

Nicholas D. Boltin
Biomedical Engineering
University of South Carolina
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ACADEMIC APPOINTMENT

2018 - Academic Instructor, Biomedical Engineering, University of South Carolina

EDUCATION

Ph.D. Biomedical Engineering, University of South Carolina
2018 *A Comprehensive Re-engineering of the Hospital Emergency Triage System*
Committee: Hodayoun Valafar (Chair), Jenay Beer, Joan Culley, Jill Michels, Mark Uline

B.S. Engineering, Appalachian State University
2005 *Business Studies minor*

GRANTS, FELLOWSHIPS, AND AWARDS

2018 Innovation Corps Site Program (\$3,000)
National Science Foundation

2015-2018 Graduate Research Appointment (\$25,000/year + tuition)
National Institutes of Health

2014-2018 Graduate School Conference Travel Grant (\$500/year)

2012-2015 Undergraduate Research (\$20,000/year)
National Institutes of Justice

PUBLICATIONS

2018 Boltin N, Culley J, Valafar H: **Application of Dimensional Reduction and Artificial Neural Networks to Improve Emergency Department Triage during Chemical Mass Casualty Incidents.** *Article in Press* 2018.

2018 Boltin N, Valdes D, Culley JM, Valafar H: **Mobile Decision Support Tool for Emergency Departments and Mass Casualty Incidents (EDIT): Initial Study.** *Jmir Mhealth Uhealth* 2018, **6(6)**.

- 2016 Boltin N, Vu D, Janos B, Shofner A, Culley J, Valafar H: **An AI model for Rapid and Accurate Identification of Chemical Agents in Mass Casualty Incidents.** In: *Int'l Conf Health Informatics and Medical Systems: 2016; Las Vegas, NV.* CSREA: 169-175.
- 2015 O'Brien WL, Boltin ND, Lu ZY, Cassidy BM, Belliveau RG, Straub EJ, DeJong SA, Morgan SL, Myrick ML: **Chemical Contrast Observed in Thermal Images of Blood-Stained Fabrics Exposed to Steam.** *Analyst* 2015, **140**(18):6222-6225.
- 2015 O'Brien WL, Boltin ND, DeJong SA, Lu ZY, Cassidy BM, Hoy SJ, Morgan SL, Myrick ML: **An Improved-Efficiency Compact Lamp for the Thermal Infrared.** *Applied Spectroscopy* 2015, **69**(12):1511-1513.
- 2014 DeJong SA, Cassidy BM, Lu ZY, Pearl MR, McCutcheon JN, O'Brien W, Boltin ND, Belliveau RG, Morgan SL, Myrick ML: **Effect of Azimuthal Angle on Infrared Diffuse Reflection Spectra of Fabrics.** *Spectroscopy-Us* 2015, **30**(12):23-25.

CONFERENCE AND PRESENTATION ACTIVITY

- 2016 Boltin N, Vu D, Janos B, Shofner A, Culley J, Valafar H: **An AI model for Rapid and Accurate Identification of Chemical Agents in Mass Casualty Incidents.** In: *Int'l Conf Health Informatics and Medical Systems: 2016; Las Vegas, NV.* CSREA: 169-175.
- 2015 Vu D, Janos B, Shofner A, Boltin N, Beer J, Valafar H, Culley J: **Evaluation and Improvement of WISER Software for Rapid Identification of Chemical Exposure in a Mass Casualty Incident.** In: *SC INBRE: 2015; Columbia, SC.*
- 2014 Boltin N.D., Belliveau R.G., Cassidy B.M., DeJong S., Lu Z., O'Brien W.L., Straub E., Morgan S.L., M.L. M: **LabVIEW programming of AC reflectance and thermal infrared imaging for forensic science.** In. 46th ACS Southeast Undergraduate Research Conference; 2014.
- 2013 Boltin N, Cassidy B, Lu Z, Myrick M, Morgan S: **Performance of Thermographic Latent Heat Imaging for Forensic Detection of Blood.** In: *SciX: 2013; Milwaukee, WI.*
- 2012 O'Brien WL, Boltin NB, Hoy SJ, S. D, S.L. M, Myrick ML: **Evaluation of Thermal Infrared Sources for AC Imaging Applications.** In: *SciX: 2012; Kansas City, MO.*

PATENTS AND COPYRIGHTS

- 2018 EDICT: A Mobile Informatic Tool for Emergency Departments and Mass Casualty Incidents © 2018
- 2013 LabVIEW program for IR research Camera Data Collection © 2013

- 2013 LabVIEW program for IR research AC Image Processing © 2013
- 2013 LabVIEW program for IR research DC Image Processing © 2013
- 2013 Infrared Light Sources and Methods of Their Use and Manufacturing, Serial no. 61/762505, USC#988
- 2013 Thermographic Imaging of Chemical Contrast via Differential Heating, Serial no. pending, USC#1006

RESEARCH EXPERIENCE

- 2015- Research Affiliate, “Validating Triage for Chemical Mass Casualty Incidents – A First Step” (R01LM011648), University of South Carolina
- 2015-2018 Research Assistant to Dr. Homayoun Valafar, Computer Science and Engineering, University of South Carolina
- 2012-2015 Research Assistant to Dr. Michael Myrick, Chemistry Department, University of South Carolina

MEMBERSHIPS AND AFFILIATIONS

- 2015- SC IDeA Networks of Biomedical Research Excellence
- 2014- 2018 Chemical Engineering Graduate Student Organization
- 2014- Biomedical Engineering Society
- 2013 LabVIEW Student Ambassador

TEACHING HISTORY

Instructor of Record

- Fall 2018 Kinetics in Biomolecular Systems
- Fall 2018 Data Analytics for Biomedical Engineers
- Spring 2018 Biomedical Instrumentation
- Spring 2013 Introduction to LabVIEW Programming

Teaching Assistant

- Fall 2014 Biomonitoring and Electrophysiology
- Spring 2015 Introduction to Biomechanics
- Fall 2015 Biomonitoring and Electrophysiology

Spring 2016 Introduction to Biomechanics
Fall 2016 Biomonitoring and Electrophysiology
Spring 2017 Introduction to Biomechanics
Fall 2017 Biomonitoring and Electrophysiology
Fall 2017 Honors Introduction to Biomedical Engineering

SERVICE AND MENTORING

2018 - Undergraduate Faculty Committee
2018 - Undergraduate Academic Advisor