Bite of Science
B Braun Medical STEM Presentation

Presented By:
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B Braun - Overview

- Founded in Melsungen Germany
- Over 175 Years Family Owned Company
- Largest Privately Owned Medical Device Manufacturer
- 57,000 Employees World Wide
We have subsidiaries in 64 countries.
Nate Snyder - Background

- Attended Northern Lehigh High School (class of 2015)
- Attended Lehigh Carbon Technical Institute studied Precision Tool Technology
- Joined B. Braun through the rotational internship
- Hired full time at B. Braun Medical summer of 2015
- Began Studying for an Associates Degree in Mechanical Engineering in 2016
- January to June of 2017 completed a 6 month internship in B. Braun Medical’s home facility of Melsungen, Germany.
Dan Dietrich - Background

- Attended Nazareth Area High School (class of 2005)
- Attended Pennsylvania College of Technology – Associates and Batchelors in Polymer Engineering Technology
- Attended Queen’s University Northern Ireland – Masters in Polymer Engineering
- Joined B. Braun Medical in Summer of 2014 as Extrusion Engineer
- Promoted to Extrusion Manager in Spring of 2016
B Braun Lehigh Valley History

- Burron Medical Founded in Bethlehem, PA in 1957
- Burron Medical Purchased in 1979
- Marcon Facility First Built in 1985
B Braun Allentown Operations

- Approximately 1,200 employees (2,000 in Valley)
- 400,000 ft² (9 acres under roof)
Produce over 2,400 finished products right here!
Summary of Allentown Operations (Business Units)

- Admixture Business Unit
- Pain Control Business Unit
- IV Systems Business Unit
- SPM
- Extrusion
- Sterilization
Manufacturing Competencies

• Manual and semi-automated assembly
• Automation expertise
• In-house injection molding – over 100 presses
• Extrusion
• Insert molding
• Solvent bonding
• Sonic and laser welding
• UV Curing
• In-house labeling and custom labeling
Admixture Business Unit

Admixture Devices operate within the “Drug Delivery” medical device segment. This segment consists of components that are used for manual, semi-automated, and automated transfer of fluid medications and nutritional products in preparation for IV, IM, or oral delivery.
Pain Control Business Unit

- Pain Control Products: Medical devices that are used to relieve pain for patients during procedures and operations
  - Regional Anesthesia Kits
  - Epidural Anesthesia Kits
  - Spinal Trays & Sets
  - Stimulating catheters
- B. Braun is #1 in regional anesthesia in the US market
- OEM business supporting chronic pain management and out-patient markets
IV Systems Business Unit

IV Systems Products: Medical devices utilized in drug delivery systems and special procedures

- Horizon Cassettes
- Safety Introcan Catheter
Facility Expansion
My Department: The Mold Shop

- Mold Cleaning and Repair
- Crafting & Fabrication of tools and parts
- Home of the “Mold Makers”
Nate Snyder - My Position: Apprentice

• Learn how the mold makers do their job.
• Fabricate parts/items that engineering designs.
• Use every machine in shop to its full capability
• Use AutoCAD and Solidworks to make programs and models for machines
Nate Snyder - How STEM applies to my Career

● Science
  - Metalurgy
  - Cutting Metals
  - Heat Treating
  - Plastic Flow
  - Mixing Coolants

● Technology
  - Computer Numerical Control (CNC) Machines
  - New methods
  - Literally Everything
Nate Snyder - How STEM applies to my Career

- **Engineering**
  - Making parts (CAD)
  - Redesigning Components
  - Problem Solving
  - Metrology

- **Math**
  - Calculations for cutting and material removal (insert calculation)
  - Heat Treating
  - Trigonometry for calculating how to cut angles, and achieve sizes.
Nate Snyder - Stem Applied in Hobbies

- Science
  - 3D printing - understanding how plastic flows and troubleshooting
  - How Different Lenses effect lighting
- Technology
  - Photography - Drone
  - New Cameras vs. Older Lenses
Nate Snyder - Stem Applied in Hobbies

• Engineering
  • 3D printing, designing parts for my own use
  • Replacing 3D printer stepper motor

• Math
  • Basic Calculations when designing, as well as some trigonometry.
The Extrusion Process
My Department: Extrusion

- Types of Extrusions
  - Various Profile Extrusions
  - Multi-layer Extrusions
  - Tapered Tubing
- In 2016 produced enough medical IV tubing to go around the world **5.5 times**!
Dan Dietrich - My Position: Extrusion Manager

- New Product Development
- Machine and Tool Design
- New Process Development
- Department Process Flow
- Project Management
Dan Dietrich - How STEM applies to my Career

• Science
  • Polymer Synthesis
  • Rheology
  • Polymer and Part Testing

• Technology
  • Anolog and Digital Machine Components
  • Processing Computer Controls
  • New Processing Methods
  • Literally Everything
Dan Dietrich - How STEM applies to my Career

- Engineering
  - Process Optimization
  - Reverse Engineering Components
  - Fixing Problems
  - Six Sigma
  - CAD
- Math
  - Rheological Calculations
  - Statistics
  - Trigonometry
Stem Applied in Hobbies

- Science
  - Understanding how to properly replenish liquids for long distance running
  - Sound reverberations with drumming
- Technology
  - Material advancements in hockey
Stem Applied in Hobbies

- Engineering
  - Designing and drafting parts for my own use
  - Understanding how consumer products are made to make smart purchasing decisions
- Math
  - Basic Calculations when designing parts and working on solving problems
Community Outreach

• B Braun Open Houses
• Carrier Fairs
• Dream Team
Thank you for your time