

Timothy Bradbury Monzello Advocates for Practical Design in Modern Manufacturing

Timothy Bradbury Monzello of Saratoga Springs, Utah calls for stronger alignment between engineering design and real-world production.

Springville, Utah May 20, 2026 ([IssueWire.com](https://www.issuewire.com)) - Timothy Bradbury Monzello, a manufacturing professional, educator, and former NASA Jet Propulsion Laboratory leader, is raising awareness about a growing issue in engineering and manufacturing: the disconnect between design and real-world production.

With decades of experience across machining, operations, and engineering leadership, Monzello is advocating for a more practical approach to design—one that considers how products will actually be built before they are finalized.

“If it can’t be built, it’s not a finished idea,” he says. “You have to think about the process from the start.”

Industry data supports his concerns. Studies show that up to 70% of manufacturing costs are determined during the design phase, while nearly 80% of production issues stem from design-related decisions. In many cases, fixing problems after production begins can cost up to 10 times more than addressing them early.

Despite this, many organizations still separate design and manufacturing teams until late in the process.

“I’ve seen parts where tolerances were tight everywhere, even when only one area needed it,” Monzello explains. “That adds time and cost without improving the outcome.”

Monzello’s perspective is grounded in real-world experience. He began his career working as a machinist and CNC programmer before moving into leadership roles such as Plant Manager and Quality Control Manager. He later spent 19 years at NASA’s Jet Propulsion Laboratory, where he worked as a Master Production Scheduler and Manufacturing Engineering Group Lead.

“At JPL, you plan for everything,” he says. “One small design issue can affect an entire system.”

He recalls a specific example from his early career.

“We had a part with a deep pocket and sharp corners,” he says. “The tool couldn’t reach cleanly. Once we added a small radius, the machining was made possible. That’s the kind of change that should happen during design, not after.”

According to industry research, companies that apply design for manufacturability (DFM) principles early can reduce production costs by **15% to 30%** and improve efficiency by up to **25%**. These gains come from simpler designs, better communication, and fewer revisions.

Monzello believes that improving outcomes does not require complex systems or large investments. Instead, it starts with simple changes in how individuals approach their work.

“You don’t need a big process to start doing this better,” he says. “Ask how it’s going to be built before you finalize the design.”

A Call to Action: What Individuals Can Do Today

Monzello encourages engineers, students, and professionals to take practical steps on their own to improve design outcomes:

- Think about manufacturing early in the design process
- Simplify designs whenever possible
- Use tight tolerances only where they are truly needed
- Talk to machinists, operators, or production staff before finalizing designs
- Review past projects to identify what caused delays or rework
- Test ideas through simple prototypes before scaling

“Talk to the people doing the work,” he says. “They’ll tell you what matters.”

He also emphasizes the importance of learning across disciplines.

“I didn’t stay in one role,” he says. “I learned machining, planning, and management. That gave me a better view of how everything connects.”

To read the full interview, visit the website [here](#).

About Timothy Bradbury Monzello

Timothy Bradbury Monzello is a manufacturing professional, educator, and former Group Lead in the Manufacturing Engineering Group at NASA’s Jet Propulsion Laboratory. His career spans hands-on machining, production leadership, and advanced engineering systems. He specializes in design for manufacturability, GD&T, and operations management, and currently teaches manufacturing and machine tool technology as an Adjunct Professor based in Saratoga Springs, Utah.

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