Faculty Experience: Startups

- Frank Liou

MISSOURI S&T

Agenda

- Introduction
- Examples: startup research and commercialization
- Why startup?
- How to begin?
- Challenges
- Funding for a startup

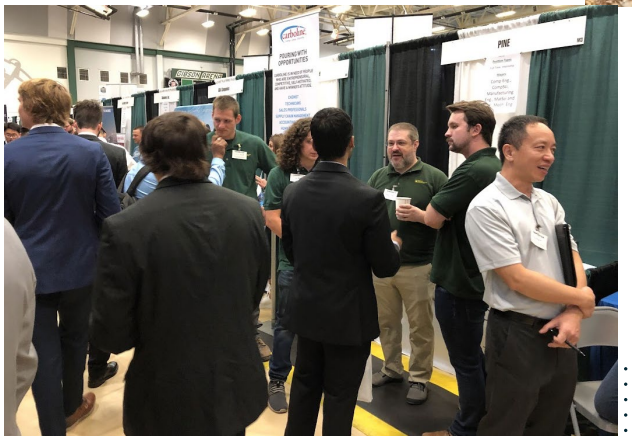
About me

- Bytnar Professor, Mechanical Engr.; Director, ISC
- Research focus: Rapid Prototyping, Additive Manufacturing, Digital Manufacturing
- Courses developed: ME 5708 Rapid Product Design and Optimization; ME 6659 Advanced Topics in Design and Manufacturing
- Book: Frank Liou, Rapid Prototyping and Engineering Applications: A Toolbox for Prototype Development. CRC Press, 2019 (2nd Edition), ISBN-13: 978-1498798921.

About the company

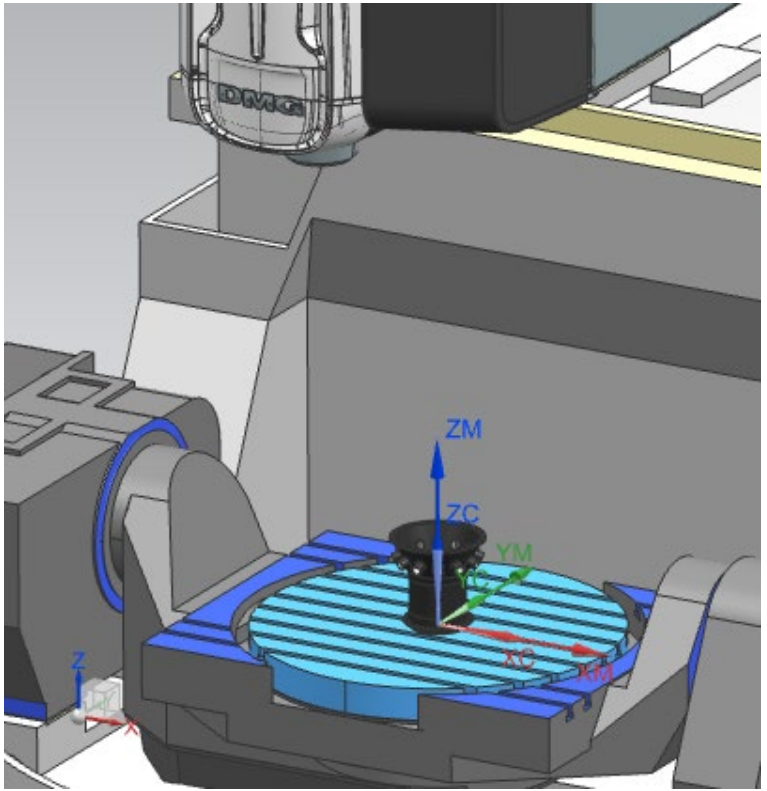
- Product Innovation and Engineering (PINE), LLC
- Founded in 2002
- St. James Industrial Park
- Member, S&T's Center for Aerospace Manufacturing Technologies (CAMT)

