ANDREA MAZZOCCHI

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Doctoral Candidate | Wake Forest University, Wake Forest Institute for Regenerative Medicine

EDUCATION

Virginia Tech – Wake Forest University School of Biomedical Engineering and Sciences, Biomedical Engineering — Ph.D. — 2016 – Present
Winston-Salem, NC
Advisors: Shay Soker, Ph.D. & Aleksander Skardal, Ph.D.
Mike & Lucy Robbins Fellow
NIH NIBIB T32 Predoctoral Training Grant Fellow

Rochester Institute of Technology, Biomedical Engineering — B.Sc. — 2011 – 2016
Rochester, NY

RESEARCH EXPERIENCE

2016 – Present **Graduate Research Assistant/Doctoral Candidate**
Wake Forest Institute for Regenerative Medicine (WFIRM), Winston- Salem, NC
Tumor Microenvironment and Extracellular Matrix Modeling, Biomaterials Development
Laboratories of Shay Soker, Ph.D. & Aleksander Skardal, Ph.D.

2012 – 2016 **Undergraduate Research Assistant**
Department of Biomedical Engineering, Rochester Institute of Technology, Rochester, NY
Differentiation and Angiogenesis Models utilizing Ultrathin Membranes
Laboratory of Thomas Gaborski, Ph.D.

OTHER EXPERIENCE

2019 **Elpha Community Manager**, Remote
2015 **Combination Product & Drug Delivery Systems Co-op**, Johnson & Johnson, Spring House, PA
2012 – 2014 **Teaching Assistant**, Rochester Institute of Technology, Rochester, NY
Quantitative Organ System Physiology, Intro to Biomaterials, Into to BME Seminar
2013 **MRI Research & Development Co-op,** General Electric Healthcare, Florence, SC
2012 **Marketing Analyst Co-op**, General Electric Transportation, Erie, PA

AREAS OF SPECIALIZATION & SKILLS

Specializations	**Laboratory Skills**	**Analytical Skills**
Tumor Microenvironments	Primary Cell Culture	Statistical Analysis
Extracellular Matrix Modeling	2D & 3D Organoid Culture	MATLAB
Disease Modeling	ELISA and Agent-Based Assays	Python
Drug Screening	Microscopy (confocal, SEM etc)	Prism
Biomaterials & Bioprinting	Histological Staining	VisioPharm
Materials Characterization	Rheology	ImageJ

HONORS & AWARDS

2018 *Alumni Student Travel Award,* Wake Forest School of Medicine Graduate Program
2017 *Student Scientist Award*, Tissue Engineering and Regenerative Medicine International Society – Americas Conference
2017 *Alumni Student Travel Award*, Wake Forest School of Medicine Graduate Program
2017 *Top 5 Poster Finalist*, Society for Laboratory Automation and Screening Annual Meeting

2017 *Tony B. Academic Travel Award*, Society of Lab Automation and Screening Annual Meeting
2016 *RIT Biomedical Engineering Graduation Delegate*, selected by department faculty
2015 *Undergraduate Student Design & Research Award*, Biomedical Engineering Society Annual Meeting
2015 *Undergraduate Student Travel Award*, Biomedical Engineering Society Annual Meeting

MENTORSHIP

2018 *Summer Student Mentor*, Lillian E. Ekem, Yale University Undergraduate Biomedical Engineering Student, NSF Imaging and Mechanics-based Projects on Accidental Cases of Trauma (IMPACT) Research Experience for Undergraduates (REU)
2017 *Summer Student Mentor*, Darryl Kalil, Wake Forest School of Medicine Medical Student, Clinical and Translational Science Institute (CTSI) Medical Student Research Program (MSRP)

LEADERSHIP & SERVICE

VT-WF School of Biomedical Engineering and Sciences (VT-WF SBES)
2019 *Council Member*, WFU Graduate School Honor Code
2019 *Program Founder*, Wake Forest Biomedical Engineering Peer Mentorship
2018 – 2019 *President,* Biomedical Engineering Society
2018 *Coordinator,* VT-WF SBES Annual Symposium (175 guests, 10 sponsors)
2017 – 2018 *Vice President,* Biomedical Engineering Society

Wake Forest Institute for Regenerative Medicine (WFIRM)
2019 *Committee Member,* WFIRM High School Summer Student Selection
2018 – 2019 *Panel Organizer,* Regenerative Medicine Essentials Course Industry Career Perspectives

