

Education

Ph.D. Electrical Engineering
May 2022 – Expected May 2025

University of Oklahoma
Dissertation: *Design, Test, and Measurement of Time-Varying Antennas.*

M.S. Electrical Engineering
Aug 2020 - May 2022

University of Oklahoma
Thesis: *External Quality Factor of Antennas and Their Use in Filtenna Design.*

B.S. Electrical Engineering
Aug 2016 - May 2020

University of Oklahoma

Technical Experience

**Graduate Research Assistant
– Ph.D.**
May 2022 - Present

Electrically Small Non-LTI Antenna Research under IARPA EQuAL-P

- Design, fabrication, and measurement of various electrically small reference antennas
- Develop methods of measuring receive effective aperture and noise figure of electrically small non-LTI antennas
- Develop effective simulation method of time-varying antennas in Keysight ADS

**Graduate Research Assistant
– M.S.**
Aug 2020 - May 2022

Reconfigurable Filtenna Research under ONR

- Design, fabrication, and measurement of a reconfigurable S-band Filtenna capable of tuning a full octave from 2-4 GHz
- Developed method of extracting antenna external quality factor for use in general filtenna design

RF Engineer Intern
June 2019 - August 2019

U.S. Cellular

- Analysed 4G LTE network to identify weak-points in existing coverage
- Planned and designed over 40 RAN sites to strengthen coverage of 4G LTE network in preparation for 5G NR implementation

RF Systems Engineer Intern
May 2017 - August 2017

Rhode & Schwarz

- Created, updated, and maintained cable plans, lists, and designs as well as overall project designs
- Helped integrate and test electrical and RF systems for signal monitoring in a mobile platform

Journal Publications

Sept 2022

M. R. Thibodeau, A. L. Bauer, C. G. Blosser, S. Saeedi, J. E. Ruyle and H. H. Sigmarsson, "Frequency Agile Slot Antenna Using Contactless Capacitive Loading," in *IEEE Access*, vol. 10, pp. 99460-99466, 2022.

Conference Publications & Presentations

Sept 2022

A. Bauer, R. Agasti, C. Blosser, J. Wiegand, C. Weale, R. Mattingly, S. Flandermeyer, J. Metcalf, H. Sigmarsson, J. Ruyle, "Investigation of System Noise Improvements with Tunable Filtenna," in *2022 Antenna Applications Symposium*, Allerton Park, Monticello, IL, Sept. 2022.

Additional Skills

Software – High Frequency Simulation Software (ANSYS HFSS), FEKO, MATLAB, Advanced Design Systems (ADS), Microwave Office (AWR), Multisim

Fabrication – Laser Milling, Mechanical Milling, Additive manufacturing with plastic filament and resin, Electroplating, Photolithography, Multi-layer Lamination

Measurement – Anechoic Chamber Operation, Real Time Spectrum Analyzers, Vector Network Analyzers, Arbitrary Waveform Generators, Oscilloscopes