Megan S. Anderson

ARCS-MWC Chapter Scholar

2nd year scholar, PhD Candidate, Mechanical and Aerospace Engineering from George Washington University

Research:

Megan's research uses ultrasound to measure the mechanical properties of biocompatible hydrogels, developing a non-destructive characterization method. Ultrasound is also used to vaporize droplets in those hydrogels, exploring a non-invasive payload delivery method.

Describe the expected benefit of your research to society:

The research will offer fundamental knowledge of acoustic droplet vaporization in 3D-printable biomaterials, potentially offering new targeted therapeutic delivery systems for payloads such as growth factors and cancer drugs.

Indicate how an ARCS award will benefit your research:

Myexperiencewithresearchhasbeeninseparablefromthescientificcommunity.Asanundergraduatestudent,Ihadtheopportunitytopresentatnationalandinternationalconferencesthroughthe SocietyofPhysicsStudents.Thismotivatedmetoinvestmoretimeinresearchand,eventually,decidetopursuegraduateschool.Meanwhile,Imetasupportiveanddiversenetworkofpeople,gainingfriendshipsandinsights.Now,asaPhDstudentwhoispassionateyetnewtoherfield,Ihavecontinuedtolookforandfindmotivationthroughscientificsocieties.TheARCSawardresonateswithmebecauseIseeitastheperfectsupportforthistimeinmycareer;supportfromanorganizationthatencouragesresearchbyencouragingresearchers,bothrelievingthemoffinancialstressandenliveningthemthroughcommunity.

Career objectives:

My dream job would be to run a government or industry lab at the interface of research and application while staying highly involved with the scientific community through the organizations (such as the Society of Physics Students, Society of Rheology, and Acoustic Society of America) that have inspired me.

Megan's Recent Publications

- Osborn, J., **Anderson, M. S.,** Beddingfield, M., Zhang, L. G., & Sarkar, K. (2021). Acoustic droplet vaporization of perfluorocarbon droplets in 3D-printable gelatin methacrylate scaffolds. *Ultrasound in Medicine & Biology*, *47*(11), 3263–3274

- **Anderson, M.,** Strong, D., Baker, B. (2017). Activities to investigate wavelength-shifting optical fibers, *Physics Education* 52.4