# ANDREA MAZZOCCHI

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## EDUCATION

**Virginia Tech – Wake Forest School of Biomedical Engineering and Sciences, Biomedical Engineering** — Ph.D. — 2016 – Present
Wake Forest Institute for Regenerative Medicine (WFIRM)
Winston-Salem, NC
Advisors: Shay Soker, Ph.D. & Aleksander Skardal, Ph.D.
Lucy Robbins Fellow
NIH NIBIB T32 Predoctoral Training Grant Fellow

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

## EXPERIENCE

2019 – Present **Community Manager**, Elpha, San Francisco, CA (remote)
2016 – Present **Graduate Student Researcher**, Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC
2012 – 2016 **Undergraduate Student Researcher**, Advised by Thomas Gaborski, Ph.D., Department of Biomedical Engineering, Rochester Institute of Technology, Rochester, NY
2015 **Combination Product & Drug Delivery Systems Co-op**, Janssen Pharmaceuticals, Spring House, PA
2012 – 2014 **Teaching Assistant**, Quantitative Organ System Physiology, Intro to Biomaterials, Into to BME Seminar I, Rochester Institute of Technology, Rochester, NY
2013 **MRI Research & Development Co-op**, General Electric Healthcare, Florence, SC
2012 **Marketing Analyst Co-op**, General Electric Transportation, Erie, PA

## RESEARCH INTERESTS

Extracellular matrix focused cancer disease models using 3D culture systems
Precision-medicine based assays for individualized cancer and disease treatment
Integration of *in vitro* and *in silico* models for predictive and diagnostics technologies
Quality control and consistency of model replication for high-throughput applications

## SCIENTIFIC ACHIEVEMENTS

*Fellowships*
2019 – Present Lucy Robbins Fellowship Awardee (full stipend & $1500 travel award)
2018 – Present NIH NIBIB T32 Predoctoral Training Grant Fellowship Awardee (full stipend & $800 travel award)

*Honors*
2017 Top 5 Poster Finalist – Society for Laboratory Automation and Screening Annual Meeting
2016 RIT Biomedical Engineering Graduation Delegate, selected by department faculty

*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 Tony B. Academic Travel Award – Society of Lab Automation and Screening Annual Meeting
2015 Undergraduate Student Design and Research Award – Biomedical Engineering Society Annual Meeting 2015
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 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
2018 Co-Founder – Graduate Student Writing Club

*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*
2018 Rice University Tissue Engineering Short Course Attendee
2018 NIH NIBIB Training Grantees Bi-Annual Meeting Attendee
2017 WFIRM – Regenerative Medicine Essentials Course Attendee

## PUBLICATIONS

**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.