

LAURA SMARRITO

CARPENTER, FABRICATOR, AND WOODWORKER

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CAREER SUMMARY

Visionary and solution-focused carpenter, fabricator, and woodworker with a comprehensive 10+ year career progression, crafting innovative and functional solutions with enduring quality for commercial, historic, and residential needs. Minimize material costs and waste, proactively analyze process, identifying bottlenecks and generating action plans to minimize project setbacks, mitigate risks, and streamline labor-intensive tasks. **Safety conscious leader, propelling project success, working fluently with both highly advanced technology and within extremely remote global locations with minimal resources.**

TOOLS & MACHINERY

Hand and Power Woodworking Tools
Industrial Woodworking Tools
Metal & Plastic 3D Printers
Laser Cutters
CNC Machining for Wood & Soft Metals

TECHNICAL & COMPUTER

2D & 3D Computer Aided Modeling (CAD)
Computer Aided Manufacturing (CAM)
Microsoft Office Suite
Technical Computing Software
Advanced Data Analysis with Excel

CERTIFICATIONS & TRAININGS

OSHA 30 Hour Certification
OSHA Confined Space Training
OSHA Fall Protection Training
Rough Terrain Fork Truck Certification

INDUSTRY & PROFESSIONAL EXPERTISE

Innovative Design Solutions
Proposal Development
Cross-Functional Collaboration

Process Optimization
Materials Usage Management
Risk Mitigation

Project Performance Analysis
Cost Control/Reduction
Project Roadmap/Timeline Development

EDUCATION

Bachelor of Science in Mechanical Engineering

Drexel University 2016

Dean's Scholarship & Hess Undergraduate Research Scholarship

Engineering Science & Process Technology

Community College of Philadelphia 2012

Phi Theta Kappa Honor Society & Semester Honors

RECENT RELEVANT EXPERIENCE

CARPENTER

Oct 2018 – Feb 2019 & Oct 2019 – Present

Pacific Architects & Engineers

McMurdo Station, Antarctica

Project Carpenter for the largest scientific research base in Antarctica, which supports numerous remote research sites and the South Pole Station. Design and build specialized shipping and storage crates, fixtures, and facilities for scientific and operational equipment in support of science research groups sponsored by the NSF and NASA. Collaborate with teams in set up, opening, and maintenance and closing of temporary and semi-permanent research field camps in remote locations on sea ice, ice shelves, ice sheets, and high elevation locations. Produce detailed design documentation, material take-offs, and cut lists and schedules to optimize building processes for multi-unit fabrication products.

- Designed and fabricated 23' long crates for transport of helicopter rotors by cargo aircraft and sea vessel.
- Enhanced existing design and constructed transport crate for beverage warehouse to transfer 1k+ pounds of cargo.
- Design and fabricate storage crate for freezer storing ice core samples from the Subglacial Antarctic Lake Scientific Access project (SALSA) located about 500 miles from the South Pole. Structure designed to run at optimum temperature while stationed outdoors, allowing ventilation and preventing snow penetration.
- Deconstructed a remote field camp in record time to avoid adverse effects from harsh weather conditions, ultimately avoiding being stranded as a result of a stringent window of time for safe flying conditions.
- Enhanced technical skills and safety of junior carpenters by providing training and supervision on use of industrial shop tools and establishing "Tool Time Tuesdays", an after hours forum for sharing technical skills.
- Increased project quality and build efficiency by fabricating a drafting table and teaching an introductory drafting class.

CARPENTER
Polar Field Services

Jun 2019 – Aug 2019
Summit Camp, Greenland

Carpenter for Summit Camp, a small research base supporting NASA and other science groups at 10,500 ft elevation on the summit of Greenland Ice Sheet. Directed 2+ trade helpers in erection of utility vaults and provision of varying tasks related to relocating berthing modules, and performing station maintenance. Trained trades helpers in safety procedures and protocols concerning the effective use of multiple power tools.

- Worked with 2 trades helpers to design and construct a 9' diameter octagonal deck holding access port for utility vault. Coordinated with heavy equipment operators and leveraged human capital to place utility vault in final location.
- Collaborated with project lead, carpenters, and trades helpers in inspection of all facets of hydraulic lifting system before use. Performed 8-foot lift of elevated research module utilizing 3000 psi hydraulic lifting system.
- Prepared skied berthing module for relocation, coordinated with heavy equipment operators throughout the process, and performed post-relocation repairs, including restoring vinyl roofing, installing metal sliding, and building custom fit insulated utility vault to building interfaces.

HOME RENOVATION & CUSTOM MILLWORK CARPENTER
Independent Contractor

2005–Present
Philadelphia, PA

Perform a variety of projects utilizing unique and historic materials, carrying bids of up to \$14k, including: painting, drywall, plaster repair, trim carpentry, custom millwork, rough framing, and tiling. Collaborate with local carpenters on unique bids and frequently employ 1-2 trades workers to promote rapid project delivery and secure client satisfaction. Perform client consultations, prepare detailed project proposals including itemized cost estimates and scalable pricing plans.

