

AUSTIN PASSARO

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EDUCATION

University of Georgia, Athens, GA

Enrolled in Neuroscience Ph.D. program, Biomedical Health and Sciences Institute **Jan 2016–Present**

Research focus: The role of neuroinflammation in neurodegenerative diseases, especially ALS, and the potential therapeutic use of extracellular vesicles

GPA: 3.93

Virginia Polytechnic Institute and State University, Blacksburg, VA

Bachelor of Science, *summa cum laude*, Biological Sciences **2014**

Minors: Chemistry, Entomology

GPA: 3.91

RESEARCH AND WORK EXPERIENCE

Graduate Research Assistant

Jan 2016–Present

Dr. Steven Stice, University of Georgia, Athens, GA

- Research neuroinflammation, neurodegenerative diseases, and extracellular vesicles using various cell types, including but not limited to endothelial cells, neural progenitor cells, neurons, astrocytes, microglia, muscle cells, and endothelial cells

- Utilize and develop various assays and analytical techniques, including but not limited to microfluidics, immunocytochemistry, confocal microscopy, ELISA, programming (Python, MATLAB, Java), and statistical analysis

- Perform *in vivo* studies involving surgical techniques and behavioral tests (i.e. rotarod, beam walk)

Laboratory Manager/Coordinator

2014–2015

ArunA Biomedical, Inc., Athens, GA

- Cultured and derived neural stem cells as well as related cell types following GLP-like procedures on an industrial scale

- Performed various assays and experiments for quality assurance and contract research projects

- Headed logistics and purchasing duties and maintained laboratory equipment and inventory

Undergraduate Research Assistant

2014

Dr. Zhiyong Cheng - Molecular Metabolism Laboratory, Virginia Tech, Blacksburg, VA

- Researched metabolic disorders with a focus on diabetes, while learning various lab procedures, including PCR and western blotting

Undergraduate Teaching Assistant

2014

Principles of Biology - Virginia Tech, Blacksburg, VA

- Held weekly office hours and review sessions for students and graded daily assignments

PUBLICATIONS

Austin Passaro, Onur Aydin, Taher Saif, Steven Stice (2020). *Objective index scoring of neural activity via dimensionality reduction*. Manuscript in preparation, Authors and Title subject to change.

Samantha Spellicy, Chenfei Hu, **Austin Payne Passaro**, Mikhail E. Kandel, Jae-Kyung Lee, Gabriel Popescu, Steve Stice (2020). *Label-free spatial light interference microscopy reveals extracellular vesicle uptake, transport, and activity in recipient cells*. Manuscript in submission at **PNAS**.

Onur Aydin, **Austin P. Passaro**, Mohamed Elhebeary, Gelson J. Pagan-Diaz, Anthony Fan, Sittinon Nuethong, Rashid Bashir, Steven L. Stice, and M. Taher A. Saif (2020). *Development of 3D neuromuscular bioactuators*. **APL Bioengineering** 4, 016107. <https://doi.org/10.1063/1.5134477>

Austin Passaro*, Min Kyoung Sun*, Charles-Francois Latchoumane, Samantha Edwards Spellicy, Michael Bowler, Morgan Geoden, Philip V. Holmes, Steven L. Stice, Lohitash Karumbaiah (2019). *Extracellular vesicles mediate neuroprotection and functional recovery after traumatic brain injury*. **Journal of Neurotrauma**. <http://doi.org/10.1089/neu.2019.6443>. *Equal contribution

L Liu, P Zou, L Zheng, L E Linarelli, S Amarell, **A Passaro**, D Liu & Z Cheng (2015). *Tamoxifen reduces fat mass by boosting reactive oxygen species*. **Cell Death & Disease** **6**, e1586.

