

In lieu of students listing their Graduate Internship Program experience on their resumes, we have provided a summary of the proficiencies students from each track will have gained through their coursework. If there are any questions about the technical skills of the students or general questions about the Interview Event, please reach out to Dr. Stacey York (syork@uoregon.edu , 541-346-6752).

Polymer Science

- Hands-on and theoretical understanding of polymer synthesis routes and techniques. Including but not limited to: free radical, cationic, anionic, ring opening and condensation polymerization reactions.
- Ability to delineate pros, cons and differences in the synthesis of polymers from bulk, solution, and emulsion techniques.
- Characterization of polymers by industrially-common techniques such as GPC, DMA, DSC, TGA and rheology.
- Determination of structure-property relationships by linking thermomechanical data (i.e. moduli, T_g) to molecular architecture and structure (i.e. MW, crystallinity, crosslink density).
- Understanding of Newtonian and non-Newtonian viscoelastic properties (i.e. viscosity, moduli, yield stress) of polymers in dilute solution and the entangled regime.
- Introduction to polymer processing including extrusion, blow molding and injection molding.
- Experience investigating industrially-relevant problems. Examples include:
 - Designing a set of polyurethanes with specific thermomechanical properties from a limited supply of commercially available reagents. Other constraints include cost, production time and aesthetics.
 - Identifying and evaluating environmentally friendly non-tin catalyst alternates for use in the curing of silyl/silane polymers.
 - Characterizing preliminary bonding of waterborne epoxy and lignin solutions.
 - Enhancing the solubility of a hydrophobic drug through encapsulation in a spray-dried dispersion.
 - Determining the cause of irreversible adhesion between commercially available silicone substrates and SiO_x .
- Fall Term Electives: commonly chosen electives (2) include Advanced Polymer Science, Design of Experiments with JMP Software, Electron Microscopy and Surface Elemental Analysis.