- Advance company growth through flexible project proposals, securing bids at an 85% acceptance rate, satisfactory project deliverables, and exceptional client feedback, in turn generating repeat and new business.
- Collaborated with another tradeswoman to design and construct a 9'x9' built-in bookshelf and entertainment center, installing it in a third-floor parlor of a historic Philadelphia rowhome.
- Transformed restaurant space within Rittenhouse Square, a high-traffic and locally reputable section of town center. Collaborated with another carpenter in cladding existing cabinets in maple tambour and erected a 17' long banquette bench, clad in maple tambour. Reconstructed a 12' long partition wall and installed 350+ square feet of white wall tile with custom colored green grout.
- Designed and fabricated a window seat and storage unit for a bay window within a second-floor parlor. Crafted a full-scale cardboard mock-up to ensure correct measurements and seamless fit.

OTHER CONTRACT EXPERIENCE

WORKSHOP DEVELOPER & TEACHER

West Philadelphia Tool Library
Philadelphia, PA

Designed curriculum and teaching materials for three community workshops on Drywall Installation, Drywall and Plaster Repair, and Trim Work Installation. Taught workshops consisting of 8 to 15 students of varying ages & levels of experience. Instructed students on safe and effective tool use as well as historic and modern building materials and methods.

SHOP SUPPORT TECHNICIAN

Philadelphia Woodworks
Philadelphia, PA

Developed, adopted, and instituted high-impact production methods to minimize production time and maximize product quality across a 75-unit custom millwork production run. Fabricated jig to reduce production time by 75%+, advancing product quality, and increasing material yield for a high volume panel glue-up process. Trained interns in safe operation of shop equipment and production methods for custom millwork, lumber processing, and panel glue-ups.

PLATING DEVELOPMENT TEAM

TE Connectivity
Middleton, PA

Collaborated with electrical engineer to develop, assemble, and install comprehensive vision system to accelerate optimization of a novel selective precious metal plating process, streamlining production and significantly reducing production costs. Worked closely with lead plating technicians to enhance selective lubrication system through the design and implementation of a quick purge system, developing continuous agitation and contained application systems.

RAPID PROTOTYPING TEAM

TE Connectivity
Middleton, PA

Produced functional and proof-of-concept prototypes for an international electronics engineering firm using state of the art Fused Deposition Modeling (FDM) and Direct Metal Laser Sintering (DMLS) additive manufacturing technologies (3D Printing). Designed and implemented testing procedures for post-processing methods to advance geometric stability of DMLS parts. Trained newly hired employee on safe operation of \$1M DMLS machine.

Laura Smarrito

PORTFOLIO

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Hazel Avenue Built-In Bookcase

Our client had an alcove and an idea. We designed and built her a beautiful 9 foot tall by 9 foot wide bookcase and entertainment center. We built the case off site in 6 sections so that it could be transported up a narrow staircase to the third floor where it would be installed.



TOOLS USED

Panel Saw
Table Saw
Jointer
Planer
Hand Router
Router Table
Pocket Screw Jig
HVLP Spray Applicator

MATERIALS USED

¾" Plywood
Poplar
Ben. Moore Advanced Water
Bourne Alkyd Paint



Stock Restaurant

We worked under the direction of an interior designer to transform this restaurant with white tiles, custom colored green grout, and custom millwork clad in maple tambour.



TOOLS USED

Table Saw
Mitre Saw
Tile Saw
HVLP Spray Applicator

MATERIALS USED

$\frac{3}{4}$ " Maple Tambour
Maple
 $\frac{1}{2}$ " Baltic Birch Plywood
EMTECH Water Based
Polycarbonate Clear Coat
Ceramic Tile



Walton Avenue Window seat

Designing window seats for bay windows is a particular challenge because you have to keep track of a lot of different angles. For this, patterning is essential. To help in the design process, I built a full scale cardboard mock-up that I fit in the space to ensure that the dimensions and scale suited the space. I created a full 3D model with Solidworks before I ever took a saw to wood.

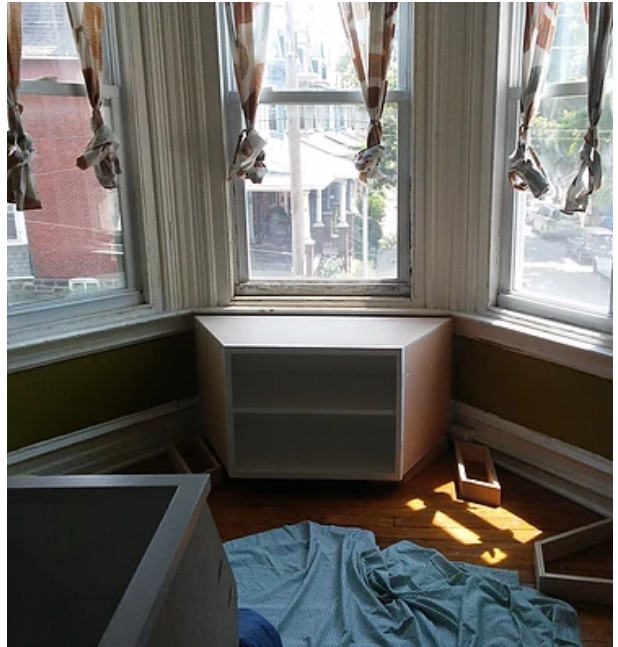


TOOLS USED

Solidworks 3D
Table Saw
Jointer, Planer
Hand Router, Router Table
Biscuit Jointer
Pocket Screw Jig
HVLP Spray Applicator

