

LOAN T. BUI

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----- EDUCATION

- 2017 **PhD, Biomedical Engineering**, University of Texas at Arlington (UTA), Arlington, TX.
○ Dissertation: *Understanding Key Genetic Mutations and Molecular Alterations on Increasing Migration, Viability, Drug Resistance of Malignant Brain Tumor in Physical Confinement*
○ Committee: *Young-Tae Kim, Cheng-Jen Chuong, Samir Iqbal, Kytai Nguyen*
- 2011 **BE, Biomedical Engineering**, The Catholic University of America (CUA), Washington, DC.
○ Senior Design: *Acoustic Sensing Characterization Device*
○ Advisor: *Victor Frenkel*
- 2008 **BS, Biotechnology**, University of Natural Sciences, Ho Chi Minh City, Vietnam.
○ Thesis: Study of micro flora isolated from cocoa fermentation
○ Advisor: *Le Van Bui*

----- ACADEMIC AND RESEARCH POSITION

- 1/2018-Present **Postdoctoral Research Associate**: *University of Notre Dame*, Aerospace and Mechanical Eng, Notre Dame, IN.
○ Research Interests: Lymphatic Metastasis, Microfluidic Therapeutic Platforms
○ Major Duty: Doing research with Donny Hanjaya-Putra at Center for Stem Cells and Regenerative Medicine; Leading and Training graduate and undergraduate students; Writing research proposals; Publishing and Presenting original works; Attending Professional Conferences
- 9-12/2017 **Post-Doctoral Research Associate/Fellow**: *UTA*, Biomedical Engineering, Arlington, TX.
○ Research Interests: Cancer Metastasis, Brain Tumor Invasion, Biomarkers, Microfluidic Diagnostic Platforms
○ Major Duty: Conducted research with Young-Tae Kim; Trained laboratory personnel; Presented papers at technical meetings and Represented the laboratory
- 8/2012-8/2017 **Graduate Research and Teaching Assistant**: *UTA*, Biomedical Engineering, Arlington, TX.
○ Major Duty: Assisted Professors and Lecturers in teaching various courses ranging from undergraduate to graduate levels; Conducted research studies and maintained wet lab functions; Presented works in National Conferences and published scientific papers; Mentored undergraduate students, master students and summer interns

----- AWARDS AND HONORS

- 2017 **Alfred and Janet Potvin Award**: Outstanding bioengineering students
2011 **Tau Beta Pi**: Engineering Honor Society
2010 **Nagel Scholar**: Scholarship awarded to the top engineering student
2008 **Odon Wallet Scholarship**: For excellence in research
2008 **Lawrence S. Ting Scholarship**: For excellent academic achievement, school year 2007-2008

----- SKILLS

Technique Microfluidics, Photolithography, Softlithography, 3D-Printing, Biomaterials, Polymeric Fabrication, Cancer Research, Primary Cell Culture, Animal Study, Immunofluorescence staining, Cell-based Assay, SEM Microscopy, Flow Cytometry, PCR, Western Blot, Data Analysis

Software AutoCAD, Solidworks, Matlab, R, Minitab, Labview, ImageJ, Photoshop, Microsoft Office
Others Leader work, Team work, Teaching, Mentoring, Verbal Communication, Time management, Scientific Writing, Presentation

