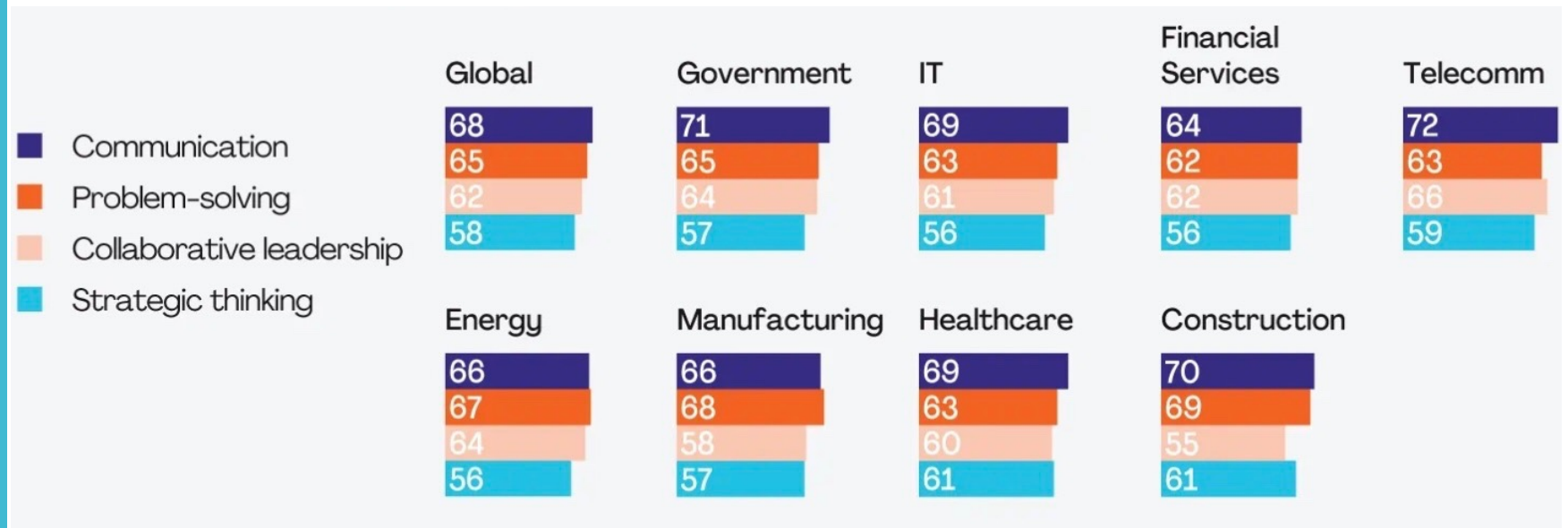
Projects successfully **met business goals** by priority placed on power skills

- High power skill priority
- Low power skill priority



# PM Value in Sciences – Soft Skills

## Ranking Best Soft Skills in Projects Across Industries



# Survey- PM Soft Skills in Sciences

How does a Project Meet business goals?

- A. The project was short
- B. The project was completed within time and cost
- C. The project sponsor wants the team back

