



MCS Machine Works: Family Roots, Modern Precision and the Power of Continuous Improvement

What began as a small consulting business in 1990 has evolved into one of the Triangle's most trusted CNC contract manufacturing companies. **MCS Machine Works**, a family-owned precision machining company based near the Research Triangle Park (RTP), serves industries from aerospace to medical devices, embodying a legacy of innovation, adaptability, and continuous improvement that spans generations.

Founded by their father, Mike Appel, the company began as a consulting firm that helped large manufacturers transition from manual to computerized machining processes. That work naturally evolved into hands-on

manufacturing. "Our dad saw the direction the industry was headed," said Vice President Kyle Appel. "He began helping companies convert their manual processes to computer-based systems, and eventually those same companies asked him to just make the parts himself."

Today, brothers Kyle and Tyler Appel are moving into the leadership of the company, continuing their father's vision while modernizing the business for the future. "We grew up around this business—spending summers helping out and learning hands-on in the shop," said Vice President Tyler Appel. "It's been incredible to see how far we've come."

Transforming Operations Through Certification and Partnership

MCS Machine Works' partnership with **NC State University Industry Expansion Solutions (IES)** marked a pivotal moment in their growth. With IES's guidance, the company earned three major certifications—AS9100D (Aerospace), ISO 13485 (Medical Devices), and ISO 14001 (Environmental Management)—making it one of the few small manufacturers in North Carolina to achieve all three at the time.

"These certifications seemed out of reach at first," Kyle recalled. "But with Mitch Poteat and the IES team leading





the process, we realized we could do it. They guided us every step of the way. We truly couldn't have done it without them."

The impact was immediate. Certification opened doors to new markets, including partnerships with some of the world's largest pharmaceutical and technology companies. "We're now working with a major pharmaceutical company here in RTP," Tyler said. "That relationship wouldn't have been possible without ISO 13485. The certifications gave us the credibility and structure we needed to compete with much larger manufacturers."

Operational Excellence and Cultural Change

The certification journey also transformed how the company operates day to day. "We thought 'quality' meant just making good parts," Kyle said. "But we learned

it's about every aspect of the business—from how you train employees to how you manage environmental impact."

Implementing the systems required for certification created a new level of structure and efficiency. "It's now our operating system," Tyler added. "It changed our culture for the better. We're more organized, more proactive, and more sustainable."

The ISO 14001 environmental certification, in particular, has become a powerful differentiator. "We were surprised by how much our customers cared about environmental standards," said Kyle. "It's actually the certification we get asked about most often. Being able to say we're environmentally certified has given us a real advantage."

The company continues to use environmental impact reports provided through IES to track recycling, stormwater runoff, coolant reuse, and other sustainability metrics. "It's not just about compliance—it's about accountability," Kyle explained. "We're proud of the cleaner, more efficient operation we've built."





A Growing Business with Measurable Impact

Since partnering with IES, MCS Machine Works has grown from **13 to 17 employees**, strengthened retention, and achieved a reported **economic impact of more than \$915,000**, including **\$250,000 in increased sales**, **\$500,000 in retained sales**, and **\$150,000 in new equipment investments**.

“We’ve been able to expand our customer base, invest in new technology, and offer full health insurance and competitive pay for our employees,” said Kyle. “That’s a direct result of becoming a stronger, more disciplined company.”

Despite industry-wide workforce challenges, MCS Machine Works maintains an impressive record of employee retention. “Most of our team has been with us for several years,” Tyler noted. “We’ve built a great culture—one that values people, growth, and craftsmanship.”

