

EDUCATION

Bachelor of Science: Biological Sciences

Louisiana Tech University | 2015 – 2019

Doctor of Philosophy: Neuroscience

Tulane University | 2021- Present

GPA: 3.630

RESEARCH EXPERIENCE

NEUROIMMUNOLOGY GRADUATE RESEARCH

Tulane University, Clinical Neuroscience Research Center, Neurosurgery: Elizabeth Engler- Chiurazzi, PhD | 2021 – Present

- Exploring the impact of miR34-a expression on AD-like pathologies and cognition.
- Investigating the role of the immune system, particularly B-cells, in chronic stress, neurodegeneration, and major depression disorder.
- Promoting innovative ways to communicate and facilitate science to the wider public, to highlight the importance of scientific research and its impact on society.
- Supervised undergraduate trainees, laboratory staff, and visiting scholars.
- Measure behavioral, cellular, and molecular outputs in *in vitro* and *in vivo* models.

NEUROENDOCRINOLOGY LABORATORY TECHNICIAN

Tulane University Cell and Molecular Biology, Neuroscience: Jeffery Tasker, PhD | 2020 – 2021

- Investigated the neurocircuitry of stress and PTSD.
- Explored how glucocorticoid receptors determine the neurobiological response to stress.
- Leveraged skills in neuroimmunology experimentation which led to an authorship position on a paper published in 2022.
- Managed animal colony, inventory, and order regulation
- Supervised undergraduate trainees and monitored core facilities.

STEM CELL & REGENERATIVE MEDICINE LABORATORY TECHNICIAN

Tulane University Center for Stem Cell and Regenerative Medicine: Bruce Bunnell, PhD | 2019 – 2020

- Used human adipose derived stem cells to treat different inflammatory disease.
- Investigated the link between estrogen in chronic inflammatory disease like lipedema patients.
- *In vitro* modeling, created 3D spheroid cultures, and conducted immunological assays to assess cytokine levels, leveraging techniques including flow cytometry, WES, ddPCR, RT- PCR, and ICC

STEM CELL & TISSUE ENGINEERING UNDERGRADUATE RESEARCH

Louisiana Tech University School of Biological Sciences: Jamie Newman, PhD | 2016-2019

- Student principal investigator on the myogenic project that evaluated how stem cells biochemically and physiologically changed depending on the elasticity, topography or biochemical cues associated with adipose derived stem cells. Collaborated with Dr. Caldorera-Moore to synthesis hydrogel, observe polymer ratio manipulation, and examine the impact that microenvironment plays in stem cell development and function.
- Harness the stem cells' regenerative, immunomodulatory, and self-renewing capabilities to form a functional tissue patch.
- Supervised undergraduate trainees in laboratory techniques and science communication.

RESEARCH COORDINATOR / MEDICAL ASSISTANT

Covington Orthopedic Sports Medicine: Kevin Darr, MD | 2017

- Analyzed patient outcomes after cellular stem cell therapy for an ongoing clinical trial.
- Coordinated research and patient information for stem cell therapy.
- Improved science communication skills to the public.
- Drafted and revised grants / manuscript for publication.

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PUBLICATIONS

Jiang Z, Chen C, Weiss GL, Fu X, Stelly CE, Sweeten BL.W, Tirrell P, **Pursell IA**, Stevens CR, Fisher MO, Begley J, Harrison LM, Tasker JG Stress-Induced Glucocorticoid Desensitizes Adrenoreceptors to Gate the Neuroendocrine Response to Somatic but not Psychological Stress in Male Mice. *Cell Reports*. October 2022.

Al-Ghadban S, **Pursell IA**, Diaz ZT, Herbst KL, Bunnell BA. 3D spheroids derived from human lipedema ASCs demonstrated similar adipogenic differentiation potential and ECM remodeling to non- lipedema ASCs *in vitro*. *International Journal of Molecular Sciences: Molecular Pathology, Diagnostics, and Therapeutics*. November 2020.

Wise RM, Harrison MA, Sullivan BN, Al-Ghadban S, Aleman SJ, Vinluan AT, Monaco ER, Donato UM, **Pursell IA**, Bunnell BA. Short-term Rapamycin Preconditioning Diminishes Therapeutic Efficacy of Human Adipose-Derived Stem Cells in a Murine Model of Multiple Sclerosis. *Cells: Human Adipose Stem Cells*. September 2020.