# Brief Case Study – NIH Grants

## PHS 398 Research Plan

OMB Number: 0925-0001  
Expiration Date: 01/31/2026

### Part 3

## Case Study & PM Tools for Sciences

Introduction	
1. Introduction to Application (for Resubmission and Revision applications)	<input type="checkbox"/> Limited to 1 page (except R25 Resubmission can be 3 pages). Required for Resubmission and Revision applications. <input type="button" value="View Attachment"/>
Research Plan Section	
2. Specific Aims	<input type="checkbox"/> Required (except DP1, DP2, DP4, R35, R50 and X02). Limited to 1 page. <input type="button" value="Attachment"/>
3. *Research Strategy	<input type="checkbox"/> Adhere to page limits specified in Application Guide and/or funding opportunity. Typically 6 or 12 pages; a small number of funding opportunities specify 30 pages.
4. Progress Report Publication List	<input type="checkbox"/> Only allowed for Renewals and Resubmissions of Renewals. <input type="button" value="Attachment"/>
Other Research Plan Section	
5. Vertebrate Animals	<input type="checkbox"/> Required for all apps. (except S10), if Vertebrate Animals is Yes on the Other Project Information form. <input type="button" value="View Attachment"/>
6. Select Agent Research	<input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
7. Multiple PD/PI Leadership Plan	<input type="checkbox"/> Required if more than one PD/PI is specified on R&R Sr/Key Person Profile form. <input type="button" value="Attachment"/>
8. Consortium/Contractual Arrangements	<input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
9. Letters of Support	<input type="checkbox"/> Required for R36 applications. <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
10. Resource Sharing Plan(s)	<input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
11. Other Plan(s)	<input type="checkbox"/> FORMS-H: Include a single Data Management and Sharing plan, if required. See Application Guide and funding opportunity. Recommended <= 2 pages. Typically not part of application image used for peer review; posted as separate document in eRA Commons. <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
12. Authentication of Key Biological and/or Chemical Resources	<input type="checkbox"/> Required if project involves key biological and/or chemical resources. Recommend 1 page. No system validation enforcement. <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
Appendix	
13. Appendix	<p>DO NOT use Appendix attachments to circumvent page limits in other sections of the application. Applications will be withdrawn and not reviewed if they are submitted with appendix material that are not specifically listed in notice NOT-OD-17-098 or the funding opportunity as allowed or required.</p> <p>Allows for up to 10 appendices. See Application Guide and funding opportunity for restrictions.</p> <p>Appendices are stored separately in the eRA Commons (not as part of the application image) and are accessible to appropriate agency staff and peer reviewers.</p>

# Case Study – NIH Grant



- **Plan:**
  - Scope: Specific Aims & Research Plan
  - Requirements, Test methods & analyses, Deliverables, Milestones, Timeline
  - Pitfalls and Alternative approaches
- **Monitor & Control:**
  - Cost: Project Budget 1.2M
  - Schedule: 2 years-
    - Risks, milestones & mitigations
  - Resources: Personnel, Facilities, Materials, Equipment
- **Close:**
  - Final Report and deliverables documentation, etc.

# Survey – Grant Case Study

- In the previous slide's Case Study:
  - What happens if the requirements are understood incorrectly?
  - What happens if by misinterpreting the requirements, the material is ordered incorrectly?
    - A. Cancel the Research
    - B. Have a "Plan B" and discuss
    - C. Document and discuss with Team

Why did you pick the answer above?



# Survey – Grant Case Study



- Survey: For issues in the previous slide-  
Requirements & Material Ordering:

To which of the 3 phases covered does it belong?