PINE



Recruiting engineers at S&T career fair

Siemens PLM: NX Hybrid Manufacturing

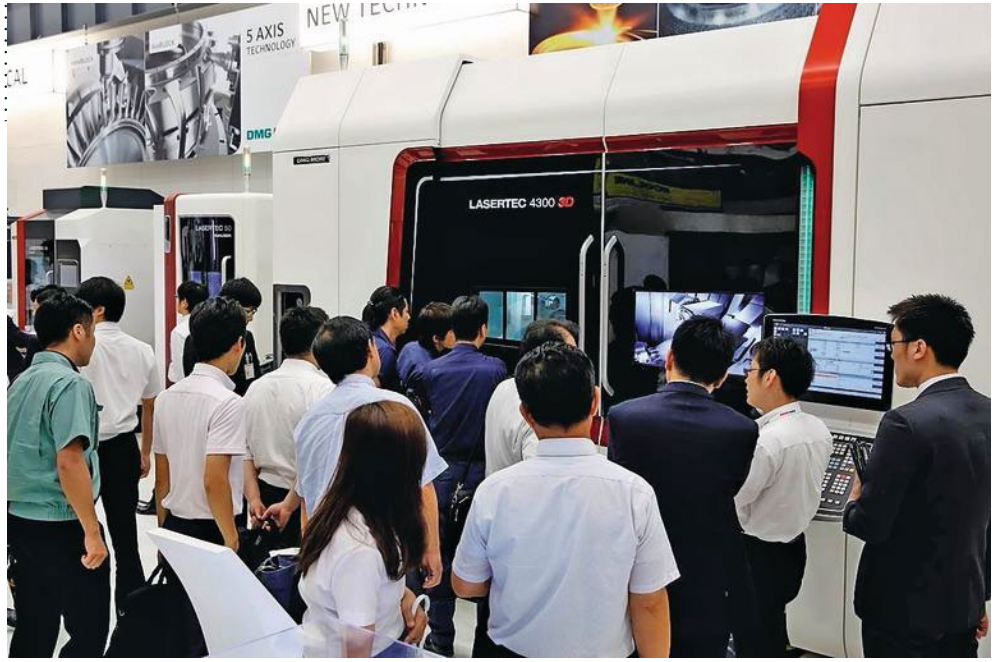


Sponsor: NSF STTR; Siemens PLM

DMG/MORI Lasertec



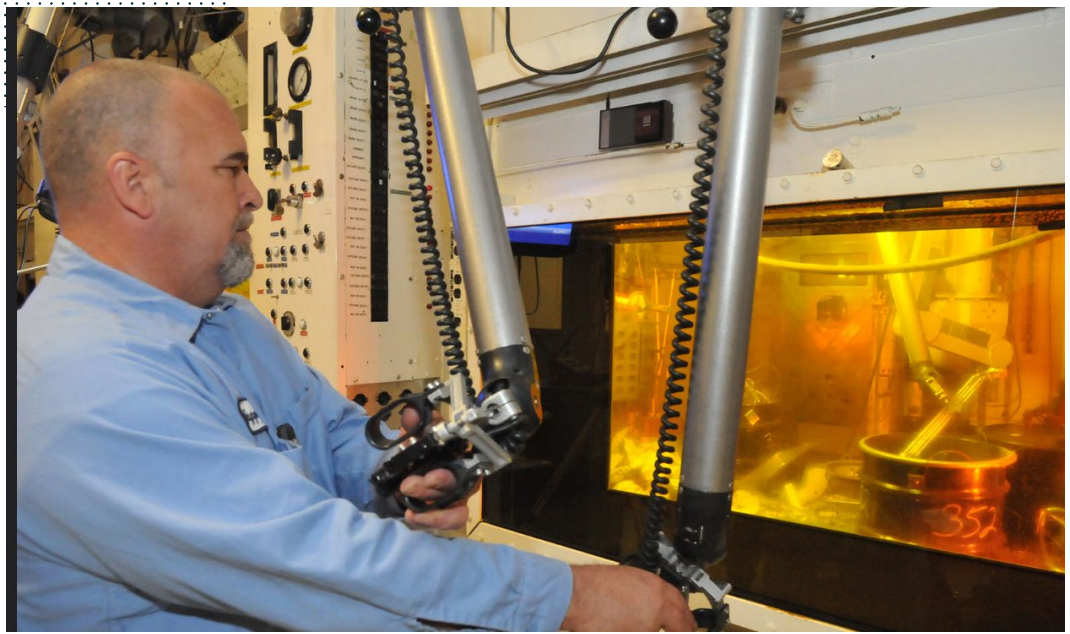


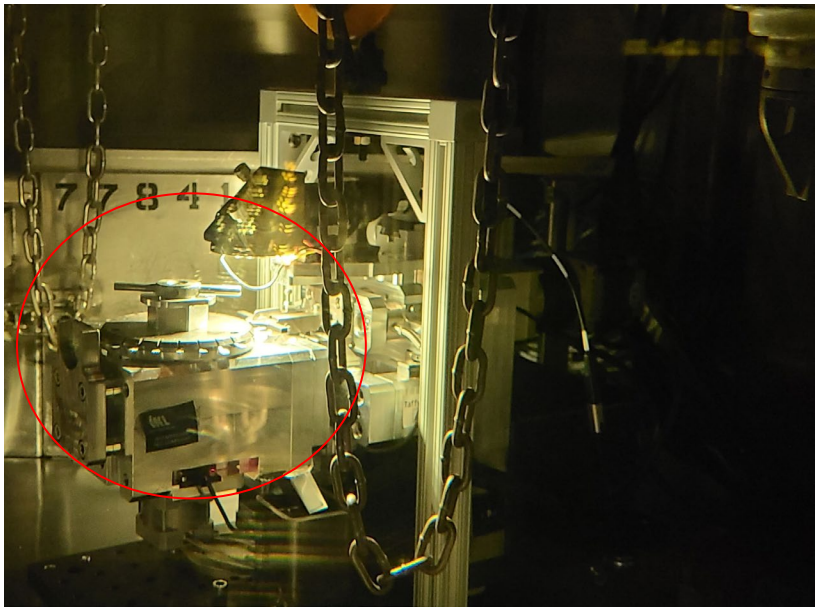



DMG/MORI Lasertec 65, 125, 3000, 4300, 6600

DMG/MORI donated “Franky” Lasertec 4300 to S&T

Automated Mini-tensile Testing System





Sponsor: DOE STTR

One unit installed in Idaho National Lab's (INL) hot cell.

Why Startup?

"Starting up your own business is one of the most rewarding achievements in life. It gives you freedom, which is by far the most powerful outlet for self-expression."

Leonardo Gubinelli, co-founder of Study Abroad Association

How to Begin?

"Do what you love, and success will follow."

- Meg Whitman, former CEO of eBay Inc. and HP Inc.

Challenges to Establish A Startup

- Time (much more than 8-5)
- Expertise (technology, finance, management)
- Attitude (innovative thinking, persistence)
- Money (never enough for a startup)

Looking for tech startup support?

- Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs
- 3.2% of the research budget for agencies with a budget greater than $100 M per year
- Phase I ($150k~$250k) , Phase II ($0.5M~$1.5M)
- The government will invest and hope that you can develop and commercialize it

Thank you!!

Questions?