Appendix B – Learning from Our Students

The following former students graciously shared their thoughts on how their work has been affected by this book and by the Technical Project Management class they took as part of the Master in Engineering Management program at the University of Wisconsin–Madison:

- John P. Dolan, Professional Engineer, United States Air Force

- Lindsay Feldt, Project Engineer, Better by Design, LLC

- Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

- John Kruse, Mechanical Engineer III, KaVo Kerr Group

- Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

- Benjamin Ludy, Engineering Manager, Milwaukee Tool

- David Pagenkopf, Director – Application Development, University of Wisconsin–Madison

If you'd like to contribute to future editions of this appendix, please contact Jeffrey Russell at jeffrey.russell@wisc.edu.

What part of the Technical Project Management course was most helpful?

John P. Dolan, Professional Engineer, United States Air Force

The most helpful parts of Technical Project Management were the introduction of the idea of living order, Lean thinking, how to determine value and success for a customer, and the return to the fundamentals of project scheduling. In my daily job leading other project managers, I often get trapped into putting out fires instead of being able to focus on the big picture fundamentals, what the customer truly values, which will bring about project success or failure.

I had also never been introduced to the ideas of Lean project management before this class. I find this train of thought to be fascinating, and it could be truly revolutionary for the civil engineering and construction industry if enough sponsors of the idea can be recruited to change the direction of companies.

Lastly, I haven't had the chance to refocus on my own project management and scheduling skills for a while. I've been focused on the day-to-day and don't often get a chance to sharpen my own skills because I am required to concentrate on the performance of other individuals. It was great to relearn project scheduling—in particular, scheduling from backwards to forwards—and incorporating a living order approach in a geometric order world. I'm a big believer that if someone can do the fundamentals of their job exceptionally well, success will almost be guaranteed. This course gave me a chance to refocus on the fundamentals of project management, focus on my own development, and then bring new ideas to my work place, where no significant changes in project management have occurred in many years.

Lindsay Feldt, Project Engineer, Better by Design, LLC

Walking through each step involved in managing a technical project from initiation to completion (and beyond) was advantageous. Learning about the living order methods in conjunction with the more traditional geometric order methods was very effective. It was clear that both approaches are beneficial depending on the situation and the environment. In the manufacturing environment, I was only previously exposed to the geometric order, so it was helpful to learn about living order methods as well. I have found the planning and scheduling phases especially beneficial in strengthening my role as a technical leader within my company.

Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

The team project, in which we used an applicable industry project to apply the lessons from the course, was the most useful for me. It allowed me to relate the course concepts immediately to a work-related project.

John Kruse, Mechanical Engineer III, KaVo Kerr Group

I found project management to be more than the sum of its parts. No one lesson was a knockout revelation, but when put together, the concepts were very useful.

Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

I found the explanations of the different methods used to run projects to be very helpful. A review of traditional planning vs. Agile methodologies was also useful. Finally, completing a project with a team was very helpful for me.

Benjamin Ludy, Engineering Manager, Milwaukee Tool

For me, working though the group project simulation was the most helpful. Being able to apply the concepts of the class with a subgroup of the cohort was great for making the concepts stick.

Dave Pagenkopf, Director – Application Development, University of Wisconsin–Madison

Integrating the various Technical Project Management course components in the course project was the most helpful for me. In particular, I learned a lot about how to communicate with project sponsors and other key stakeholders, in part by creating a succinct and cohesive plan. When combined with practical metrics and a professional presentation, the project plan can tell a credible and compelling story. I have used these skills in other professional realms beyond project management.

What have you continued to learn more about since completing the class?