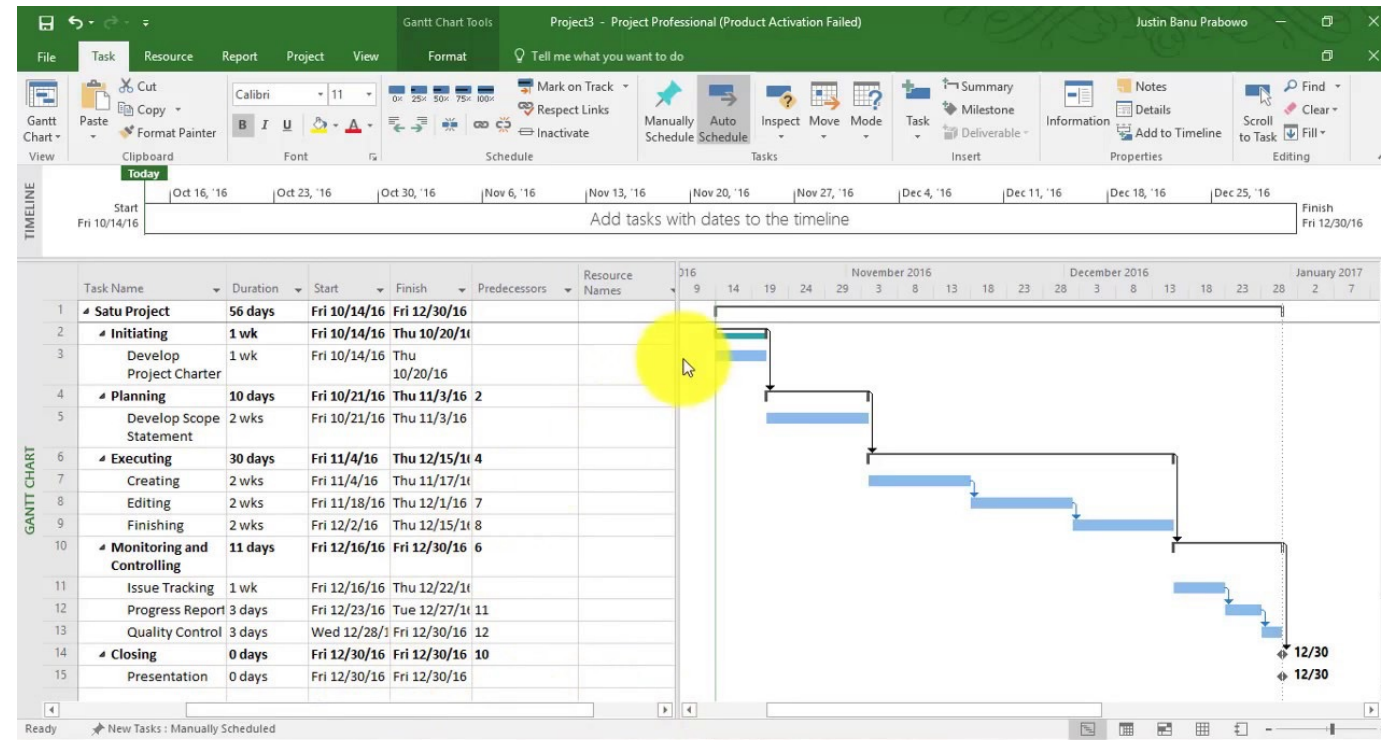
- A. Planning
- B. Controlling
- C. Closing



# PM Tools & Day-to-day

## MS Project

- Planning: tasks, task duration, dependencies, milestones, **baselines**
- Resources: PM allocates team members, equipment, and materials



## RACI Chart- Team Roles

Accountable, Responsible, Consulted, & Informed

<b>R</b>	Responsible — Person working on activity
<b>A</b>	Accountable — Person with decision authority
<b>C</b>	Consult — Key stakeholder who should be included in decision or work activity
<b>I</b>	Inform — Needs to know of decision or action

## PM Tools:

## Why, When & How

- Why is it utilized?  
Time & Money, Streamlining, Value
- When? SURVEY: When is a PM Assigned?  
Tasks of complexity, SMEs, multiple disciplines, departments involved
- How is it practiced?  
The Scope is defined-  
Documents gathered, requirements identified, leadership meetings