Barnett HH, **Pursell IA***, Lee L, Perez N, Caldorera-Moore ME, Newman, JJ. Combination of Soluble Factors and Biomaterial Scaffolds Enhance Human Adipose-Derived Stromal/Stem Cell Myogenesis. *Biochemical and Biophysical Research Communications*. September 2020

***Authors contributed equally to the work**

Barnett HH, Heimbuck AM, **Pursell IA**, Hegab RA, Sawyer BJ, Newman JJ, Caldorera Moore ME. Poly (Ethylene Glycol) Hydrogel Scaffolds with Multiscale Porosity for Culture of Human Adipose Derived Stem Cells. *Journal of Biomaterials Science, Polymer Edition*. April 2019

GRANTS

2019	Graduate Research Assistantship: LaSpace Graduate Student Research Assistantship \$9,000; 5-8 / year
2019	Undergraduate Research Scholarship , LaTech: College of Engineering And Science: Center For Biomedical Engineering And Rehabilitation Science (CBERS) \$1,097; 6-12 / year
2018	Undergraduate Research Scholarship , LaTech: College of Engineering and Science: CBERS \$1,097 6-12 / year
2018	LaSpace Undergraduate Research Assistantship (LURA): LaSpace Grant Consortium \$6,000; 5-8/year
2018	Travel Grant , LaTech Sigma Xi
2018	Undergraduate Student Research Mini-Grant: LaTech: College of Applied And Natural Sciences \$450; 6 / year
2018	Travel Grant , LaTech: College of Applied and Natural Sciences
2017	Supervised Undergraduate Research Experience (SURE) Grant: Louisiana Established Program To Stimulate Competitive Research: The National Science Foundation and The Louisiana Board of Regents \$5,000
2017	Undergraduate Student Research Mini-Grant: LaTech: College of Applied and Natural Sciences \$400; 6 / year

AWARDS / HONORS

2024	Alzheimer's Association International Conference Fellowship , Alzheimer's Association
2023	Neuroscience Scholars Program Associate , Society for Neuroscience
2023	Stem Hub for Industry Networking & Exchange (S.H.I.N.E) Program , Merck & Co, Inc.,
2024	BIPOC Affirming & Mentoring Graduate and Professional Student Mentoring Program ,
2023	Tulane University: Office of Equity, Diversity, and Inclusion; Office of Multicultural Affairs
2023	Trainee Professional Development Award , Society for Neuroscience – Bright Focus
2023	Dean's Travel Fund Award , Tulane University: School of Science and Engineering
2019	2nd Place Undergraduate Poster Presentation, Louisiana Biomedical Research Network
2019	1st Place Undergraduate Poster Presentation, LaTech: College of Applied and Natural Sciences Research Day
2019	4th Place Oral Presentation, LaTech Undergraduate Research Symposium
2019	Invited Oral Presentation , University of Louisiana Academic Summit
2018	1st Place Undergraduate Poster Presentation, Louisiana Biomedical Research Network 16th Annual Meeting

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- 2018 **Best Undergraduate Poster Presentation**, Louisiana Academy of Sciences
- 2018 **Invitational Poster Presentation**, University of Louisiana Academic Summit
- 2017 **1st Place** Undergraduate Presentation, Louisiana Academy of Sciences
- 2017 **3rd Place** Undergraduate Poster Presentation, LaTech Research Symposium
- 2017 **2nd Place** Undergraduate Poster Presentation, Latech: College of Applied and Natural Sciences Research Day

ABSTRACTS AND PRESENTATIONS

*indicates presenter.

2024

- Alzheimer's Association International Conference: Poster Presentation
Studying Alzheimer's-Related Neuronal Dysfunction Using a New Tool: Characterizing a Neurodegenerative Animal Model with Increased Neuronal-specific miR34
- Tulane Research, Innovation & Creativity Summit: Poster Presentation
Characterization of overexpressing neuronal-specific miR-34a animal model for neurodegeneration.
***Pursell IA**, Freitas, R, Garfinkel, L, Marcus M, Wang H, Engler-Chiurazzi, E
- Tulane Research, Innovation & Creativity Summit: Poster Presentation
Optimizing Ultrasonic Vocalization Processing in Mice
Rawlins S, **Pursell IA**, Blahusiak G, Wang H, Galazo M, Engler-Chiurazzi E
- Tulane Research, Innovation & Creativity Summit: Poster Presentation
B Lymphocytes: Players in Stress Response and Blood-Brain Barrier Integrity Modulation
Wegowski LR, **Pursell IA**, Barahona NB, Freitas RS, Engler-Chiurazzi E
- Tulane Research, Innovation & Creativity Summit: Poster Presentation
Repeat infection by Cytomegalovirus Induces Neuroinflammation and Contributes to Cognitive Dysfunction

