**Benjamin S. Rinehart**

Wright State University Email: rinehart.32@wright.edu

3640 Colonel Glenn Hwy.

344 Neuroscience Engineering Collaborative

Dayton, OH 45435

**Education**

PhD Engineering Wright State University (2020)

MS Biomedical Engineering Wright State University 2016

BS Biomedical Engineering Wright State University 2014

**Certifications**

1. Class 4 & 3b LASER training. Department of Environmental Health and Safety, Wright State University. (2015).
2. Biomedical Research Investigators – Stage 1. Collaborative Institutional Training Initiative. Wright State University. (2015).
3. Non-clinical x-ray tube operation. Ohio Department of Health via BME 4701 course, Wright State University. (2014).

**Research Positions**

1. Entrepreneurial Lead. iCorp@Ohio 2016 Cohort. EFOST Team. Wright State University (Summer 2016).
2. Graduate Research Assistant, Dept. of Biomedical, Industrial & Human Factors Engineering, Wright State University, (May 2014 – Present).
3. Image Truther, Wright State Research Institute, (Jan 2013- May 2014).

**Awards and Honors**

1. SPIE Optics and Photonics Education Scholarship (2015).

**Academic and Professional Society Service**

1. Wright State University Engineers Without Borders (EWB-Student Chapter) - Vice-President (2014-2015).
2. Wright State University Biomedical Engineering Society (BMES-Student Chapter) – Member.
3. Biomedical Engineering Society (BMES) - Student Member.
4. International Society for Optics and Photonics (SPIE) - Student Member.
5. The Optical Society of America (OSA) – Student Member

**Publications**

Journal Articles

1. Benjamin S. Rinehart, Caroline G. L. Cao, "Concentration and size dependence of peak wavelength shift on quantum dots in colloidal suspension," Opt. Eng. 55(8), 087106 (2016)

Conference Proceedings

1. Rinehart, Benjamin., Martin, Matt., Cao, Caroline G.L., (2015). Study of emissivity dependence upon concentration in CdTe quantum dots. SPIE Smart Structures/NDE 2015. San Diego, California. March 8-12 2015.
2. Diller, E., Rinehart, B., Allen, J., Merrell Jr, T., Reynolds, D., Phillips, C., (2014). Pneumatic Muscle Actuator Use in Leg Extension Exercise. Biomedical Engineering Society Annual Meeting. San Antonio, Texas. October 22-25, 2014.

**Research Projects**

1. Rinehart et al. (2014-2015). Endoscopic Fiber Optic Shape Tracker. MS Thesis Research Project, Biomedical Engineering, Wright State University.
2. Mensah et al. (2014). ICG imaging. Senior Design Project, Biomedical Engineering, Wright State University. (Mentor)
3. Allen, J., Diller, E., Merrell, T., Rinehart, B. (2014). Pneumatic Muscle Actuator Use in Leg Extension Exercise. Undergraduate Independent Study Project, Biomedical Engineering, Wright State University.
4. Allen, J., Diller, E., Merrell, T., Rinehart, B. (2014). Instrumented glove for force measurements in medical device manipulation. Senior Design Project, Biomedical Engineering, Wright State University.

**Research Experience**

**Wright State University**

**Graduate Research Assistant May 2014 - Present**

* Worked in Ergonomics in Remote Environments Lab (EREL) under Dr. Caroline Cao
* Specifically worked on EFOST and ICG Imaging projects
* Mentor for 2014-2015 ICG Capstone project at Wright State
* Received laboratory experience working with: Class 3b laser, Quantum Dots (CdTe & CdSe), LabVIEW, CCD Spectrometer, Indocyanine Green (ICG), Fiber Optic Micromachining, CMOS imaging
* Received academic experience contributing on: NIH R21 grant proposal, NIH SBIR grant proposal, NSF iCorp@Ohio proposal, Medical Device market research

**Wright State Research Institute Jan 2013 - May 2014**

**Image Truther**

* Student contractor through the Wright State Research Institute for the Air Force Research Lab (AFRL).
* Contributed on AFRL project entitled Cognitive Measures and Models for Persistent Surveillance involved obtaining aerial images of a focus area to be later analyzed.
* Tracked images moving within focus area using AFRL’s proprietary software.
* Special Projects undertaken: Routinely chosen by supervisors to undertake special projects including tracking specific, pre-planned targets and monitoring/conforming work done by coworkers to fit into specifications.

**Research Skills**

Experience operating:

* Continuous Wave - Solid State Lasers,
* Fibered CCD Spectrometer
* High resolution LED Zoom Microscopes, Metallurgy Microscopes
* Non-clinical X-ray tube
* Pneumatic Muscle Actuators

Fluent in:

* MATLAB
* R/RStudio
* Microsoft Office

Familiar with:

* Buffalo assembly language
* SPSS
* LabVIEW