ABSTRACTS, ORAL PRESENTATIONS, AND POSTERS

ORAL PRESENTATIONS

Objective index scoring of neural activity in microphysiological systems **Jul 2019**
Abstract and oral presentation given at the EBICS Annual Retreat, Lanier Islands, GA

Functional outcomes of developmental neuron-muscle crosstalk are revealed by a novel 3D neuromuscular co-culture platform **Apr 2018**
Abstract and oral presentation given at the Regenerative Bioscience Center (RBC) Fellows Symposium, Athens, GA

POSTER PRESENTATIONS

Neural stem cell-derived extracellular vesicles provide neuroprotection via reduction of microglial-mediated inflammation **Mar 2020**
Abstract and poster accepted for the Regenerative Medicine Workshop, Isle of Palms, SC [later canceled]

Objective index scoring of neural activity in microphysiological systems **Aug 2019**
Abstract and poster presented at the Cell Manufacturing and Technologies (CMaT) Annual Retreat, Athens, GA

Dimensionality reduction of multielectrode array data reveals important analytical parameters and overall effect score to determine treatment effects **Mar 2019**
Abstract and poster presented at the Regenerative Medicine Workshop, Isle of Palms, SC

Functional outcomes of crosstalk between neural networks and engineered muscle tissues in a novel microfabricated three-dimensional co-culture platform **Nov 2018**
Abstract and poster presented at the Society for Neuroscience (SfN) Annual Meeting, San Diego, CA

Microelectrode array analysis of crosstalk between muscle cells and neural networks reveals enhanced activity and accelerated neural network formation **July 2018**
Abstract and poster presented at the EBICS Annual Retreat and Multicellular Engineered Living Systems (M-CELS) Workshop, St. Charles, IL

Functional outcomes of crosstalk between neural networks and muscles during early in vitro development are revealed by a novel 3D neuromuscular co-culture platform **Apr 2018**
Abstract and poster presented at the Graduate Students and Post-docs in Science (GSPS) Annual Research Day, Athens, GA

Functional neuromuscular junction formation in a microfabricated physiologically relevant culture platform **Mar 2018**
Abstract and poster presented at the Regenerative Medicine Workshop, Charleston, SC

Neural exosomes as a potential therapeutic for regulation of angiogenesis and neurovascular dysfunction **Sep 2017**
Abstract and poster presented at the STaR Conference, Augusta, GA

Notch signaling in neurovascular maturation **Jul 2017**
Abstract and poster presented at the EBICS Annual Retreat, Pine Mountain, GA

Neural exosome-mediated enhancement of in vitro angiogenesis in a three-dimensional microfluidic culture system **Mar 2017**
Abstract and poster presented at the Regenerative Medicine Workshop, Hilton Head, SC

Aug 2016*Neurovascular interactions and co-differentiation*

Abstract and poster presented at the EBICS Annual Retreat, St. Charles, IL

MEMBERSHIPS AND LEADERSHIPNeuroscience Graduate Student Association (GSA) - *President, Former Social Chair*Regenerative Bioscience Center Graduate Student Association (RBC GSA) – *Former Social Chair*

Scientific Research & Education Network (SciREN)

Society for Neuroscience (SfN)

Graduate Research Assistants Diversifying STEM (GRADS)

American Association for the Advancement of Science (AAAS)

Phi Beta Kappa Honor Society

Phi Kappa Phi Honor Society

Phi Sigma Biological Sciences Honor Society

AWARDS AND HONORS

1st place, oral presentation - Regenerative Bioscience Center (RBC) Fellows Symposium

Apr 2018

1st place, poster presentation - Graduate Students and Post-docs in Science (GSPS) Annual Research Day

Apr 2018

2nd place, EBICS Technology Conceptualization Plan Competition

July 2018

3rd place, People's Choice, poster presentation - CMaT Annual Retreat

Aug 2019

University of Georgia Graduate School Travel Award (\$6,500)

Nov 2018**ACTIVITIES AND COMMUNITY SERVICE**

COVID-19 Design Sprint - Competition to create innovative solutions to solve challenges exacerbated by the novel coronavirus pandemic

National Science Foundation (NSF) Regional I-Corps Program

Pass-it-on Posters Co-founder - Outreach program to upcycle old academic posters for K12 classrooms

Georgia Science and Engineering Festival Judge

STEMzone outreach program - organized tailgate-style event to teach local community members about STEM and ongoing research at UGA

ASPIRE program at UGA

3 Minute Thesis (3MT) Competition

R Workshop at UGA

Deep Learning at UGA (DeLUG)