2023

- University of Louisiana Monroe – Advanced Genetics: Guest Lecture
Impact of Neuronal MicroRNA-34a Overexpression on Microglial Dysfunction in Neurodegenerative Pathways
- Society for Neuroscience: Poster Presentation
Characterization of overexpressing neuronal-specific miR-34a animal model for neurodegeneration.
***Pursell IA**, Freitas, R, Garfinkel, L, Marcus M, Wang H, Engler-Chiurazzi, E
- Society for Neuroscience: Poster Presentation
Acute stressor exposure effects on central and systemic B lymphocyte profiles in young adult male and female mice. Marcus M, **Pursell IA**, Freitas, R, Garfinkel, L, Porretta, C, Wang H, Rawlins S, Engler-Chiurazzi, E
- Psychoneuroimmunology 2023: Poster Presentation
The effect of acute restraint or social isolation stress exposure on B and T:B lymphocyte profiles. Marcus, M, **Pursell, IA**, Porretta, C, Garfinkel, L, Freitas, R, Wang, H, Rawlins, S, Monix, S, Cousin, K, Engler-Chiurazzi, E
- Gordon Research Conference “Neuroimmune Communication in Health and Disease” Poster Presentation
Single Restraint Stress Exposure Consequences on Splenic, Circulating and Central Nervous System B Lymphocyte Profiles. **Pursell, IA**, Freitas, R, Porretta, C, Garfinkel, L, Wang, H, Marcus, M, Rawlins, S, Monix, S, Engler-Chiurazzi, E*

2022

- Society for Neuroscience: Poster Presentation
Cognitive and neuroinflammatory impacts of B lymphocyte deficiency and chronic restraint in male mice.
***Pursell IA**, McDonald K, Wang H, Freitas R, Garfinkel L, Trinh A, Engler-Chiurazzi E
- Society for Neuroscience: Poster Presentation
Remote Neuroscience Engagement with the Books & Brains-New Orleans Initiative: Year 2 Progress Update. Engler-Chiurazzi, E, Solch, R, Klar, J, Iryami, A, Plumely, Z, Sweeten, B, ***Pursell, IA**
- Society for Neuroscience: Poster Presentation
Intermittent infection via cytomegalovirus induces cognitive deficits and alters neurobiological energy metabolism in adult mice. Engler-Chiurazzi, EB*, Zvezdaryk, KJ, Wang, H, McDonald, KO, Harrison, MA, Freitas, RS, ***Pursell, IA**, Sakamuri, SSVP, Monk, CH, Katakam, PV
- Southeastern Neurodegenerative Disease Conference (SENDCon): Poster Presentation - Canceled due to hurricane.
- Tulane Neurology Scholarly Activity Fair: Poster Presentation
B Lymphocytes and Response to Psychosocial Stress. ***Pursell IA**, McDonald K, Wang H, Freitas R, Talkington G, Chastain W, Sweeten B, Stowe A, Bix G, Simpkins J, Tasker J, Engler-Chiurazzi E.

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2019

- University of Louisiana Academic Summit: Invitational Oral Presentation
Myogenic Differentiation of Adipose-Derived Stem Cells. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.
- College of Applied and Natural Sciences Research Day: Poster Presentation
Differentiation of Adipose-Derived Stem Cells on Biomimetic Hydrogels to Induce Myogenesis. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.
- Louisiana Academy of Science: Oral Presentation
Differentiation of Adipose-Derived Stem Cells on Biomimetic Hydrogels to Induce Myogenesis. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.
- Louisiana Tech University Undergraduate Research Symposium: Oral Presentation
Myogenic Differentiation of Adipose-Derived Stem Cells. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.
- Louisiana Biomedical Research Network 17th Annual Meeting: Poster Presentation
Differentiation of Adipose-Derived Stem Cells on Biomimetic Hydrogels to Induce Myogenesis. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.

