

# Emma P. Bortz

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## EDUCATION

**Tulane University | Bachelor of Science in Engineering**

08/2014 – 05/2018

**Major:** Biomedical Engineering

**New Orleans, LA**

**Minor:** Mathematics

**Thesis:** High-Intensity Focused Ultrasound is Synergistic with Ethanol in Reduction of Liver Cancer Progression In Vitro.

**GPA:** 3.9/4.0

## RESEARCH EXPERIENCE

**Research Assistant | Biomedical Acoustics Laboratory**

08/2016 – Present

**Tulane University**

**New Orleans, LA**

- Utilize high intensity focused ultrasound to ablate in vitro and in vivo tumors.
- Perform sterile cell culturing of prostate, hepatic, and breast cancer cell lines.
- Examine changes in tumorigenicity of treated cancer cells with adhesion, migration, and proliferation assays.
- Participate in grant proposal and paper writing.

**Research Intern | Multiscale Biostatistics and Bioinformatics Laboratory**

05/2016 – 08/2016

**Tulane University**

**New Orleans, LA**

- Created MATLAB programs for multivariate statistical analysis of single nucleotide polymorphisms and fMRI data of patients with Schizophrenia.
- Used Cypress high-performance computing cluster to efficiently run large datasets.
- Underwent Citi Program Training in Human Subjects Research.

## WORK EXPERIENCE

**Teaching Assistant | Center for Anatomical and Movement Sciences**

08/2017 – Present

**Tulane University**

**New Orleans, LA**

- Facilitate small groups of students in their dissections and help students approach the comprehensive study of anatomy in an unintimidating way.
- Assist in advanced cadaver dissection using surgical tools.
- Collaborate with the teaching team and engage in duties outside of class time.

**Senior Camp Counselor**

Summer 2014 and 2015

**Camp Solomon Schecter**

**Tumwater, WA**

- Assisted in the implementation of a music program and publication of a camp song book.
- Created a yoga program to empower young campers via mindful meditation and exercise.
- Maintained professional communication with parents
- Perfected argument-mediation between both children and coworkers.

**Academic Tutor**

01/2015 – 05/2015

**Cohen College Prep**

**New Orleans, LA**

- Maintained student interest by creatively introducing scientific and mathematical concepts and encouraging student participation.

- Prepared struggling students to pass their statewide EOC exams.
- Motivated students by maintaining a positive learning environment.

## Piano Instructor

08/2011 – 05/2013

### J. Smith Piano Studio

Spokane, WA

- Created personalized lesson plans encompassing music theory, piano technique, and performance skills.
- Facilitated an interactive learning environment in which students found enthusiasm in learning piano.
- Prepared students for bimonthly recitals.

## TECHNICAL SKILLS

- **Software:** Windows and Linux operating systems; GraphPad statistical analysis and graphing software; MATLAB; SolidWorks; general use of office suites. Some experience with COMSOL Multiphysics.
- **Laboratory Skills:** Mammalian cell culture, flow cytometry, optical and epifluorescence microscopy, centrifugation, hemocytometry, pipetting. Completed IACUC animal training in anesthesia, euthanasia, and dissection.
- **Languages:** English (native language), Spanish (intermediate).
- **Human-Centered Design**
- **Data Collection and Analysis**
- **Teaching, Tutoring and Presenting**

## PRESENTATIONS

H. Murad, E. Bortz, D. Khismatullin. *HIFU is synergistic with anti-neoplastic drugs that target ER stress*. Poster presentation at the 2017 BMES Annual Meeting, Phoenix, AZ, October 13, 2017.

E. Bortz et al. *Ethanol and HIFU revert prostate cancer cells to a healthy phenotype via ROS production and NF- $\kappa$ B blockage*. Poster presentation at the 2017 BMES Annual Meeting, Phoenix, AZ, October 12, 2017.

E. Bortz et al. *Molecular Mechanisms of Adjuvant HIFU Therapy for Prostate Cancer*. Poster Presentation at Tulane University CELT Research Day, New Orleans, LA, April 5, 2017.

## GRANTS, HONORS, AND AWARDS

Tau Beta Pi Honor Society | Louisiana Beta (2017)

6-time Dean's List Awardee

Tulane Honors Summer Research Program Participant (2017)

Georges Lurcy Grant Winner | Newcomb-Tulane College (2016, 2017)

Newcomb College Institute (NCI) Grant Winner (2016)

Center for Engaged Learning and Teaching (CELT) Grant Winner (2016)

Premier Scholar Award | Tulane University (2014)

Valedictorian | Mead Senior High School (2014)

## PROFESSIONAL MEMBERSHIPS

Member | Biomedical Engineering Society (2016-Present)