
CURRICULUM VITAE

Michelle Hedrick Theus, Ph.D.

Department of Biomedical Sciences and Pathobiology
Translational Biology, Medicine & Health, Virginia Tech
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PROFESSIONAL POSITIONS:

- 2019- **Virginia Tech**, Blacksburg, VA
Co-Director Graduate Program in Translational Biology, Medicine, and Health
- 2018- **Virginia Tech**, Blacksburg, VA
Associate Professor, Department of Biomedical Sciences & Pathobiology
Associate Professor, Faculty of Health Sciences
- 2012-2018 **Virginia Tech**, Blacksburg, VA
Assistant Professor, Department of Biomedical Sciences & Pathobiology
Assistant Professor, Faculty of Health Sciences
- 1999-2001 **Cleveland Clinic Organ Transplantation Center**, Cleveland, OH,
Histocompatibility Specialist, ASHI board certified, Allogen Laboratories
- 1998-1999 **U.T. M.D. Anderson Cancer Research Center**, Houston, TX, HLA Laboratory
Medical Technologist, ASCP and CLS board certified

EDUCATION:

- 2006-2012 **University of Miami**, The Miami Project to Cure Spinal Cord Paralysis, Miami, FL
Postdoctoral Fellow, Department of Neurosurgery: Dr. Daniel Liebl
Mechanisms regulating neurogenesis and dependence receptor-mediated cell death following Traumatic Brain Injury (TBI)
- 2001-2006 **Medical University of South Carolina (MUSC)**, Charleston, SC
Ph.D. Neuropathology and Laboratory Medicine: Dr. Ling Wei
Dissertation: *Mechanisms of neural-induced embryonic stem cell preconditioning: novel therapies to improve functional recovery after ischemic stroke.*
- 1998-1999 **University of Texas M.D. Anderson Cancer Research Center**, Houston, TX
Clinical Laboratory Scientist Training Program, MT (ASCP) Board Certification
- 1994-1998 **University of Ohio**, Athens, OH
B.S. Clinical Laboratory Sciences, Cum Laude

RESEARCH SUPPORT:

Awarded (ACTIVE):

1-R01 NS096281 Mechanisms regulating cerebral arteriogenesis and neuro-restoration.

National Institutes of Health; NINDS

Dates: 03/01/16-02/30/21; \$1.7m

Objective: This grant will investigate the mechanisms of EphA4 in Neurorestoration after Traumatic Brain Injury

Role: PI

2-R01 NS112541 Novel Cellular and Molecular Regulation of Collateral Remodeling in Ischemic stroke
National Institutes of Health; NINDS
Received 8% first submission
Dates: 06/01/19-05/31/2024; \$1.7m
Objective: This grant will investigate the mechanisms of EphA4 in pial collateral vessel remodeling
Role: PI

3-CURE EPILEPSY foundation- Vascular Injury, Gliosis and Aberrant Neurogenesis as Drivers for Post-traumatic Epilepsy. **Award# W81XWH-15-2-0069**
Dates: 6/2018-5/2021; \$2.6m
Role: Multi-PI: Theus, Sontheimer, Olsen, Robel, VandeVord

4-American Heart Association Transformative Project Award- Ischemic-induced pericyte loss and BBB fragility
Dates 6/01/2019-6/30/2022; \$300,000
Role: Co-I **Theus**; PI: John Chappell

5-Research Acceleration Program (RAP) Carilion Medical Center- Interrogating Human Serum Expression of EphA4 and Collateral Vessel Function Following Acute Ischemic Stroke
Dates 9/01/2019-8/30/2020 \$25,000
Role: Co-Is **Theus** and Biraj Patel, MD

6-VT Center for Engineered Health Seed grant- Non-invasive Focused Ultrasound (FUS) for pial Collateromodulation after Ischemic Stroke
Dates 10/01/2019-9/30/2020 \$15,000
Role: Co-Is **Theus** and Eli Vlaisavljevich

Pending:

R21 NS112990-01 - Sting-dependent type I Interferon response in traumatic brain injury
National Institutes of Health; NINDS
Pending council review
Objective: The major goals of this project are to define the role of Sting in regulating the immune response and tissue protection after brain trauma
Role: Multi-PI (**Theus/Pickrell**)

Completed:

R15 NS081623-01A-Collateral formation and remodeling after ischemic stroke.
National Institutes of Health; NINDS
Dates: 09/01/13-08/30/17; \$300,000
Objective: This grant will investigate the mechanisms regulating cerebral collaterogenesis
Role: PI

Dannon Yogurt Probiotics and the Gut Microbiome Fellowship grant- Evaluating the role of maternal gut microbiota on neuroimmune and neurobehavioral development: Implications for neurodevelopmental disorders
Danone North America
Dates 6/01/2018-6/01/2019 \$25,000 (awarded to Graduate Student Yeonwoo Lebovitz)

F31 NS095719- Eph-mediated restriction of cerebrovascular arteriogenesis.
National Institutes of Health; NINDS
Dates 3/01/2017-2/28/2019 \$141,322 (awarded to Graduate Student Ben Okyere)

Virginia Tech Center for One Health Research- Balancing the maternal microbiota-perinatal neuroimmune axis: Implications for neurodevelopmental disorders

Dates: 7/1/2017-8/30/2018; \$50,000

Objective: This grant will investigate the role of maternal microbiota on microglial and neurobehavioral development and the probiotic effects of *Lactobacillus*. Role: PI

ABB Destination Area Concept Award- Characterizing Vascular-related Biomarkers in patients with Traumatic Brain Injury

Virginia Tech Office of the Provost

Dates 6/01/2018-6/01/2019 \$20,000

VT Center for Engineered Health-Traumatic Brain Injury and Regeneration: A novel therapeutic platform for drug delivery.