Rochester Institute of Technology
2012 – 2015 *Treasurer,* Chapter Co-Founder – Biomedical Engineering Society

Extramural
2018 – 2019 *Facilitator*, Girls Who Code Club (Malloy/Jordan Library, Winston-Salem, NC)

ADDITIONAL PROFESSIONAL ACTIVITIES

Journal Reviewer
2019 Biomedical Materials (IF: 2.9)

Continued Education
2017 - 2019 WFIRM – Regenerative Medicine Essentials Course Attendee
2018 Rice University Tissue Engineering Short Course Attendee
2018 National Institute of Health National Institute of Biomedical Imaging and Bioengineering Training Grantees Bi-Annual Meeting Attendee

PUBLICATIONS

Waits, C.M., **A. Mazzocchi**, A. Bashore, B. Dosso, K. Simms, T. DePalma, V. Weis, S. Sergeant, J. Parks, A. Skardal, and E. Rahbar. "Development of Three-Dimensional Patient-Specific Liver Constructs for Lipid Metabolism Studies." Tissue Engineering, In Review.

Mazzocchi, A., M. Devarasetty, S. Herberg, L. Miller, F. Marini, G. Kucera, W.J Petty, A. Skardal, and S. Soker. "Pleural effusion aspirate for use in 3D lung cancer modeling and chemotherapy screening."ACS Biomaterials Sciences & Engineering, March 2019. DOI: 10.1021/acsbiomaterials.8b01356

Mazzocchi, A., S. Soker, and A. Skardal. "3D Bioprinting for high-throughput screening: drug screening, disease modeling, and precision medicine." Applied Physics Reviews, Jan 2019. DOI: 10.1063/1.5056188
Featured on the cover of Applied Physics Reviews, Volume 6 Issue 1

Votanopoulos, K.I, **A. Mazzocchi**, H. Sivakumar, S. Forsythe, J. Aleman, E. Levine, and A. Skardal. "Appendiceal cancer patient-specfic tumor organoid model for predicting chemotherapy efficacy prior to initiation of treatment: a feasability study." Society of Surgical Oncology, Jan 2019. DOI: 10.1245/s10434-018-7008-2

Mazzocchi, A., M. Devarasetty, R. Huntwork, S. Soker, and A. Skardal. "Optimization of collagen type I-hyaluronan bioink for 3D bioprinted liver microenvironments." Biofabrication, Oct 2018. DOI: 10.1088/1758-5090/aae543

Mazzocchi, A., K. Votanopoulos, and A. Skardal. "Personalizing cancer treatments empirically in the laboratory: Patient-specific tumor organoids for optimizing precision medicine." Current Stem Cell Reports, June 2018. DOI: 10.1007/s40778-018-0122-z

Devarasetty M., **A. Mazzocchi**, and A. Skardal. "Application of bioengineered 3D tissue and tumor organoids in drug development and precision medicine: current and future." BioDrugs, Feb 2018. DOI: 10.1007/s40259-017-0258-x

Mazzocchi A., S. Rajan, K. Votanopoulos, A. Hall, and A. Skardal. "In vitro patient-derived 3D mesothelioma tumor organoids facilitate patient-centric therapeutic screening." Scientific Reports, Jan 2018. DOI: 10.1038/s41598-018-21200-8

Mazzocchi A., S. Soker, A. Skardal. "Biofabrication Technologies for Developing In Vitro Tumor Models". In: Soker S, Skardal A, editors. Tumor Organoids. Berlin, Germany: Springer Nature; 2017. DOI: 10.1007/978-3-319-60511-1_4

Carter, R.N., S.M. Casillo, **A. Mazzocchi**, J.P.S DesOrmeaux, J.R. Roussie, and T.R Gaborski. "Ultrathin transparent membranes for cellular barrier and co-culture models." Biofabrication, Feb 2017. DOI: 10.1088/1758-5090/aa5ba7

Mazzocchi, A., A.J. Man, J.P.S. DesOrmeaux, and T.R. Gaborski. "Porous Membranes Promote Endothelial Differentiation of Adipose-Derived Stem Cells and Perivascular Interactions." Journal of Cellular and Molecular Bioengineering, Sept 2014. DOI: 10.1007/s12195-014-0354-7

ORAL PRESENTATIONS

Mazzocchi, A., S. Rajan, K. Votanopoulos, A. Hall, and A. Skardal. "Primary Patient Mesothelioma Organoids for Genetic Mutation-Driven Experimental 3-Deazaneplanocin A Treatment." Tissue Engineering and Regenerative Medicine – Americas. Charlotte, NC. 5 Dec 2017.