John P. Dolan, Professional Engineer, United States Air Force

Since completing the class, I've spent the most time learning more about Lean thinking and Lean project management. Since being introduced to the idea, I've read several books on the topic and proposed changes in my own organization. There is so much waste in the construction industry and in federal government organizations, yet no one is willing to change. As I've learned in Technical Project Management, culture eats process every time, and this is proven day-in and day-out in the military. Even though everyone knows we waste money, do things that are pointless, and execute projects in the wrong manner, no one will change because the organizational momentum is so strong. "We've always done it this way" and "No one else will change if we do" have met at every juncture when I've tried to propose change. And guess what? Culture always won.

Lindsay Feldt, Project Engineer, Better by Design, LLC

I have been able to apply nearly every aspect of Technical Project Management to my job. The concepts of risk management appealed to me during class, and I have since tried to learn more about these strategies in order to apply them better. I have identified some real inadequacies at my company when it comes to preparing for and recognizing possible project risks and am working with my team to come up with a better risk management strategy. There are plenty of opportunities for improvement, with every project bringing new and unique challenges. I am learning as I go about what works well and what doesn't in real-world projects.

Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

Since completing the class, I've learned about managing schedules with a cross-functional team, using the John Deere enterprise product development process, risk assessments, milestone/gate readiness checklists, leadership reviews, and authorization for expenditure reviews for senior level management. On top of those program management related items, I've gained the most experience in program/project financials since completion of the course.

John Kruse, Mechanical Engineer III, KaVo Kerr Group

I had always viewed the change and chaos of project management as stemming from a lack of appropriate guidance or leadership, but once I embraced the dynamic situation, I began to see new opportunities.

Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

I learned a lot about Agile and its implication outside Software Engineering project tracking. For a project for another course, I focused on Agile methodologies for Mechanical Engineering. Also, as part of our leadership team, I am working on adapting our project tracking methods to better communicate project completion dates to upper management.

Benjamin Ludy, Engineering Manager, Milwaukee Tool

I have been working on scoring our projects in a single database after they are completed. I focus on estimated versus actual for both schedule and cost. This has helped me understand which types of

projects are underperforming. Using that information, I can figure out why they are underperforming, and then make changes designed to improve them. Without the tracking database, these insights into underperforming projects would be impossible.

Dave Pagenkopf, Director – Application Development, University of Wisconsin–Madison

Living order was introduced after I took the course, so I have been learning more about the topic on my own and then integrating that thinking into my leadership practices and expectations. These topics have never been covered in any project management course I have taken in my career. Integrating living order concepts with traditional project management skills is a welcome addition to the course and will prove valuable to graduates of the course. There is now a vocabulary for living order, making it much easier to talk to others about this important topic.

Do you have any new insights related to what you learned in the class?

John P. Dolan, Professional Engineer, United States Air Force

See above in relation to project management, how much waste there is in the civil engineering and construction industry, and the importance of culture. I've proposed many ideas to inject Lean thinking into my organization, eliminating waste, and changing the way business is done. But, if I haven't had sole administrative and operation control over the people and process, there's been no change. Existing culture won every time.

Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

Having worked as a program manager for almost two years now, after having come from an engineering and engineering management background, I have a much better appreciation for how complex project and program management can be, especially when using common resources for multiple projects simultaneously. I've honed skills relative to crashed schedules and proactive planning for schedule and resource risks.

John Kruse, Mechanical Engineer III, KaVo Kerr Group

The biggest thing I have picked up after class is that even in a company with a relatively strong project management culture, many leaders are still poorly versed in some of the foundational concepts I learned in class. This creates opportunities to improve internal process and delivery, but can create short term tension or delays when having to explain improved methods or hidden risks of the old ways of doing things. Institutional memory is hard to change and many things I had assumed were just working smoothly behind the curtain of project management were actually in need of significant attention.

Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

I enjoyed the class in general. While it was a lot of work to catch up on all the traditional methods, the time spent learning new things was worthwhile, especially in the comparison of push vs pull planning. Something that was not explicitly taught but came with the class is the creation of professional relationships while projects are completed. For example, I am still talking or texting daily with my Technical Project Management team members on several topics, both for school and for work. Spending a lot of time working on complex management projects helps build teams one project at a time.

