YUTING QIU

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OVERVIEW

- Ph.D. in Biomedical Engineering.
- Master of Public Health from Harvard T.H. Chan School of Public Health.
- Master of Fine Arts from Berklee College of Music.
- Over ten years of experience in cell therapy and tissue engineering.
- Skills in applying economic, legal, and political analysis to the design, implementation, and evaluation of health care and public health policies.
- Give presentations at national and international conference. Authorized seven journal publications as first author.
- Highly self-motivated individual with ability to efficiently manage multiple tasks.

EDUCATION

Berklee College of Music, Boston, MA

Academic Departments	GPA: 3.9/4.0	Dec 2019

Master of Fine Arts
Related Courses: Arts History, Arts Business

Harvard University, Boston, MA

Harvard T.H. Chan School of Public Health	GPA: 3.8/4.0	May 2018

Master of Public Health (Part-Time)
Related Courses: Enterprise Management, Entrepreneurship & strategy

Northeastern University, Boston, MA

College of Engineering	GPA: 3.8/4.0	Aug 2018

PhD in Chemical Engineering

College of Engineering	GPA: 3.8/4.0	Dec 2016

Master's Degree in Engineering
Related Courses: Transport Phenomena, Cellular Engineering

College of Science	GPA: 3.0/4.0	Jan 2015

Master's Degree in Science
Related Courses: Analytical Separation, Principles of Mass Spectrometry, Glycoprotein

Jilin University, Changchun, China

College of Engineering	GPA: 3.5/4.0	Jun 2013

Bachelor's Degree in Engineering
Related Courses: Polymer Chemistry, Polymer Design

College of Mathematics	GPA: 3.8/4.0	Jun 2013

Bachelor's Degree in Actuarial Sciences (Minor)
Related Courses: Applied statistics, Risk Modeling, Simulation, Programming in Matlab, Chain management

EXPERIENCE

Research Associate

Boston Children Hospital, Boston, MA	Sep 2019 – Now

- Three-dimensional single cell patterning for high-throughput studies of tumor cell and extracellular matrix heterogeneity

- Confocal microscopy image analysis

Interdisciplinary research assistant Intern

MIT Media Lab, Cambridge, MA   May 2019 – Aug 2019
- Multisurface Projection Art
- Machine learning models for predicting drug approvals and clinical-Phase transitions
- Using clinical trial data to personalize treatment decisions
- Using data science to forecast clinical trial outcomes

Postdoctoral Fellow

Northeastern University, Boston, MA   Aug 2018 – Mar 2019
- 3D spherical microtissues and microfluidic technology for multi-tissue experiments and analysis

Analytical Separations Engineer Intern

Catabasis Pharmaceuticals Inc., Cambridge, MA   May 2017 – Oct 2017
- Guide project DMPK activities across multiple phases, including lead discovery, lead optimization and regulatory filings

Research Associate

Harvard Medical School, Boston, MA   Jan 2015 – Aug 2018
- Optimization Analytics, Data Analysis, Operations research

Research Assistant at Department of Biomedical Engineering

Northeastern University, Boston, MA   Apr 2013 – Aug 2018
- 3D microtissues as in vitro model for personalized radiation therapy
- Researching 3D microtissue assay for high-throughput cytotoxicity of nanoparticles
- Designed multi-marker based blood assay for rapid reliable screening of diseases

PROFESSIONAL EXPERIENCE

Three-Dimensional microtissue assay for high-throughput cytotoxicity of nanoparticles
- Three-dimensional microtissue cell culture.
- Studied radiation damage to cells using a variety of techniques with different end points.
- Examined the damage to cell membranes and reduction in metabolic activity.
- Designed multi-marker-based blood assay for rapid reliable screening of diseases.

Liver S9 fraction assay as a screen for metabolic stability
- Identified intracellular enzyme(s) responsible for drug metabolism of the compounds synthesized using SMART linker technology platform.
- Compared the data from the three systems and present the results.

Enhanced cancer radiation therapy with cell penetrating peptide modified gold nanoparticles
- Synthesized cell penetrating peptide modified gold nanoparticles.
- Detected cellular and genetic damage in cancer cells using bright field imaging, MTT, DNA damage, reactive oxygen species and immunofluorescence.

Nanoparticle enhanced anti-metastatic treatment of cancer with ionizing radiation
- Enhanced the anti-metastatic effect of ionizing X-ray radiation.

Nanocellulose hydrogel as 3D scaffold for tissue engineering
- Generated single cell cluster array.
- Detected 3D cluster migration speed in different thickness of alginate gel.
- Researched 3D cluster model in drug delivery system.

Single cell patterning for high throughput sub-cellular toxicity assay
- Generated single cell array.
- Obtained simultaneously cell responses at population level, single cell level and sub-cellular level at high throughput.
- Determined the expressions of proteins associated with cell migration and invasion, and production of reactive oxygen species (ROS) using two image processing software written in Python and MATLAB.

Self-Etching of metal–organic framework templates during polydopamine coating
- Researched about synthesis of micro and nanostructure functional materials.
- Designed, synthesized, and evaluated nanomaterials for various medical applications, including self-assembled chemistries and nanostructured materials.