Dates: 6/16-5/2017 \$5,000

Objective: Develop a nano-based delivery system to deliver EphA4 blocking peptides to the brain after TBI

Role: Co-PI (Abby Whittington, Michelle Theus, John Matson)

Junior Investigator award- *pH-Responsive Nanoprobes*: A novel therapeutic approach for brain injury.

Institute of Critical Technology and Science (ICTAS)/ Virginia Tech

Dates: 07/01/16-06/30/18; \$120,000

Objective: This grant will investigate the therapeutic benefits of a novel peptide blocker of Eph signaling conjugated to a trackable pH-responsive nanoparticle. Role: PI

Virginia Tech Center for Autism Research- The role of maternal-derived microbiota in prenatal neuro-immune and hippocampal development

Dates: 9/2016-9/2017; \$5,000

Objective: This grant will investigate the probiotic effects of the maternal microbiome on pre-natal brain and behavioral development. Role: PI

SDG 16470021-Collateral formation and remodeling after ischemic stroke.

Scientist Development Grant, American Heart Association (AHA)

Dates: 07/01/13-06/30/17; *Relinquished for R15 support*.

Objective: This grant will investigate the mechanisms cerebral regulating vascular remodeling

Role: PI

Virginia Tech College of Veterinary Medicine, Internal Research Competition (IRC)

07/01/12-06/30/13 \$20,000

A transgenic approach to analyzing cerebrovascular development and repair.

The goal of this one year internal grant proposal was to create tissue-specific knockout mice.

Role: PI

Virginia Tech College of Veterinary Medicine, Internal Research Competition (IRC)

Dates: 07/01/14-06/30/15 \$20,000

Molecular and cellular mechanism(s) regulating pial arteriole collateral remodeling in murine stroke model

Role: PI

Virginia Tech College of Veterinary Medicine, Internal Research Competition (IRC)

Molecular and cellular mechanism(s) regulating pial arteriole collateral development

Dates: 07/01/15-06/30/16 \$20,000

T32 NS007459-07- The role of ephrinB3 on neurogenesis in the adult brain

Dalton Dietrich (PI)

08/01/07-07/31/08

The goal of this study was to identify the role of ephrinB3 on the proliferation and survival of adult neural stem/progenitor cells in the subventricular zone using gene-targeted knockout mice.

Role: Post-Doctoral Trainee

F32 NS064699- Molecular mechanisms of adult neurogenesis following traumatic brain injury.

07/01/09-06/30/11

The goal of this study was to examine the role of ephrinB3 and its cognate receptors on neurogenesis in the adult brain after TBI.

Role: PI

Objective: This grant will investigate the endothelial cell-specific effects of Eph signaling on stroke recovery

Role: PI

ACTIVITIES RELATED TO DIVERSITY AND INCLUSION

STUDENT ADVISORY:

1. Ben Okyere (**IMSD scholar**), Ph.D. candidate, Biomedical Sciences Graduate Student, (VT) current Senior Scientist at SPARK therapeutics
2. Kisha Grisham (**IMSD scholar**), Ph.D. candidate, Translational Biology Medicine & Health, (VT) current Postdoctoral Associate at the NIH
3. Armand Meza, trained Fall-2014-Spring 2016. Graduate school University Wisconsin-Madison (**PREP scholar**)
4. Steve Cerna, Fall 2018-Spring 2019 (**PREP Scholar**). Current Lab Manager at UM.

COMMITTEES:

1. Search advocate committee, College of Veterinary Medicine. 2017-current
2. Curriculum committee TBMH program, Inclusion and Diversity Education Component. 2019-

AWARDS AND HONORS:

- 2017 Outstanding Mentor Award, College of Vet Med, Virginia Tech
- 2014 Virginia Tech Scholar of the week, Office of the Vice President for Research
- 2013 Professional Development Institute Program
- 2011 Michael Goldberger Research Award of Excellence, National Neurotrauma Society
- 2010 WINTR Research Award of Excellence, National Neurotrauma Society
- 2010 National Neurotrauma Symposium, Travel Grant Award, Las Vegas, Nevada
- 2008 Margaret Whelan Postdoctoral Scholarship, Medical Faculty Travel Award (UM)
- 2005 International Conference on Neural Transplantation and Repair, Travel Award, Taipei, Taiwan
- 2004 American Society for Neural Transplantation and Repair, Travel Award, Clearwater, FL
- 2005 Experimental Pathology and Laboratory Medicine Seminar, First Place Oral Competition (MUSC)
- 1999 Winner and nominated team captain, Texas State Student Bowl *Academic Competition*: Clinical Chemistry, Hematology, Blood Banking, Microbiology and Cytogenetics

SERVICE:

- 2020- TBMH graduate admissions committee, Virginia Tech
- 2019- DBSP Chalk Talk committee, internal grant review panel for Vet Med College, VT
- 2019-2020 Search committee; Cardiovascular Search, Health Sciences& Technology-FBRI, VT
- 2019- Vice Chair for the Precision Medicine Track, Center for Engineered Health, VT
- 2019- Council member for the NCA TBI symposium
- 2017-2018 Treasurer, Central Virginia Chapter of Society for Neuroscience CVCSN
- 2017-2018 Search committee; Center for Glial Biology search, FBRI, VT
- 2017- Steering committee, Regenerative Medicine-IGEP, VT
- 2017- Grad program advisory committee, BMVS, college of Vet Med, VT
- 2016-2017 Secretary, Central Virginia Chapter of Society for Neuroscience CVCSN
- 2016- Center for Engineered Health member, Targeted Delivery, VT
- 2016- Stake Holder and Design Team member, Brain and Behavior Destination Area, VT
- 2016-2017 Health Sciences Building planning committee; Cardiovascular Sciences, VT