Mazzocchi, A., R. Huntwork, S. Soker, and A. Skardal. "Hyaluronan-Collagen Type I Hybrid Bioink for 3D Printed Microenvironments." Tissue Engineering and Regenerative Medicine International Society - Americas. Charlotte, NC. 4 Dec 2017.

POSTER PRESENTATIONS

Mazzocchi, A., H. Sivakumar, K. Enck, J. Aleman, S. Soker, and A. Skardal. "Universal Bioink for Support of Multiple Type 2 Diabetes Specific Tissues." Wake Forest Institute for Regenerative Medicine Retreat. Pinehurst, NC. 28 Jan 2019.

Mazzocchi, A., A. Skardal, and S. Soker. "Primary Patient Lung Cancer Model for Study of Disease and Drug Response." Biomedical Engineering Society Annual Meeting. Atlanta, GA. 19 Oct 2018.

Mazzocchi, A., A. Skardal, and S. Soker. "Patient Derived Lung Cancer Model for the Study of Disease and Drug Response." NIH NIBIB Training Grantees Meeting. Bethesda, MD. 21-22 June 2018.

Mazzocchi, A., A. Skardal, and S. Soker. "Characterization of Laminin and Fibronectin Driver Matrix Remodeling Kinetics in Liver Models." SBES Symposium. Winston-Salem, NC. 9 May 2018.

Mazzocchi, A., A. Skardal, and S. Soker. "Characterization of Laminin and Fibronectin Driver Matrix Remodeling Kinetics in Liver Models." Society for Biomaterials. Atlanta, GA. 13-14 Apr 2018.

Mazzocchi, A., K. Votanopoulos, S. Soker, and A. Skardal. "Primary Patient Tumor Organoids for Personalized Drug Treatment." Tissue Engineering and Regenerative Medicine International Society – Americas. Charlotte, NC. 3 Dec 2017.

Mazzocchi, A., K. Votanopoulos, S. Soker, and A. Skardal. "Primary Patient Tumor Organoids for Personalized Drug Treatment." North Carolina Tissue Engineering and Regenerative Medicine Society. Winston-Salem, NC. 10 Nov 2017.

Mazzocchi, A., K. Votanopoulos, S. Soker, and A. Skardal. "Primary Patient Tumor Organoids for Personalized Drug Treatment." Biomedical Engineering Society Annual Meeting. Phoenix, AZ. 12 Oct 2017.

Mazzocchi, A., R. Huntwork, S. Soker, and A. Skardal. "Collagen-I Hybrid Bioink for 3D Printed Microenvironments." Biomedical Engineering Society Annual Meeting. Phoenix, AZ. 12 Oct 2017.

Mazzocchi, A., S. Soker, and A. Skardal. "3D Cancer Organoids for High Throughput Drug Screening." VT-WFU SBES Symposium. Blacksburg, VA. 9 May 2017.

Mazzocchi, A., S. Soker, and A. Skardal. "3D Cancer Organoids for High Throughput Drug Screening." Society for Laboratory Automation and Screening. Washington, DC. 5 Feb 2017.

Mazzocchi, A., M. Devarasetty, A. Skardal, and S. Soker. "Mesenchymal Stem Cell Supported Pancreatic Tumor Growth in 3D Culture." Biofabrication Conference. Winston-Salem, NC. 29 Oct 2016.

Mazzocchi, A., M. Devarasetty, A. Skardal, and S. Soker. "Mesenchymal Stem Cell Supported Pancreatic Tumor Growth in 3D Culture." North Carolina Tissue Engineering and Regenerative Medicine Society. Chapel Hill, NC. 27 Oct 2016. Biofabrication Conference. Winston-Salem, NC. 29 Oct 2016.

Mazzocchi, A., S.M. Casillo, R.N. Carter, and T.R. Gaborski. "Fabrication and Characterization of Ultrathin Transparent Glass Membranes for Cell Culture." Biomedical Engineering Society Annual Meeting. Tampa, FL. 9 Oct 2015.

Mazzocchi, A., S.M. Casillo, and T.R. Gaborski. "Investigation of Adult Stem Cells on Porous Membranes." Rochester Institute of Technology Undergraduate Symposium. Rochester, NY. 8 Aug 2014.