## Part 4

# Two PM Approaches

## PM Historical Overview

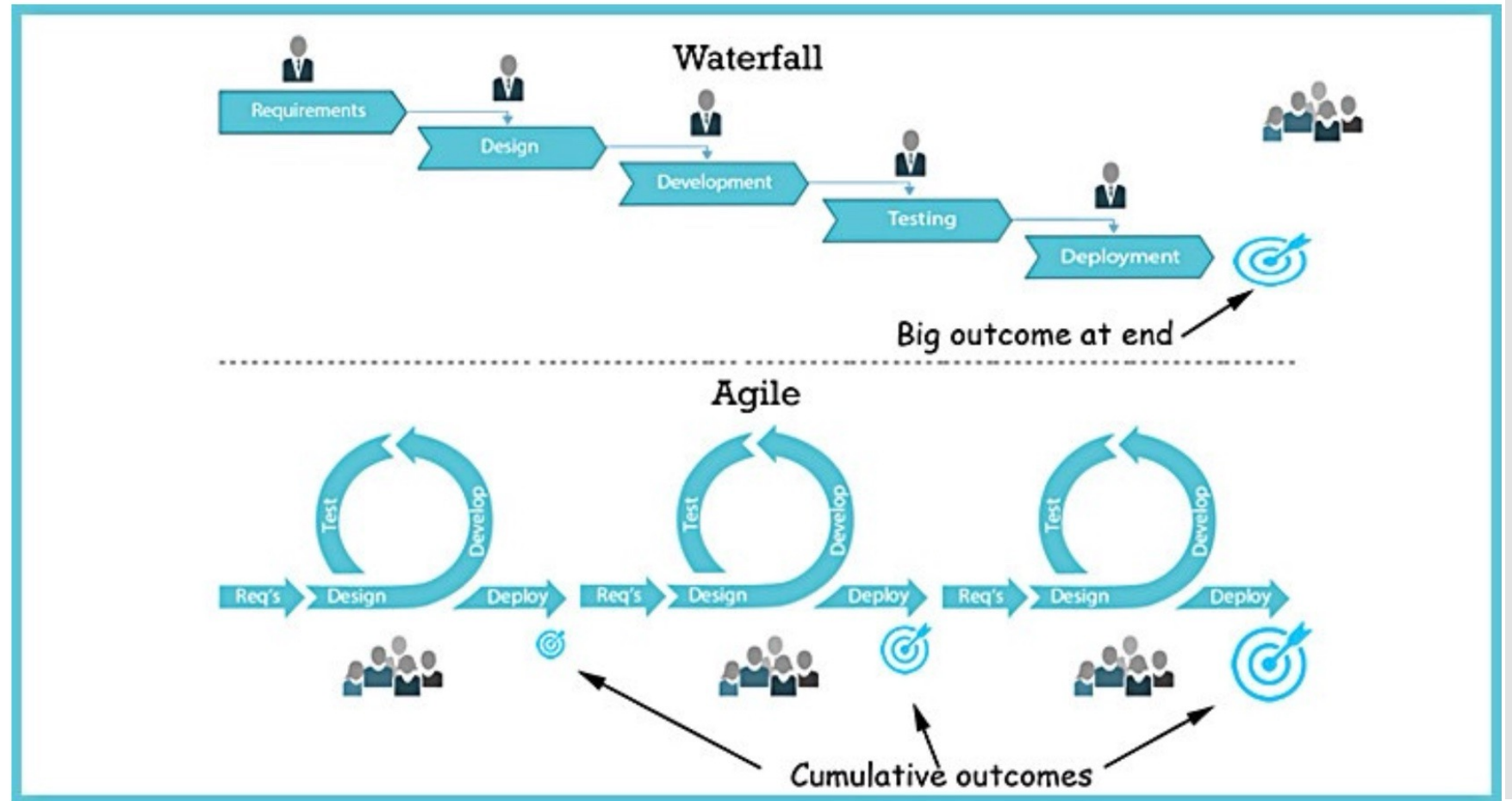


- U.S Navy in the 1940s, further developed by NASA in 1950s-1960s
- Project Management Institute founded in 1969
- Agile movement formalized in 2001 by Software Engineers



