YUTING QIU

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OVERVIEW

- Ph.D. in Chemical Engineering.
- Master of Public Health from Harvard T.H. Chan School of Public Health.
- 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.
- Upstream experience from Bristol-Myers Squibb, MA; Leader of in-vitro group in Catabasis, Cambridge; Senior scientist of Cancer Biology and Immunology in Crown Bioscience.
- Healthcare data scientist(projects management) experiences of Boston Children Hospital/Harvard Medical School and MIT Media Lab.
- Two Healthcare VC work experiences from DT Capital Partners and Shengshan Capital.
- Give presentations at national and international conference. Authorized seven journal publications as first author.
- Able to lead external projects with minimal supervision.
- Highly self-motivated individual with ability to efficiently manage multiple tasks and good at literature reading and be able to creatively resolve different challenges.

EDUCATION

Northeastern University, Boston, MA

College of Engineering	GPA: 3.8/4.0	Aug 2018

PhD in Chemical 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

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

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

Senior Scientist

Crown Bioscience International	Jun 2020 – Now

- Cancer Biology&Immunology: R&D for PDXO/PDO and Study Director
- Design and perform experiments to uncover novel mechanisms

- Assure the scientific, administrative and regulatory aspects of the study are controlled
- Coordinating the inputs of project manager, scientific/technical staff and the QAU
- Study plan design/approval, as well as overseeing data collection, analysis and reporting
- Responsible for communication with clients during the project
- Technique support to projects and other tasks

Research Associate

Boston Children Hospital and Harvard Medical School, Boston, MA   Sep 2019-Aug 2020
- 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
- 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

Senior Scientist Intern

Bristol Myers Squibb, Boston, MA   Aug 2018 – May 2019
- In-vitro group (upstream): CR, TCA, HE(CRO); In-vivo: PDX/CDX in-vivo task, immunology therapy

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.

Established a large tumor organoid biobank using a well-characterised patient-derived xenograft library to enable drug discovery and translational research
- PDXO establishment, characterisation, and biobanking scheme.
- Established >100 PDXOs covering >10 cancer types, including bladder, breast, colorectal, gastric, liver, lung, ovarian, and pancreatic cancer, cholangiocarcinoma, etc.
- Created a unique library of matched in vitro/in vivo models with high translational power and enabling HTS, cellular/structural similarities between PDXO and the original PDX, tissue specific structural features are maintained in the 3D organoids.
- Mathematical models of authentication, characterization and contamination detection of organoids by barcode deep NGS sequencing.

Creating matched in vivo/in vitro patient-derived model pairs of PDX and PDX-derived organoids for cancer pharmacology research
- Created organoids using PDX for in vitro screening, resulting in matched pairs of in vivo/in vitro models.
- Tumor organoid and immune cell co-culture system potentiates immuno-oncology drug development.
- In-vitro liver system: application in drug metabolism and pharmacokinetics and toxicology.

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,PDX/PDXO/PDO/CDX model.
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:	Exchange student to Nanyang Technological University, Strong communication ability, Piano (Grade 6 Certified in China), Business analytics, English literature, Simultaneous interpretation certificate, Arts certificate from Berklee College of Music, Oil Painting, Water color, Pastel, Arts show in Downtown Boston, Geology certificate, Practical management skills.
Conference:	MRS, BMES, AICHE, Northeast Bioengineering Conference, AACR-NCI-EORTC International 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.
12) Xiaobo Chen, Yuting Qiu, Zhenzhen Song, Qi-Xiang Li, Sheng Guo. Authentication, characterization and contamination detection of cell lines, xenografts and organoids by barcode deep NGS sequencing, NAR Genomics and Bioinformatics 2020, 2, 3.
13) Hongjuan Zhang, Jun Zhou, **Yuting Qiu**, Jia Zheng, Limei Shang, Chunmei Li, Xuefei Yan, Rui Zhang, Mingfa Zang, Annie Xiaoyu An, Xiaoxi Xu, Shuzong Wang, Henry Li, Yujun Huang. Tumor organoid and immune cell co-culture system potentiates immuno-oncology drug development, J Immunother Cancer 2020, 10, 1136.
14) X. Xu, **Y. Qiu**, P. Wang, J. Zhou, X. Ouyang, M. Zheng, B. Mao, L. Zhang, B. Chen, J. Wang, J. Chen, W. Qian, S. Guo, Y. Huang, Q. Li. Creating Matched In vivo/In vitro Patient-Derived Model Pairs of PDX and PDX-Derived Organoids for Cancer Pharmacology Research, JoVE 2021.

PATENTS

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

AWARDS AND HONORS

- AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics, Boston, MA	2020
- MGH CSSA Volunteer Award.	2019
- Best Poster in MRS, Boston, MA.	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, Minneapolis, MN.	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