2018

- Louisiana Space Consortium (LaSPACE) Annual Meeting: Poster Presentation
Differentiation of Adipose-Derived Stem Cells on Biomimetic Hydrogels to Induce Myogenesis. *Pursell IA, Barnett HH, Vogal H, Caldorera-Moore ME, Newman JJ.
- Biomedical Engineering Society Annual Meeting: Poster Presentation
Dynamic Tailorable Hydrogel Scaffolds for Tissue Regeneration Applications. Hegab RA, Barnett HH, *Pursell IA, Newman JJ, Caldorera-Moore ME.
- College of Applied and Natural Sciences Research Day: Oral Presentation
The Use of Biomimetic Hydrogels to Direct Stem Cell Differentiation for Tissue Engineering Applications. *Pursell IA, Barnett HH, Whitehead AK, Caldorera-Moore ME, Newman JJ.
- University of Louisiana Academic Summit: Invitational Poster Presentation
The Use of Biomimetic Hydrogels to Direct Stem Cell Differentiation for Tissue Engineering Applications. *Pursell IA, Barnett HH, Whitehead AK, Caldorera-Moore ME, Newman JJ.
- Louisiana Academy of Science: Poster Presentation
The Use of Biomimetic Hydrogels to Direct Stem Cell Differentiation for Tissue Engineering Applications. *Pursell IA, Barnett HH, Whitehead AK, Caldorera-Moore ME, Newman JJ.
- Louisiana Biomedical Research Network 16th Annual Meeting: Poster Presentation
Characterization of Stem Cell-Biomaterial Interactions on Tailorable Poly (ethylene glycol) Hydrogels Designed for Tissue Engineering Applications. Barnett HH, *Pursell IA, Whitehead AK, Patel N, Caldorera-Moore ME, Newman JJ.

SCIENCE COMMUNICATION / POLICY EXPERIENCE

2024 – Present	Early Career Policy Ambassador , Society for Neuroscience (SfN)
2023 – Present	Advocate , Alzheimer's Association – Louisiana Chapter
2023	Louisiana Representative at the American Association for the Advancement of Science (AAAS) Catalyzing Advocacy in Science and Engineering Workshop
2022 – Present	Graduate Representative for Community Outreach , Tulane Brain Institute
2021 – Present	Graduate Representative for Outreach , Greater New Orleans Society for Neuroscience Chapter

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OUTREACH / SERVICE

2024	"NOLA Books & Brains" by Tulane Brain Institute New Orleans Book Festival (~200) "Memory, the Brain and Neurons" by TUNA & Books and Brains for GIST (~ 20) "Memory, the Brain and Neurons" by TUNA & Books and Brains for BATS (~ 20) Neuroscience: Teach the Teachers for STEM Library Lab (~ 20)
2023	"STEMFest at the Superdome" Tulane Brain Institute (~3,200) "UnBan Book Festival at Baldwin Books" Tulane Brain Institute (~200) "Books & Brains" by Tulane Brain Institute for Boys at Tulane in Stem (BATS) (~ 20) "NOLA Books & Brains" by Tulane Brain Institute New Orleans Book Festival (~250) "My Big Beautiful Brain" by Tulane Brain Institute for Louisiana Children's Museum (~ 30) "Brain Awareness Week" by Greater New Orleans SfN for Childrens' Resource Library (~75) "Books & Brains" by Tulane Brain Institute for Girls in Stem at Tulane (GIST) (~ 20) "Books & Brains" by Tulane Brain Institute for Boys at Tulane in Stem (BATS) (~ 20)
2022	"NOLA Books & Brains" by Books and Brains for New Orleans Book Festival (~150) "Brain Awareness" by Tulane Brain Institute for Walk to End ALZ (~50) "Memory, the Brain and Neurons" by TUNA & Books and Brains for GIST (~ 20) "Memory, the Brain and Neurons" by TUNA & Books and Brains for BATS (~ 20)
2019	"Green Clinic Wellness Fair" by Green Clinic & LaTech (~250)
2018	"Louisiana Tech University Annual Wellness Fair" La Tech Student Health Center (~200)

PROFESSIONAL AFFILIATIONS

2023 – Present	Neuroscience PhD Program Student Representative , Tulane Brain Institute
2022 – Present	Member , Alzheimer's Association International Society to Advance Alzheimer's Research & Treatment (ISTAART)
2022 – Present	Neuroscience Representative , Graduate Studies Student Association
2022 – Present	Media & Professional Development Officer , Women+ in Science & Engineering (WiSE)
2021 – Present	Member , Black in Neuro