3D microtissue personalization of treatment decisions for cancer patients
- Medical imaging technologies using unorthodox artificial intelligence for early disease diagnoses
- Novel ethical, secure and explainable artificial intelligence based digital medicines and treatments
- Point-of-care medical technologies for real world data and evidence generation to improve public health

Microtissues and microfluidic technology for multi-tissue experiments and analysis
- Microfluidic device and setup
- Microfluidic bio-activation and effect of cyclophosphamide

EXPERTISES AND TRAININGS

Laboratory: Radiation therapy, Cell culture, Biochemistry, HPLC-MS analysis, UV-Visible spectroscopy, gas chromatography mass spectrometry, Infrared camera, Soft lithography, Surface modification, Data analysis methodologies, Animal activity monitor, Gold nanomedicine.

Software: OriginPro, Microsoft Office, Photoshop, Matlab, Python, R language, C language, Machine Learning, Data Mining, Chemdraw, Image J.

Imaging: Scanning electron microscope, Transmission electron microscope, Confocal microscopy, Atomic force microscope.

Social: Strong communication ability, piano (Grade 6 Certified in China), Business analytics, Practical management skills.

Conference: MRS, BMES, AICHE, Northeast Bioengineering Conference, PSA.

Bioassays: MTT, ROS detection, Live/ dead assay, Western blot, IFA, Cell cycle analysis, Real-time PCR assay, Single cell array assay, HaloChip assay, cell coordinate assay.

PUBLICATIONS

1) **Yuting Qiu**, Ming Su. In-vitro three dimensional spheriods for personalized radiation therapy. Dissertation.
2) **Yuting Qiu**, Lili Xi, Xun Shi, Pengfei Qiu, Wenqing Zhang, Lidong Chen, James R Salvador, Jung Y Cho, Jihui Yang, Yuan-chun Chien, Sinn-wen Chen, Yinglu Tang, G Jeffrey Snyder. Charge-compensated compound defects in Ga-containing thermoelectric skutterudites, Advanced Functional Materials, 2013, 23, 3194-3203.
3) **Yuting Qiu**, Juanjuan Xing, Xiang Gao, Lili Xi, Xun Shi, Hui Gu, Lidong Chen. Electrical properties and microcosmic study on compound defects in Ga-containing thermoelectric skutterudites, Journal of Materials Chemistry A, 2014, 2, 10952-10959.
4) **Yuting Qiu**, Liyuan Ma, Xiaojie, Xun, Thomas J. Webster, Ming Su. Enhancing radiation therapy with cell penetrating peptide modified gold nanoparticles, Austin Journal of Biomedical Engineering, 2016, 3, 1033.
5) **Y. Qiu**, D. Ning, P. Zhang, S. Curly, Y. Qiao, L. Ma, M. Su, Three-dimensional micro-tissues as in vitro model for personalized radiation therapy, Analyst 2017, 142, 3605., as front cover article.
6) **Qiu YT**, Zheng LY, Ng SK, Ma LY, Su M. Nanoparticle enhanced anti-metastatic treatment of cancer with ionizing radiation, accepted by Journal of Materials Science: Materials in Medicine, 2019.
7) **Qiu, Y.T.**, Yamaguchi, S., Nagamune, T., Su, M. Photo controlled micropatterning of 3D microtissues for radiation assessment, accepted by ACS Omega, 2019.
8) **Y. Qiu**, J. Li, L. Ma, M. Su. Enhanced cell proliferation on nanocellulose hydrogel film modified substrate, submitted to Biomaterials.
9) Yinglu Tang, **Yuting Qiu**, Lili Xi, Xun Shi, Wenqing Zhang, Lidong Chen, Ssu-Ming Tseng, Sinn-wen Chen, G Jeffrey Snyder. Phase diagram of In–Co–Sb system and thermoelectric properties of In-containing skutterudites, Energy & Environmental Science, 2014, 7, 812-819.
10) J. Xia, **Y. Qiu**, X. Xun, L. Ma, J. Guan, M. Su, Single cell patterning for high throughput sub-cellular toxicity assay, Analytica Chemica Acta 2018, 1007, 26.
11) Q. Li, **Y. Qiu**, L. Ma, M. Su, Single identical cell toxicity assay on coordinately ordered patterns, Analytica Chimica Acta 2019, 1065, 56.

PATENTS

- Ming Su, Junfei Xia, **Yuting Qiu**. Single Cell Patterning for High Throughput Toxicity Assay 5200.2185-000 (INV-18025)

AWARDS AND HONORS

• Best Poster in MRS, Boston.	2018
• One article published in Analyst was selected as a front cover.	2017
• Outstanding Graduate Researcher, Department of Chemical Engineering.	2017
• Best Poster in BMES, Minnesota.	2016
• The 3rd Grade Award, College of Engineering, Jilin University.	2013
• Excellent Student, College of Chemistry, Jilin University.	2013
• The 3rd Class Freshman Scholarship, Jilin University.	2011