2016-2017	Executive committee, CVM-WFIRM Center for Regenerative Medicine, VT-Wake Forest
2015-	Research Board for Internal Research Competition (IRC), CVM, VT
2016-2017	Search committee; CVM Associate Dean for Research position, VT
2016-2017	Search committee; CVM Search Advocate DBSP department Chair position, VT
2016-2017	Search committee; CVM BMVS Graduate Coordinator position, VT

AD HOC JOURNAL REVIEWER:

Experimental Neurology, Frontiers in Neuroscience, ASN, Scientific Reports, PLOS ONE, American Society of Neurochemistry, Journal of cerebral blood flow, Experimental Biology and Medicine (Maywood), International Journal of Toxicology, The American Journal of Pathology, Cellular and Molecular Neurobiology, Brain Research Bulletin, Journal of Biological Methods, Journal of Neuroscience Methods

GRANT REVIEWS:

2019 July	Rett Syndrome Research Trust
2019 Dec.	NIH Director's New Innovator award, Special Emphasis Panel 2020/05 ZRG1 MOSS-R(70), NIH
2019 Nov.	iTHRIV Pilot Studies Grant Review
2019 Oct.	SCORE Reviewer, NeuroPhysiology, Special Emphasis Panel, ZGM RCB-5 (SC), NIH, NIGM
2019 July	NIH/NIDS Reviewer, ZRG1 BDCN-L90
2019 July	SCORE Reviewer, NeuroPhysiology, Special Emphasis Panel, ZGM RCB-5 (SC), NIH, NIGMS
2015-2019	IRC Research Board, College of Veterinary Medicine, VT
2018 Oct.	SCORE Reviewer, NeuroPhysiology, Special Emphasis Panel, ZGM RCB-5 (SC), NIH, NIGMS
2016-	Mock Grant Panel Reviewer: <i>NIH K and New Investigator R01 Proposal Preparation Program</i> , Spring Semester, Virginia Tech
2016	<i>May-Wake Forest Institute of Regenerative Medicine-College of Vet Med</i> , Seed grant executive panel
2016	The University of Virginia-Virginia Tech Carilion Neuroscience Research Collaboration seed grant reviewer
2013	Carilion Clinic Research Day Abstract reviewer panel
2013	VT-GW-CNMC RFA grant review panel

GUEST AND REVIEW EDITOR

2019-Journal of Neuroscience Methods	<i>"Methodological advancements in neurodevelopment, disease and aging"</i>
2016-Stem Cells International:	Special Issue <i>"Stem Cell Fate Directed by Instructive Biomaterials"</i>
2018-Frontiers in Molecular neuroscience,	editorial board

TEACHING EXPERIENCE:

2019-	NEUR 6984, Diseases of the Nervous System, <i>Virginia Tech</i> , 2-hour facilitator, Fall
2019-	BMVS 6114, Neurogenesis in Development & Disease, <i>Virginia Tech</i> , Course Leader , Spring
2019-	BMES 2104, Introduction to Biomedical Engineering, facilitator for problem solving. Spring
2018-	BMES, Cell Engineering, 2-hour lecture, Neurogenesis in Health and Disease. Fall
2012-	Summer Veterinary Student Research Program, <i>Virginia Tech</i> , Principles of Histopathology, one-hour lecturer, every May
2016-	NEUR3354, Neuroscience Research in Practice, <i>Virginia Tech</i> , lecturer, Fall Semester
2013-2015	TBMH 5004, Translational Biology Medicine & Health, <i>Virginia Tech</i> , lecturer for: Gateway Course, Fall Semester; IID TBMH 5054 Spring 2-hour Lecturer
2012&15	GRAD 5134, Regenerative Medicine Interdisciplinary Graduate Education (RM-IGEP) 2-hour Lecturer. Spring
2012-2017	Department of Biomedical Sciences and Pathobiology, <i>Virginia Tech</i> , Co-Instructor-Medical Physiology, BMVS/BMES 4064, Fall
2009-2011	Department of Neuroscience Graduate Studies, <i>University of Miami</i> Instructor-Neuroscience II, NEU662 Fall Semester: Adult Neurogenesis Instructor-Neuroscience II, NEU650 Fall Semester: Modeling CNS Injury and Repair
1996-1998	Department of Biological Sciences, <i>University of Ohio</i>

Undergraduate Teaching Assistant- Human Anatomy and Histology Laboratory

TRAINEES:

Virginia Tech (PAST):

Graduate:

1. Yeonwoo Lebovitz, PhD candidate, Translational Biology Medicine & Health, (VT), Health Policy Associate, NIH
2. Amanda Hazy, DVM/PhD candidate, Biomedical Sciences Graduate Student, (VT) DVM student, VT
3. Ben Okyere (**IMSD scholar**), Ph.D. candidate, Biomedical Sciences Graduate Student, (VT) current Senior Scientist at SPARK therapeutics
4. Kisha Grisham (**IMSD scholar**), Ph.D. candidate, Translational Biology Medicine & Health, (VT) current Postdoctoral Associate at the NIH
5. Thomas Brickler, Ph.D. Biomedical Sciences Graduate, Spring 2017; Current PostDoctoral Fellow Stanford University; Dr. Sundari Chetty.
6. Kavvya Giridhar, Ph.D. candidate, Biomedical Sciences Graduate Student, (VT) 2012-2015