Dave Pagenkopf, Director – Application Development, University of Wisconsin–Madison

I had been leading and working on projects for 20 years prior to the course, had my Project Management Professional (PMP) certification for 9 years, and had taken numerous other project management courses. I mistakenly thought there wasn't much else to learn and the course would be a waste of my time. Instead, the course quickly revealed several areas where I needed to improve my project leadership skills because my practices were not as mature and polished as I thought. Plus, some of my knowledge was dated. It was a very humbling experience. My key insight is to always maintain a learner's mindset: be open to new ideas, other perspectives, and different ways of doing things.

Can you give one specific example of a situation in which something you learned in the class affected your project management skills on the job?

John P. Dolan, Professional Engineer, United States Air Force

One particular example where I've applied some of my new Technical Project Management skills is when I teach people who work for me about project scheduling. I did this today. Instead of focusing only on a start to finish project schedule, I teach people to think about the project from finish to start, and then vice versa. Schedule the project both ways! This gives them a new perspective on how to view the project and estimate required time and tasks. They don't get trapped in an A leads to B, then B to C mindset. Instead, they think forwards and backwards, and can see how different items can be executed simultaneously.

Another example is Lean thinking. Ever since taking Technical Project Management, I've placed a much higher importance on what the customer needs, what they find valuable, and their requirement. Instead of being focused on the "What they want," I've spent more time on the "Why they need it." I've definitely benefited from this because it's kept me centered on providing what the customer needs and really helping them identify what they need from me and how I can help them get it.

Lindsay Feldt, Project Engineer, Better by Design, LLC

I took a new position as a project engineer last March in the hopes of eventually moving into a managerial position after completing my graduate degree and gaining more experience within my company. No one at my company is familiar with Microsoft Project, so I volunteered to create some project schedules using the skills learned in Technical Project Management. My boss was very impressed after the successful completion of these projects and asked if I was interested in accelerating my move into the Director of Engineering position to early this next year.

Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

Schedule crashing! This is a common occurrence with "pull" projects where your end date cannot be moved. In our case, we had an emissions project that had to be pulled ahead several months in order to meet regulations. I led the cross-functional team in finding different ways to manage the project effectively, despite having less time.

John Kruse, Mechanical Engineer III, KaVo Kerr Group

I am a sub manager on a project team under a PM who is highly skilled but is somewhat new to the company. Over the last year, we encountered pretty much every type of internal and external obstacle noted in class and a handful of black swans. While I was not the main leader, I was able to see nearly every chapter in this book play out. More often than not, the end solution was exactly what was prescribed in the text, only it took us days or weeks to recognize the situation, propose new-to-the-company management ideas, and get buy-in from stakeholders who I had previously assumed would have already known better. It was really exciting seeing the principles in class play out for a seasoned PM and personally being able to provide support and justification of the concepts to the rest of the organization.

Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

I implemented the use of Jira, an Agile tool typically used by software engineering for the tracking of our mechanical engineering activities. This provided a centralized tool for all our department activities (Software and ME at this time). Based on current results, the electrical team will probably do the same. While Jira was not explicitly mentioned, the use of pull planning and Agile scheduling was addressed in class.

Benjamin Ludy, Engineering Manager, Milwaukee Tool

At Milwaukee Tool, most of our engineering work is standardized and there is little variation from project to project. As such, we do not use formal WBS tools. However, I had a project manager on my team struggling to define a project that had an usual scope. We outlined a WBS together and used that as the starting point. From there, he was able to map out the project and come up with a solid plan. Recognizing that the work package was different was necessary before a schedule could be created. Jumping straight to a schedule document was not working and, instead, was counterproductive.