----- RESEARCH EXPERIENCE

- 2015-2017 **Ph.D. Research**, *University of Texas at Arlington*, Arlington, TX.
Project: Characterizing various changes in biomolecules in migrating tumor cells
- Results: Develop a novel microchannel platform for collecting migrating cancer cells for further gene expression quantification.
 - The report has been finalized for publication.
- 2014-2015 **Ph.D. Research**, *University of Texas at Arlington*, Arlington, TX.
Project: Identifying roles of key genetic mutations on increasing migration of brain cancer
- Results: Rapid and efficient analysis of migratory of cancer cells and their correlate properties that could be helpful for the development of anti-migratory drugs.
 - The article has been published in *Biomedical Microdevices*.
- 2013-2015 **Ph.D. Research**, *University of Texas at Arlington*, Arlington, TX.
Project: Understanding the impact of confined microenvironments on drug resistance of brain tumor lines with different genetic malignancy
- Results: Study of the viability and drug resistance of different malignant brain cell lines in different physical confinements.
 - The paper has been published in *Nature Scientific Reports*.
- 2011-2012 **Summer Internship Research**, *Vitreous State Laboratory*, CUA, Washington, DC.
- Results: Designed and tested 3D-scaffolds for tissue engineering using different materials such as Agarose, Gelatin, Chitosan, Hydroxyapatite, Hydroxyethyl starch.
 - Research work was presented at BMES 2012.
- 2010-2011 **Undergraduate Research**, *BONE/CRAB Lab*, CUA, Washington, DC.
- Assisted with lab's research projects including preparing hands-on experiments, accumulating, reporting and analyzing data, writing papers. The research focused on the field of Biomaterials and Tissue Engineering.
- 2006-2008 **Undergraduate Research**, *Plant biotechnology and Bioconversion Laboratory*, Vietnam.
- Studied microorganism population isolated from cocoa fermentation. Performed microbiological analyses including isolation, characterization, identification; especially for yeast, mold, lactic acid bacteria, and acetic acid bacteria. Implemented biomolecular and biochemistry techniques: Genome Extraction, PCR, Sequence Analysis, Electrophoresis, Gas chromatography and mass spectrometry.

----- TEACHING EXPERIENCE

UNIVERSITY OF TEXAS AT ARLINGTON

- Spring 2017 **Neural Engineering (BE5329)**, Graduate Teaching Assistant.
Fall 2016 **Measurement Lab (BE3320)**, Graduate Teaching Assistant.
Fall 2016 **Introduction to Tissue Engineering and Drug Delivery (BE4368)**, Graduate Teaching Assistant.
Spring 2016 **Neural Engineering (BE5329)**, Graduate Teaching Assistant.
Spring 2016 **Tissue Engineering and Drug Delivery Lab (BE3367)**, Graduate Teaching Assistant.
Fall 2015 Introduction of Tissue Engineering and Drug Delivery, Graduate Teaching Assistant.
Spring 2015 Neural Engineering, Graduate Teaching Assistant.
Spring 2015 Tissue Engineering and Drug Delivery Lab, Graduate Teaching Assistant.
Fall 2014 Introduction of Tissue Engineering and Drug Delivery, Graduate Teaching Assistant.
Spring 2014 Neural Engineering, Graduate Teaching Assistant.
Fall 2013 Fundamentals of Bioengineering, Graduate Teaching Assistant.

UNIVERSITY OF NATURAL SCIENCE

Spring 2008 **Biochemistry Lab**, Undergraduate Teaching Assistant.

----- PUBLICATIONS

JOURNAL ARTICLES

- [J7] **Bui L**, Bhuiyan HS, Hendrick A, Chuong C, Kim Y. Role of key genetic mutations on increasing migration of brain cancer cells through confinement. *Biomedical Microdevices*. 2017 Sep, 19:56.
- [J6] **Bui L**, Aleid A, Alassaf A, Wilson OC, Raub CB, Frenkel V. Development of a custom biological scaffold for investigating ultrasound-mediated intracellular delivery. *Materials Science and Engineering: C*. 2017 Jan 1;70:461-70.
- [J5] Batabyal, S., Satpathy, S., **Bui, L.**, Kim, Y. T., Mohanty, S., Bachoo, R., & Davé, D. P. (2017). Label-free optical detection of action potential in mammalian neurons. *Biomedical Optics Express*, 8(8), 3700-3713.
- [J4] Ali W, Ilyas A, **Bui L**, Sayles B, Hur Y, Kim YT, Iqbal SM. Differentiating Metastatic and Non-metastatic Tumor Cells from their Translocation Profile through Solid-state Micropores. *Langmuir*. 2016 May 6;32(19):4924-34.
- [J3] Ali W, Moghaddam FJ, Raza MU, **Bui L**, Sayles B, Kim YT, Iqbal SM. Electromechanical transducer for rapid detection, discrimination and quantification of lung cancer cells. *Nanotechnology*. 2016 Mar 29;27(19):195101.
- [J2] **Bui L**, Hendricks A, Wright J, Chuong CJ, Davé D, Bachoo R, Kim YT. Brain Tumor Genetic Modification Yields Increased Resistance to Paclitaxel in Physical Confinement. *Scientific reports*. 2016;6.
- [J1] Nguyen T, **Bui L**, Tran N, Frenkel V. Calibrating therapeutic ultrasound transducers: corrections for the effects of acoustic cavitation and acoustic streaming. *Техническая акустика*. 2013;13.