Summer DVM students:

1. Yiannis Sotiropoulos, Veterinary summer student program, (VT) 2019
2. Andrea Oliver, Veterinary summer student program, (VT) 2018
3. Melissa Lopez, Veterinary summer student program, (VT) 2016
4. Christopher Cow, Veterinary summer student program, (VT) 2015
5. Vincent Michels, Veterinary summer student program, (VT) 2014
6. Laura Inostroza Caceres, Veterinary student research exchange program, Chile (VT) 2013
7. Jordan Adair, Veterinary summer student program, (VT) 2013
8. Sarah Repsher, Veterinary summer student program, (VT) 2012

Undergraduate Students:

1. Nick Geroux, trained Fall 2013- Spring 2014, Graduate 2014, Environmental Policy & Science Communications Associate at US Environmental Protection Agency (EPA)
2. Daniel Garbus, trained Fall 2014- Spring 2015, Graduate 2015, Engineering Intern, K2M Health, Complex Spine Innovations
3. Colin Bittner, trained Fall 2013- Spring 2015, Graduate 2015, Graduate school for Chemical Engineering, Massachusetts Institute of Technology, (MIT)
4. Armand Meza, trained Fall-2014-Spring 2016, Graduate 2016, Graduate school University Wisconsin-Madison (**PREP scholar**)
5. Andrew Ankowitz, trained Fall 2013-Spring 2015, 2016 Graduate, Medical School currently applying
6. Shannon Mann, trained Spring 2015- Spring 2016, Graduate 2016, Graduate School at Virginia Tech, IPS cell clinical lab Sloan Kettering, research technician
7. Josiah Bumgarden, trained Spring 2015-Spring 2016, Graduate 2016, Honeywell, Chemical Engineering Career Rotational Program
8. Miranda Creasy, trained Fall 2014-Fall 2015, Graduate 2016, Current Carilion Medical student
9. Robert Bielitz, undergraduate trainee, Summer 2015-Fall 2016, Current VT student
10. Raven Brinkley, trained Fall 2015 only, Current VT student
11. Johnathan Brabender, undergraduate trainee, Spring 2016-Spring 2017 graduate.
12. Francesca Luhn-Hernandez, trained undergraduate trainee, Fall 2016
13. Laura Bochicchio, Undergraduate trainee, Fall 2016-Spring 2018, Current grad student TBMH
14. Morgan Villa, Past undergraduate, Fall 2016-Fall 2017
15. Mathew Byerly, Summer 2017-Summer 2018, Current Med school applicant
16. Christian Smith, Graduate 2019, since Summer 2017
17. Madisen Lee, Graduate 2019, since Summer 2017
18. Colin Kelly, Current research assistant Theus Lab 2019, Undergrad since Spring 2018
19. Collin Tanchanco Ocampo, Current Trainee, past trainee, Fall 2018-2019. ***Robert H. Jones Biology Undergraduate Excellence Award, 2018-2019**
20. Cameron Cashwell, Graduate 2019, past trainee, Fall 2017-Spring 2019.

Virginia Tech (CURRENT):

Postdoctoral Associates:

1. Elizabeth Kowalski, since 2017
2. Kristobal Basso, since 2018

Graduates:

1. Alison Cash, DVM/PhD candidate, since 2017
2. Alexandra Kaloss, DVM/PhD candidate, since 2019
3. Jing Ju, PhD candidate, since 2019

Undergraduates:

1. Rachael Ward, Current trainee Spring 2018-2019 ***VT-Fralin undergraduate research fellowship award 2018-2019**, VT School of Neuroscience
2. Sarah Bryant, Current trainee, since Fall 2018, VT School of Neuroscience
3. Gabe Coleman, Current trainee, since Fall 2018 ***VT SURF program, 2019**, VT School of Neuroscience
4. Katrina Knapik, Current trainee, since Fall 2019, VT School of Neuroscience

STUDENT ADVISORY COMMITTEES:

Current:

Jessica Boni, Ph.D. candidate (Advisor, Michelle Olsen)
David Mcquire, Ph.D. candidate (Advisor, John Chappell)
Mariya Tsyglakova, Ph.D. candidate (Advisor, Georgia Hodes)
Xiaoran Wei, Ph.D. candidate (Advisor: Hehuang 'David' Xie)

Past:

Miao Chen, Ph.D. (Advisor, Jia He)
Sidney Vaughn, Ph.D. (Advisor, Greg Valdez)
Angela Ives, DVM/Ph.D. (Currently in DVM School)
Kevin Pirdham, Ph.D. (Currently Postdoctoral fellow at FBRI)
Christina Lee, Ph. D. (Currently Postdoctoral fellow at Stanford University)

INVITED SPEAKER:

