

EDUCATION

Minnesota State University, Mankato:**M.S.**, Manufacturing Engineering Technology**Thesis:** Effect of Print Parameters on 3D Printed Cobalt-Chrome/Hydroxyapatite Biocomposites

- ❖ **Key Courses:** Lean Manufacturing, Six Sigma, Quality Management, Research Methods

B.S., Automotive Engineering TechnologyINDUSTRIAL
EXPERIENCE**Cubic 3D LLC**

2016 – present

- Development of additive manufacturing technologies for specific industry applications
- Implemented 3D printing in the Mankato area manufacturing industry
- Design for Additive Manufacturing (DFAM)
- Quality certification of printers
- Formed professional relationships with customers

Quality Engineer at Innovize: Medical contract mfg. (Internship)

Summer 2019

- Quality certification of internal equipment
- Creation of standard operating procedures for equipment operation
- Developed process control charts and specification limits for environmental control equipment
- Solved quality issues related to specific products
- Work with different manufacturing teams to address customer concerns regarding quality and establishing plans to improve

Undergraduate Intern, Center for Renewable Energy at MNSU

Summer 2017,2018

- Research and implement a manual canister fill station for charcoal canisters
- Work on modules to move the CORE towards California Air Resources Board recognition

Paynesville Fleet Supply

2010 - 2015

- Worked from 2010 - 2014
- In charge of automotive department
- Customer service associate

RESEARCH
EXPERIENCE**Undergraduate**

- Additive manufacturing of novel materials with varied applications in medical implant industry
- Additive manufacturing of fiber reinforced polymer composites

Graduate

- Assisted with 3D printed prosthetic test setup
- Development of novel biomaterials to be used in additive manufacturing
-

TEACHING
EXPERIENCE

Fall 2018 - Spring 2020

- Courses taught:
 - MET 142: Introduction to Parametric Modeling
 - MET 375 (Lab Portion): Manufacturing Processes II
 - MET 177 (Lab Portion): Materials Processing
- Labs Managed
 - AMET Composites Lab
 - MN Center for Additive Manufacturing

Conference Proceedings and Posters
(Peer-Reviewed)**Conferences**

1. Agarwal, K., **Ruprecht, J.**, Ahmed, S., "Binder Saturation, layer thickness, drying time and their effects on the dimensional tolerance and density of cobalt-chrome-tricalcium phosphate biocomposite", Proceedings of Solid Freeform Fabrication Symposium, August 12-14, 2019, Austin, TX
2. Agarwal, K., **Ruprecht, J.**, "New Biocomposite for Scaffolds using Binder Jetting", Medical Manufacturing Innovations proceedings, RAPID + TCT, Detroit, MI, May 20-23, 2019

Posters

1. **Ruprecht, J.**, Agarwal, K., "Process parameter optimization for binder jet additive manufacturing of Cobalt chrome", POWDERMET2019 & AMPM2019 conferences, June 23-26, 2019, Phoenix, AZ (**NSF Travel Award Winner**)
2. **Ruprecht, J.**, Agarwal, K., "Composite Additive Manufacturing for Lightweight Components", Aerodef 2018, March 26-29, 2018, Long Beach, CA (**SME Travel Grant Winner**)
3. **Ruprecht, J.**, Agarwal, K., "Scaffold Manufacturing by 3D Printing: Cobalt Chrome - Hydroxyapatite Biocomposite", National Conference on Undergraduate Research, Edmonton, OK, April 5-8, 2018
4. **Ruprecht, J.**, Agarwal, K., "Effect of binder saturation and sintering on stainless steel – hydroxyapatite biocomposite manufactured by 3D Printing", National Conference on Undergraduate Research, Memphis, TN, April 6-8, 2017
5. **Ruprecht, J.**, Agarwal, K., "Effect of binder saturation and sintering on stainless steel – hydroxyapatite biocomposite manufactured by 3D Printing", 18th Annual Undergraduate Research Symposium, MSU Mankato, MN, April 11, 2017

SOCIETY ACTIVITIES

- Advocate for Center for Innovation and Entrepreneurship
- Hosting 3D Printing seminars for public attendance
- MNSU Drag Race Team

AWARDS & HONORS

- National Science Foundation student travel award to present poster at PowderMet 2019 conference
- Graduated undergraduate: Summa Cum Laude (3.90 GPA)
- Graduated graduate school: Summa Cum Laude (4.00 GPA)