MATERIALS USED

$\frac{3}{4}$ " Plywood
Poplar
EMTECH Water Based
Opaque Lacquer
EMTECH Water Based
Polycarbonate Clear Coat



Tool Boxes

I needed a better way to store and transport my tools, so I made a set of cabinets and tool boxes that fit in the extended cab portion of my truck. Each box has a lid that can be slid out to access the contents as if it were a drawer, or kept in place to transport to the job site. This system has really helped keep my truck and my worksites tidy so I can focus on the tasks at hand.



TOOLS USED

Table Saw
Tenoning Jig
Mitre Saw

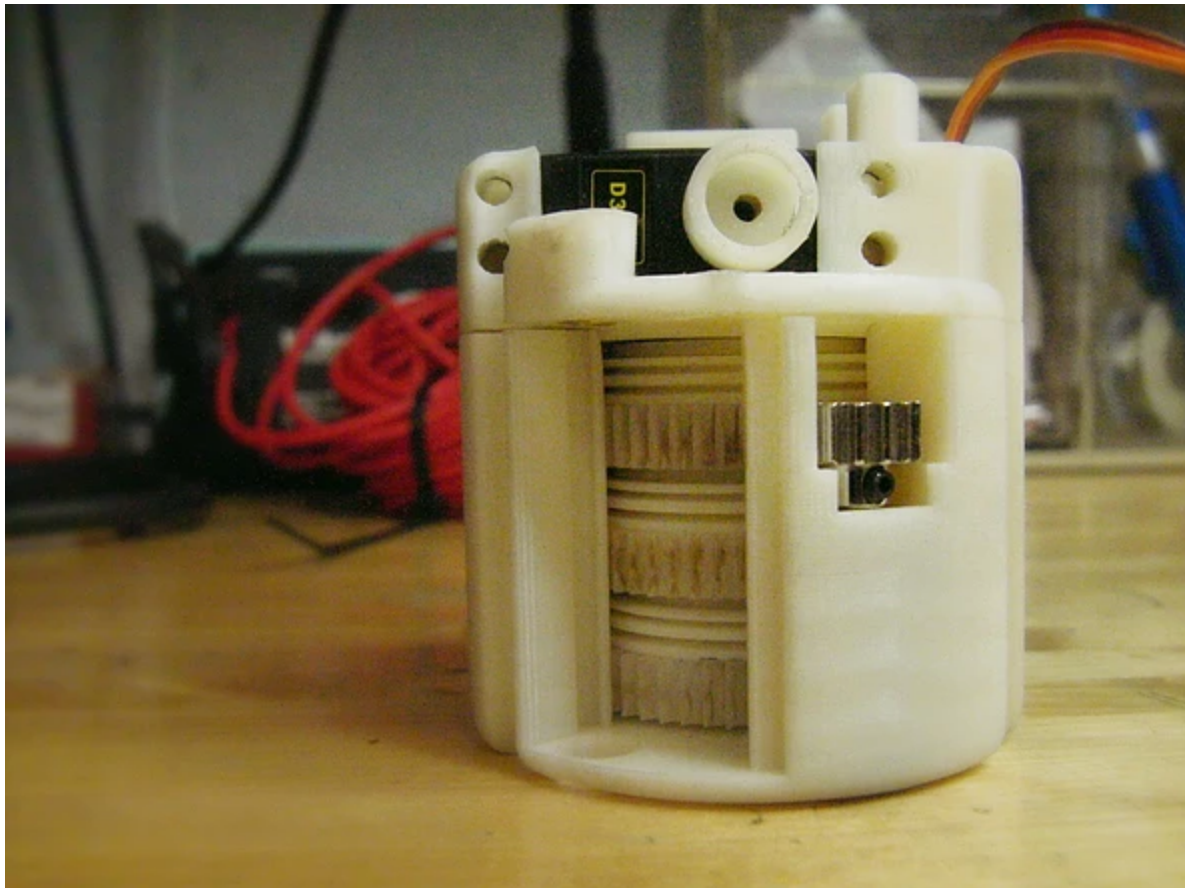
MATERIALS USED

$\frac{3}{4}$ " Baltic Birch Plywood
 $\frac{1}{2}$ " Baltic Birch Plywood



Academic Prototyping

Our team's task was to create a propulsive module that could rotate on 3 axes while also adjusting tension on 3 sets of strings. Our solution was a compact gearbox. We used a laser cutter to create custom designed gears and a UPrint FDM "3D Printer" to create the housing and spools. The result was a functional proof of concept prototype.



TOOLS USED

UPrint SE FDM
Laser Cutter

MATERIALS USED

ABS Plastic
Delrin
Acrylic
DC Servo Motors