Synapse Brain injury Symposium, VT, 4/2019
School of Neuroscience Faculty Forum, VA, 3/2018
Devlp, Translational Neuroscience Center, Roanoke, VA, 10/2017
Research Live, VTCRI, Roanoke, VA 1/2017
Central Virginia Chapter of Society for Neuroscience (CVCSN), Charlottesville, VA 3/2016
International 5th Glial conference, Roanoke VA, 10/2016
Featured on Pulse of the Planet, a radio series providing two-minute sound portraits of Planet Earth, nature, culture, and science worldwide, 2/2016
Montgomery county Rotary Club #8560, Blacksburg, VA. August 2016
Pfizer Research Team, Boston, MA, 2/2016
Eli Lilly, Washington, DC, 12/2015
VTCRI lab seminar series, Roanoke, VA, 5/2014
Regenerative Medicine IGEP retreat, Mountain Lake, March 2014
Department of Biomedical Science and Pathobiology, Virginia Tech, 2013
Research Live, VTCRI, Roanoke, VA 10/2012
Department of Neurosurgery, University of Miami, 2010
Department of Neurosurgery, University of Miami, 2008
Department of Biomedical Sciences, University of Ohio, 2006
Department of Microbiology and Clinical Sciences, University of Ohio, 2000

HONORARY AND PROFESSIONAL SOCIETIES:

Central Virginia Chapter of the Society for Neuroscience, 2012
National Neurotrauma Society, 2013
American Association for the Advancement of Science, 2007
Society for Neuroscience, 2003
American Society of Histocompatibility and Immunogenetics (ASHI), 2000
American Society of Clinical Laboratory Science (ASCLS), 1999
American Society of Clinical Pathologists (ASCP), 1999
Tri-Beta, Biological Honor Society, Ohio University, 1997

BOARD CERTIFICATIONS:

Histocompatibility Technical Specialist (American Society of Histocompatibility; Immunogenetics), 2000
Medical Technologist (American Society of Clinical Pathologist) (ASCP), 1999
Clinical Laboratory Scientist (National Crediting Agency), 1999

PUBLICATIONS AND CONFERENCES:

A. REFEREED ORIGINAL ARTICLES IN JOURNALS: (*corresponding author)

1. Okyere B, Mills T, Kowalski EA, Wang X, Chen M, Chen Ji, Hazy A, Qian Y, Wang X, Matson J and **Theus MH***. EphA4/Tie2 crosstalk regulates leptomeningeal collateral remodeling following ischemic stroke. Journal of Clinical Investigation. 2020. Jan. 21. PMID: 31689239; Impact Factor: 12.282
2. Lebovitz Y and **Theus MH***. Molecular phenotyping and genomic characterization of a novel neuroactive bacterium strain, *Lactobacillus murinus* HU-1. Frontiers in Pharmacology 2019 Oct 4;10: 1162. PMID: 31636567; Impact Factor: 4.4
3. Sun Z, Xu X, He J, Murray A, Sun M, Wei X, Wang X, McCoig E, Xie E, Jiang Xi, Li Liwu, Zhu J, Chen J, Morozo A, Pickrell AM, **Theus MH** and Xie H. EGR1 recruits TET1 to shape the brain methylome during development and upon neuronal activity. Nature Communications. 2Aug 2019: 10, 3892.PMCID: PMC671579; Impact Factor: 11.88
4. Kowalski EA, Cheng J, Qian Y, Wang X, Chen M, Wang X, Hazy A, Zhou M, Byerly M, Pickrell AM, Matson J, Allen IC and **Theus MH***. Peripheral loss of EphA4 ameliorates TBI-induced neuroinflammation and tissue damage. Journal of Neuroinflammation. 2019 Nov. 11;16(1):210. PMID: 31711546; Impact Factor: 5.2
5. Lebovitz Y, Kowalski, EA, Wang X, Mills W, Kelly C, Lee Madison, McDonald V, Ward R, Creasey M, Hazy A, Hrubec T and **Theus MH***. *Lactobacillus* rescues postnatal neurobehavioral and microglial dysfunction in a model of maternal microbiome dysbiosis. Brain, Behavior & Immunity. 2019 Oct; 81: 617-629. PMID: 31351186; Impact Factor: 6.3
6. Hazy A, Bochicchio L, Oliver A, Xie E, Geng S, Brickler T, Xie H, Li L, Allen IC and **Theus MH***. Divergent age-dependent peripheral immune transcriptomic profile following traumatic brain injury. Scientific Reports. 2019 June 12; 9(1):8564. PMID: 31189983; Impact Factor: 4.1
7. Brickler T, Hazy A, Correa F, Dai C, Kowalski E, Dickerson R, Chen J, Wang X, Morton P, Whittington A, Ahmed A and **Theus MH***. Angiopoietin/Tie2 axis regulates the age-at-injury cerebrovascular response to traumatic brain injury. Journal of Neuroscience. 2018 Nov 7; 38(45):9618-9634. PMID: 30242049.