# Contrasting Waterfall & Agile

## PM Approaches & SME Expectations



# Waterfall PM Approach in Sciences

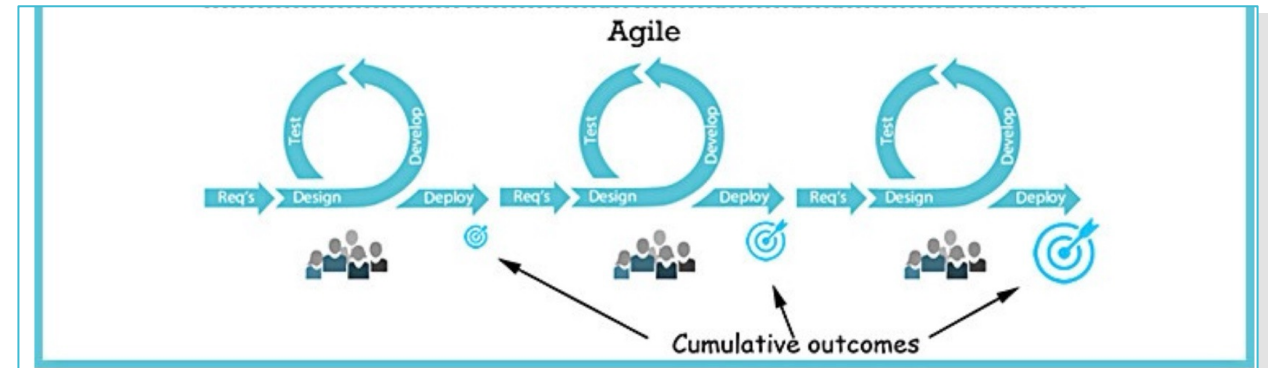
## PM Approach- Waterfall



- Waterfall is a sequential, step-by-step PM Approach made of phases that do not overlap.
- Waterfall: Requirements> Design> Execute the steps >Obtain data>Data available> Final Results. Beneficial for clearly-defined projects.
- Scientist Role Expectations: address non-technical audiences, collaboration, availability, **Communication**.

# Agile PM Approach in Sciences

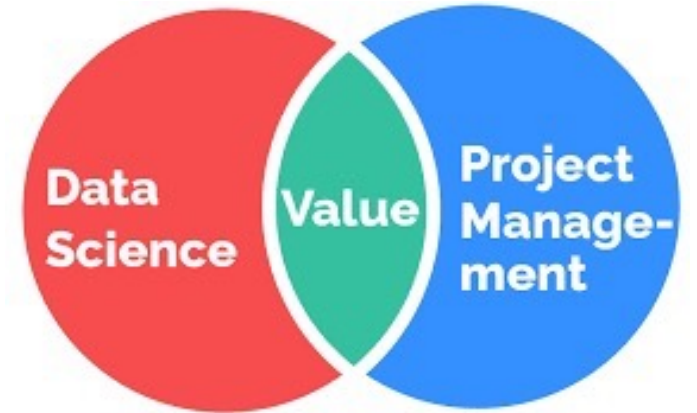
## Agile



- PM Approach utilizing several Iterations. At the end of each iteration, the team delivers results and discuss progress.
- Agile: Requirements> Design> Execute the steps >Obtain data>Data available> Results> Discuss and Improve. 2nd Iteration. Beneficial for higher uncertainty.
- Identifies deliverables needed as early as possible, monitor progress accurately, & accelerate Team Learning. Scientist Roles: Same as Waterfall/At a different Rhythm.

# Recap

## Takeaways



- PM Value in Sciences- Application of Skills and Tools
- Multicultural and International aspects of PM in Sciences
- Different PM Approaches in Science & Expectations



# Contact



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THANK YOU!

Questions and Comments?

# PMINJ Life Sciences LCI\*

## Mission Statement

To create a forum for project management (PM) professionals with an interest in the Life Sciences (LS) industry\* to:

- **Network, collaborate, and share** experiences
- **Discuss and learn** about topics and activities specific to LS projects
- **Educate and share** knowledge
- **Act** as champions of compliance & regulations
- ***Mentor, develop, and foster growth of the next generation of LS PMs***
- **Leverage** best practices, tools & techniques, such as Agile

*\* Pharmaceutical, medical device, biotechnology, and healthcare/medical organizations*

**\$32 PMI Student Membership  
Includes Local Chapter for free**  
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*Thank  
You*