Dave Pagenkopf, Director – Application Development, University of Wisconsin–Madison

Prior to taking the course I was a coauthor for an IT project proposal. We had to present our proposal to the company's Chief Financial Officer for funding and approval. The project was a multi-year effort that would cost several million dollars. However, the payback in IT operational cost savings would be quick. It made perfect sense to us and we thought it would be an easy sell to our CFO. Despite our enthusiasm for the project, the CFO was not impressed and rejected our proposal. Further, he gave us quite a dressing down for advancing a poor business case and wasting his time.

After completing the Technical Project Management course, my colleague and I revised our proposal and made another pitch to our CFO. We applied the ideas in the course on preparing and presenting proposals, plans, and financial reports for an executive-level audience. After our presentation, the CFO funded the project and he gave us accolades for preparing an excellent proposal; he said it should be a model for other IT projects. The scope of the project hadn't changed, but instead we tailored our proposal to our audience, eliminated the IT jargon, clearly identified the benefits, and were specific about how we would realize the benefits.

Do you have any advice to offer new technical project managers based on your on-the-job experience?

John P. Dolan, Professional Engineer, United States Air Force

First, remember to take time to focus on improving your own skills. If you aren't taking the time to improve yourself, you'll never become a better project manager, and your skills will remain secondary.

Secondly, success is always defined by the customer, not you. It doesn't matter if your project is under budget, completed early, or looks beautiful if it doesn't provide the customer what they need. Remain focused on the customer's requirement(s), what they value, and how you can help them achieve their goals. If you remain focused on that, instead of how many pretty PowerPoint Slide presentations you can make when scheduling a road closure, your project will always be successful.

Lindsay Feldt, Project Engineer, Better by Design, LLC

Organization and planning are so important. Many of the themes discussed in Technical Project Management are focused around forethought and being proactive about issues that can and do come up in any technical project. I have put these to practice and found I am learning to adapt to project change more smoothly. Instead of having to react hastily, I've found it is much better to be prepared, have a plan, and stay organized.

Michele Kaiser, Program Manager – Backhoes, John Deere Worldwide Construction and Forestry Division

Here are my top rules to live by:

- Everything in program/project management requires flexibility, agility, and the ability to make a quick decision

- Relationships are the currency for getting things done! Know people and build trust. Advocate for your team!

- Make sure you know the difference between whining and when something actually needs to change (i.e. adding more time to the schedule)

- Know who your peers are and benchmark them – you don't have to do what they do, but you should know what they do. Apply what works well for you and your team

- Take the blame when things don't go well and share the credit when they do

- Be you and be comfortable in your leadership style

- Above all, stay positive—your team is following your cue!

John Kruse, Mechanical Engineer III, KaVo Kerr Group

Don't assume "more experienced" colleagues or managers know the material covered in this book. When something doesn't feel right, take a stand, propose incremental improvements, and try to build a reputation as a thoughtful process person. That said, you will have to learn to live with some processes or practices that you now know to be less than ideal.

Alexandre Ledoux, Ph.D., Mechanical Engineering Manager, KaVo Kerr Group – Imaging

Don't get stuck on one type of project management. Adapt your techniques and tools based on your company and your team. Create a mix between pull and push planning to keep engagement high, and transition slowly to your preferred style over time with the support of your organization.

Benjamin Ludy, Engineering Manager, Milwaukee Tool

My advice would be to keep it as simple as possible and then add in more sophisticated tools as needed. All projects can be broken down to *what is being done, by whom, and by when*. This should always be clear regardless of project type or the tools/processes being used. Make sure the tools that you do decide to use are working *for* you and the team and not vise-versa.

Dave Pagenkopf, Director – Application Development, University of Wisconsin–Madison

Don't become complacent. You will never know everything. Maintain an open mind, learn from your mistakes, and do better next time.

For example, when I started working on software projects, no one had heard of Agile methodology. Today, most software projects use Agile, and the project management practices that go with it are going through a transition. We are all having to learn new techniques and practices. It is stressful at times, and we make mistakes. We are impatient with the pace of change. However, it must be done.