8. Lebovitz Y, Ringel-Scaia VM, Allen IC and **Theus MH**^{*}. Emerging developments in microbiome and microglia research: Implications for Neurodevelopmental disorders. Frontiers in Immunology. 2018, Sep 3;9: 1993. PMID: 30233586.
9. **Theus MH**^{*}, Brickler T, Meza A, Coutermarsh-Ott S, Hazy A, Gris D and Irving Allen^{*}. Loss of NLRX1 exacerbates neural tissue damage and NF- κ B signaling following brain injury. Journal of Immunology. 2017 Nov 15;199(10)3547-3558. PMID: 28993512. ^{*}Co-corresponding author
10. Okyere B, Creasey M, Lebovitz Y and **Theus MH**^{*}. Temporal remodeling of pial collaterals and functional deficits in a murine model of ischemic stroke. J Neuroscience Methods. 2017 Sept; 293:86-96. PMID: 28935424.
11. Greer K, Chen J, Brickler T, Gourdie R, **Theus MH**^{*}. Modulation of gap junction-associated Cx43 in neural stem/progenitor cells following traumatic brain injury. Brain Res Bull. 2017 June; 23; 134-38-46. PMID: 28648814
12. **Theus MH**, Sparks J, Liao X, Ren J and Luo X. All-Trans-Retinoic Acid augments Neuroinflammation and Neurodegeneration in Lupus-Prone MRL/lpr mice. Journal of Histochemistry and Cytochemistry. 2017 Feb; 65(2), PMID: 27856824.
13. Powell C, Foster J, Okyere B, **Theus MH** and Matson J. H₂S Small Molecule and Polymeric Donors with Benign Byproducts. Journal of American Chemical Society. 2016 Oct.; 138(41), 13477-13480. PMID: 27715026.
14. Okyere B, Giridhar K, Hazy A, Chen M, Keimig D, Bielitz RC, Xie H, He JQ, Huckle WR, **Theus MH**^{*}. Endothelial-specific EphA4 negatively regulates native pial collateral formation and re-perfusion following hindlimb ischemia. PloS One. 2016 July; 11(7):e0159930. PMCID: PMC4965112.
15. Brickler T, Gresham K, Meza A, Coutermarsh-Ott S, Williams TM, Rothschild DE, Allen IC, **Theus MH**^{*}. Non-essential role for the NLRP1 inflammasome complex in a murine model of traumatic brain injury. Mediators of Inflammation. 2016 Apr. PMCID: PMC4854993.
16. Dixon K, **Theus MH**, Mier J and Liebl DJ. Endogenous neural stem/progenitor cells stabilize the cortical microenvironment following traumatic brain injury. Journal of Neurotrauma; 2015 June; 1;32 (11):753-64. PMCID: PMC4449704.
17. **Theus MH**, Ricard J, Glass SJ, Garcia L and Liebl DJ. EphrinB3 blocks EphB3 dependence receptor functions to prevent cell death following TBI. Cell Death and Disease; 2014 May; 8(5):e1207. PMCID: PMC4047907.
18. Baumann G, Travieso L, Liebl DJ and **Theus MH**^{*}. Pronounced hypoxia in the subventricular zone following traumatic brain injury and the neural stem/progenitor cell response. Experimental Biology and Medicine (Maywood). 2013 July; 238(7):830-41. PMID: 23828590.
19. Morton P, Dellarole A, **Theus MH**, Berge S, and Bethea JR. Activation of NF- κ B in Schwann Cells is Dispensable for Myelination in vivo. J. Neuroscience. 2013 June; 33(24): 9932-6. PMCID: PMC3682379.
20. **Theus MH**, Ricard J and Liebl DJ. Reproducible expansion of mouse neural stem/progenitor cells in adherent cultures derived from the adult subventricular zone. Current Protocols in Stem Cell Biology. 2012 March; Chapter 2: Unit 2D.8. PMID: 22415840.
21. Zhuang Z, Yang B, **Theus MH**, Sick J, Bethea JR, Sick T and Liebl DJ. EphrinBs regulate D-serine synthesis and release in astrocytes. J. Neuroscience. 2010 Nov; 30(47): 15-24. PMCID: PMC3073557.

22. **Theus MH**, Ricard J, Bethea JR and Liebl DJ. EphB3 Limits the Expansion of Neural Progenitor Cells in the SVZ by Regulating p53 During Homeostasis and Following Traumatic Brain Injury; Stem Cells. 2010 July; 28(7): 1231-1242. PMCID: PMC2967180.
23. Valle K, **Theus MH**, Bethea JR, Liebl DJ, Ricard J. Neural progenitor cell proliferation is inhibited by EphB3 in the developing subventricular zone. Int J Dev Neurosci. 2010 Feb; 29(1):9-14. PMCID: PMC30004986.
24. Lang H, Schulte BA, Goddard JC, **Hedrick (maiden name) M**, Schulte JB, Wei L and Schmiedt RA. Transplantation of mouse embryonic stem cells into the cochlea of an auditory-neuropathy animal model: effects of timing after injury. J Assoc Res Otolaryngol. 2008 Jun; 9(2):225-40.
25. **Theus MH**, Cui L, Wei L and Yu SP. Hypoxic preconditioning of embryonic stem cells as a strategy of promoting cell survival and functional benefits after transplantation into the ischemic rat brain. Experimental Neurology 2008 April; 210(2):656-70.
26. **Theus MH**, Wei L, Francis K and Yu SP. Critical roles of src family tyrosine kinases in neuronal differentiation of cultured embryonic stem cells. Exp Cell Res. 2006 Oct 1; 312(16):3096-107.
27. Li Z, **Theus MH**, Wei L. Role of ERK 1/2 signaling in neuronal differentiation of cultured embryonic stem cells. Dev Growth Differ. 2006 Oct; 48(8):513-23.
28. Wei L, Keogh C, Whitaker R, **Theus MH**, and Yu SP. Angiogenesis and Transplantation of Embryonic Stem Cells as Potential Treatments of Cerebral Ischemic Stroke. Pathophysiology 2005 Jul; 12(1):47-62.

B. BOOK CHAPTERS:

1. Brickler T, Morton P, Hazy A and **Theus MH**. "Age-dependent responses following traumatic brain injury". Traumatic Brain Injury. IntechOpen, Dec. 20th, 2017. DOI: 10.5772/inechopen.71344. 2017.