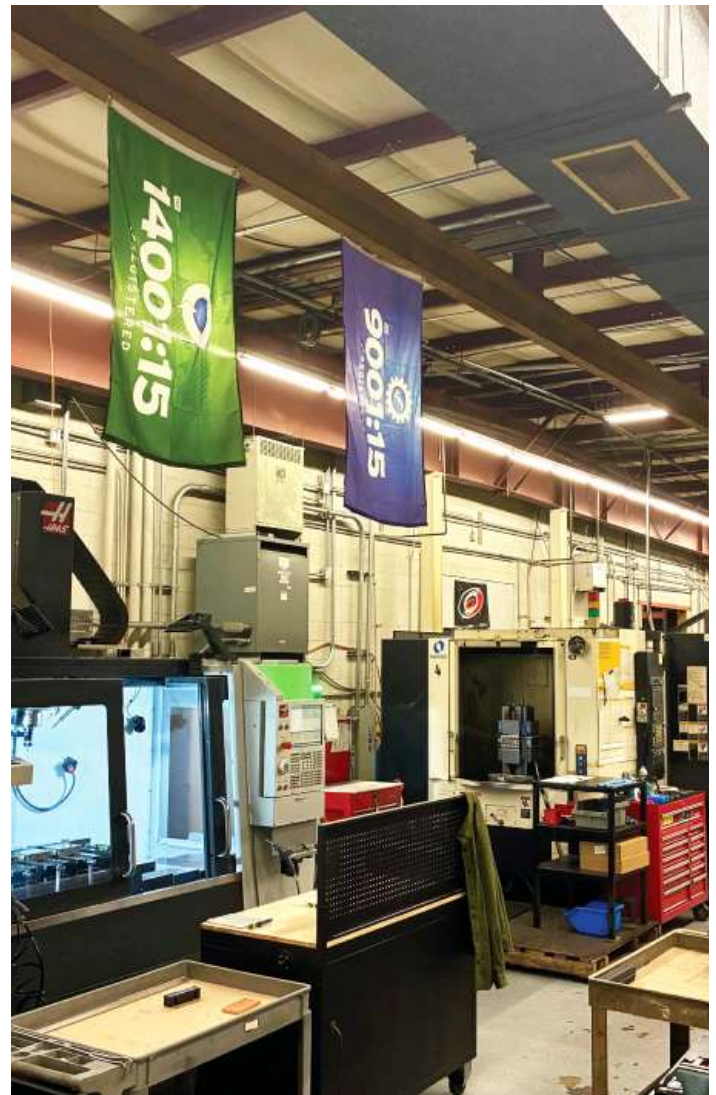
Looking Ahead: The Next Generation of Manufacturing

The brothers see continued opportunity ahead—especially with the resurgence of domestic manufacturing. “We’ve definitely seen an increase in companies looking to source locally,” Kyle said. “The pandemic and supply chain issues reminded people how important it is to have strong U.S. manufacturing. That’s been great for us.”

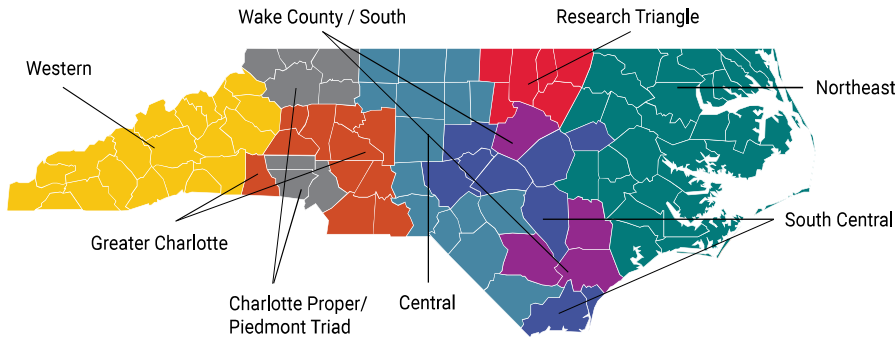
As a second-generation, family-owned business, Kyle and Tyler understand the unique challenges of small manufacturing enterprises. Their advice: be bold, be disciplined, and lean on partners like IES.

“The certifications were intimidating at first, but they’ve completely changed our business,” said Kyle. “They gave us structure, credibility, and the ability to compete on a larger stage. If you’re thinking about it—do it.”

“And if you’re working with family,” Tyler added with a smile, “make sure you define your roles and share the same vision. That’s what’s worked for us.”



NC State University Industry Expansion Solutions Regional Managers Serve All 100 Counties in North Carolina.



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