CONFERENCE PRESENTATIONS

- [C10] **Loan Bui**, Tamara Hill, Sayem H Bhuiyan, Qionghua Shen, Vanessa Saavedra, Calvin Kong and Young-tae Kim, "Proteomic Changes of Cells during Their Migration in Physical Confinement," The Annual Celebration of Excellence by Students Symposium (ACES), March 2017, Arlington, TX. (Dean's Award: Outstanding Poster Presentation)
- [C9] **Loan Bui**, Alissa Hendrick, Tamara Hill, Richard Leviner and Young-tae Kim, "Key Gene Mutations for Increasing Migration of Brain Cancer Cells via Confinement," Biomedical Engineering Society (BMES), October 2016, Minneapolis, MN.
- [C8] Alissa Hendricks, **Loan Bui**, Richard Leviner, Young-tae Kim, "Cellular Interactions of Pancreatic Cancer Cells to Peripheral Nerves as a Model of Perineural Invasion," BMES, October 2015, Tampa, FL.
- [C7] **Loan Bui**, Alissa Hendricks, Richard Leviner, and Young-tae Kim, "Non-microtubule Targeting Drug Increased Eradication Effect on Brain Tumor Cell Lines in Physical Confinement," BMES, October 2015, Tampa, FL.
- [C6] **Loan Bui**, Alissa Hendricks, and Young-tae Kim, "Brain Tumor Genetic Modification Yields Increased Resistance to Paclitaxel in Physical Confinement," ACES, March 2015, Arlington, TX.
- [C5] Bailey Sayles, **Loan Bui**, Cheng-Jen Chuong, Digant Davé, Yuxiao Sun, Robert Bachoo, and Young-tae Kim, "Quantitative Comparison of Metastasizing and Non-metastasizing Breast Cancer Cell Migration via Various Dimension Microchannels," Society for Biomaterials (SFB), May 2014, Denver, CO.
- [C4] **Loan Bui**, Bailey Sayles, Yeun Hur, Cheng- Jen Chuong, Digant Davé, Robert Bachoo, and Young- tae Kim, "Flower Microchannel Device for Studying Brain Cancer Cell Migration," SFB, May 2014, Denver, CO.
- [C3] **Loan Bui**, Bailey Sayles, Oguz Yetkin, and Young-tae Kim, "Developing Microchannel Device for Cancer Cell Migration Study," ACES, March 2014, Arlington, TX.
- [C2] Ben Nguyen, **Loan Bui**, Alberto Silva, Otto C. Wilson, Patrick Mehl, Victor Frenkel, "Preliminary assessment of 3D biological scaffolds for evaluating therapeutic ultrasound exposures," BMES, October 2012, Atlanta, GA.
- [C1] **Loan Bui**, Patrick Mehl, Roberto de Silva, Otto Wilson, "Freeze-Dried Chitosan-Hydroxyapatite 3D Scaffolds with Agar or Gelatin as Support Matrix," BMES, October 2012, Atlanta, GA.

----- **SERVICE ACTIVITIES**

- 2015-2017 **Vietnamese Teaching Volunteer**, Phap Quang Buddhist Temple, Grand Prairie, TX
- Oct 2016 **Room Monitor**, BMES Conference, Minneapolis, MN
- Apr 2016 **Representative of Book Drive For Vietnam**, Arlington, TX
- Nov 2010 **Judge**, The LEGO Robotics Tournament, Smithsonian's Ripley Center
- Aug 2010 **Orientation Advisor**, Center for Global Education, CUA