C. ABSTRACTS AT NATIONAL AND INTERNATIONAL MEETINGS:

1. Kowalski E, Chen J, Qian Y, Wang W, Hazy A, Whittington A, Matson J, **Theus MH**. EphA4 is a novel mediator of the pro-inflammatory response following traumatic brain injury. National Capital TBI symposium. Washington, DC. March 2019.
2. Cash A, Chen J, Hazy A, Kowalski E, Pickrell A, Wang X and **Theus MH**. Endothelial cell-specific Eph signaling: A novel mediator of blood brain barrier disruption following traumatic brain injury. National Capital TBI symposium. Washington, DC. March 2019. ****3rd Place Poster Presentation**.
3. Chen J, Kowalski E, Qian Y, Wang W, Hazy A, Whittington A, Matson J, **Theus MH**. The EphA4 antagonists, VTM-EEKK and KYL, are novel therapeutic peptides that reduce injury severity following brain trauma. Central Virginia Chapter of Society for Neuroscience Annual Meeting. Richmond, VA. March 2018. *****3rd Place Poster Presentation**.
4. Lebovitz Y, McDonald V, Hrubec T, and **Theus MH**. Balancing the maternal microbiota-perinatal neuroimmune axis: Implications for neurodevelopmental disorders. 58th Annual Teratology Society Meeting. Birth Defects Res. 2018;110(9):788. (May 2018) *****James C. Bradford Memorial Poster Award**.

5. Háy A, Kowalski E, Boichicchio L, **Theus MH**. A Pro-Inflammatory Role for Peripheral Immune-Specific EphA4 Receptor following Traumatic Brain Injury. Central Virginia Chapter of the Society for Neuroscience Conference, Virginia Commonwealth University, Richmond, VA, March, 2018.
6. Greer K, Cash A, Wang X, **Theus MH**. The role of adult hippocampal neurogenesis in learning and memory outcomes after repetitive mild traumatic brain injury in mice [abstract]. International Society for Stem Cell Research; 2018 June 20-23; Melbourne, Australia: ISSCR in-meeting application; 2018. Abstract nr 439.
7. Greer K, Smith C, Wang X, **Theus MH**. (2018) Discerning the role of neurogenesis in cognitive deficits following repetitive mild traumatic brain injury. Central Virginia Chapter, Society for Neuroscience. Richmond, VA. March 2018.
8. Lebovitz Y, Creasey M, Lee M, Kelly C, Ward R, and **Theus MH**. Developmental influence of maternal microbiome dysbiosis on neurobehavioral outcomes. Central Virginia Chapter of Society for Neuroscience. Richmond, VA, March 2018.
9. Fisher C, Lebovitz Y, McDonald V, Hrubec T, **Theus MH**. Impact of Antibiotic Use in Pregnancy and Subsequent Gastrointestinal Flora Disruption on Behaviors in Mice Offspring. The Thirteenth Annual Via Research Recognition Day, Edward Via College of Osteopathic Medicine, Blacksburg, VA, February, 2018. *****First Place Poster Competition**
10. Cash A, Chen J, Hazy A, Kowalski E, Pickrell A, Wang X, and **Theus MH**. Endothelial cell ablation of EphA4 ameliorates BBB disruption, cortical damage and functional deficits following TBI. 2nd National Colloquium for Combined DVM/PhD Biomedical Scientists, Texas A&M College of Veterinary and Biomedical Sciences, College Station, TX, August 2018.
11. Okyere, B. and **Theus, MH**. EphA4 limits the endothelial cell-specific response during pial collateral remodeling post-ischemic stroke. The Central Virginia Chapter of the Society for Neuroscience, Richmond, VA. March 2018. *****First Place Poster Competition**
12. Hazy A, Brickler T, Okyere B and **Theus MH**. Interrogating the role of peripheral-derived hematopoietic cells in tissue homeostasis following brain trauma. American Society of Neural Transplantation and Repair, Clearwater FL, April, 2017.
13. Okyere B, Hazy A, Creasey M., Brickler T., Wang X. and **Theus MH**. Mechanisms regulating collateral remodeling after ischemic stroke. American Society of Neural Transplantation and Repair, Clearwater FL, April, 2017.
14. Gresham K, Brickler T, Chen J, Gourdie R and **Theus MH**. Investigating a role for Connexin 43 in hippocampal neurogenesis following moderate traumatic brain injury. American Society of Neural Transplantation and Repair, Clearwater FL, April, 2017.
15. Lebovitz Y, Brabender J and **Theus MH**. The role of maternal gut microbiome in perinatal neurodevelopment: Implications for neurodevelopmental disorders. American Society of Neural Transplantation and Repair, Clearwater FL, April, 2017.
16. Hazy A, Brickler T, Okyere B and **Theus MH**. Interrogating the role of peripheral-derived hematopoietic cells in tissue homeostasis following brain trauma. Central Virginia Chapter for Society for Neuroscience, Roanoke, VA, March, 2017.
17. Okyere B, Hazy A, Creasey M., Brickler T., Wang X. and **Theus MH**. Mechanisms regulating collateral remodeling after ischemic stroke. Central Virginia Chapter for Society for Neuroscience, Roanoke, VA, March, 2017.

18. Lebovitz Y, Brabender J and **Theus MH**. The role of maternal gut microbiome in perinatal neurodevelopment: Implications for neurodevelopmental disorders. Central Virginia Chapter for Society for Neuroscience, Roanoke, VA, March, 2017.
19. Chen J, Quian Y, Stevenson A, Bielitz R, Creasey M, Whittington A, Matson J and **Theus M**. Construction of a pH-responsive EphA4 peptide antagonist: Novel Therapeutics for Traumatic brain injury. International Precision Neuroscience, Roanoke, VA, October 2016.
20. Coutermarsh-Ott, S*, Armand L. Meza*, Thomas Brickler*, Angela M. Ives, Andrea Bertke, Denis Gris, **Theus MH**# and Irving C. Allen#. NLRX1 Attenuates Damage Following Traumatic Brain Injury through Negatively Regulating NF- κ B Signaling. Poster presentation at Immunology 2016, the Annual Meeting of the American Association of Immunologist. Seattle, WA, May 13 – 17, 2016. * Authors Contributed Equally; # Co-Corresponding Authors.
21. Okyere, B., Wang, X., and **Theus, MH**. May 2016. EphA4 is a novel negative regulator of collateral formation and remodeling following stroke. Abstract for poster presentation, Mid-Atlantic PREP/IMSD Research Symposium (MAPRS), Richmond, VA. ****First Place poster competition**
22. Okyere, B., Wang, X., and **Theus MH**. November 2015. EphA4 negatively regulates vascular remodeling after ischemic stroke in a middle cerebral occlusion mouse model. Abstract for poster presentation, Annual Biomedical Research Conference for Minority Students (ABRCMS), Seattle, WA.
23. Armand Meza, Thomas Brickler, Sheryl Couter-Marsh, **Theus MH*** and Irving Allen*. Elucidating the contribution of negative regulatory NLRs in traumatic brain injury. *Annual SACNAS National Conference*, Washington, DC. October, 2015. *Co-Corresponding author
24. Ben Okyere, Gisela Baumann, Lissette Garcia, Daniel Liebl and **Theus MH**. Pronounced hypoxia in the subventricular zone Following Traumatic Brain Injury and the neural stem/progenitor cell response. Symposium of the Central Virginia Chapter of the Society for Neuroscience, March, 2015.
25. Thomas R. Brickler, Armand Meza, Daniel Rothschild, Tere M. Williams, Irving C. Allen and **Theus MH**. Non-essential role for the NLRP1 inflammasome complex Following Traumatic Brain Injury. Symposium of the Central Virginia Chapter of the Society for Neuroscience, March, 2015.
26. **Theus MH**, Stephanie Glass, Lissette Garcia and Daniel Liebl. EphrinB3 blocks EphB3 Dependence receptor function to prevent cell death Following Traumatic Brain Injury. Symposium of the Central Virginia Chapter of the Society for Neuroscience, March, 2015.
27. Ben Okyere, Xia Wang and **Theus MH**. EphA4 negatively regulates collateralogenesis after Ischemic Stroke. American Society of Neural Transplantation and Repair, April, 2015.
28. Thomas Brickler*, Xia Wang and **Theus MH**. Arteriogenesis as a therapeutic target for traumatic brain injury. American Society of Neural Transplantation and Repair, April, 2015. ***Travel Awardee**
29. Armand Meza*, Thomas Brickler, Sheryl Couter-Marsh, **Theus MH** and Irving Allen. Elucidating the contribution of negative regulatory NLRs in traumatic brain injury ACC Meeting of the Minds, April, 2015. ***Travel awardee**
30. Thomas R*. Brickler, Xia Wang, Tere M. Williams, Irving C. Allen, **Theus MH**. Disruption of the NLR Inflammasome Complex has no Effect on Contusion Volume Following Traumatic Brain Injury. NIH National Capital Area TBI Research Symposium, March, 2014. ***First place poster competition**

31. Thomas R. Brickler, Xia Wang, Tere M. Williams, Irving C. Allen, **Theus MH**. Disruption of the NLR Inflammasome Complex has no Effect on Contusion Volume Following Traumatic Brain Injury. Symposium of the Central Virginia Chapter of the Society for Neuroscience, March, 2014.
32. Liebl DJ, Ricard J, Nellersa C and **Theus MH**. Dependence receptors participate in CNS injury progression. 5th Dependence receptor meeting, Les Menuires, France, January 2014.
33. Baumann G, Travieso L, Liebl DJ and **Theus MH**. Pronounced hypoxia in the subventricular zone following traumatic brain injury and the neural stem/progenitor cell response. Neurotrauma Society meeting, J Neurotrauma, 30(15): A-1-A-183 (August 2013).
34. Dixon KJ, **Theus MH**, Mier J, Kernie S and Liebl DJ. Residential Neural stem/progenitor cells promote tissue sparing following traumatic brain injury. J. Neurotrauma. A-1-A-230 (August 2012).
35. **Theus MH**, Ricard J, Kernie SG, Liebl DJ. EphB3 limits the expansion of neural stem/progenitor cells in the SVZ by regulating p53 during homeostasis and following brain injury. 8th IBRO World Congress of Neuroscience, Florence, Italy, 04; D118, 2011.
36. **Theus MH***, Glass S, Liebl DJ. Neuroprotective effects of ephrinB3 after traumatic brain injury. Neurotrauma Society meeting, J. Neurotrauma, 28:A-1–A-134 (June 2011) (***Goldberger award Top Student poster, Travel awardee**).
37. Glass S, **Theus MH**, Zhuang Z, Liebl D., A pro-inflammatory role of Eph receptors following traumatic CNS injury Society for Neurosci. Abstr. 427, 2010.
38. **Theus MH***, Ricard J, Liebl DJ. EphB3 Limits the Expansion of Neural Progenitor Cells in the SVZ by Regulating p53 During Homeostasis and Following Traumatic Brain Injury. Neurotrauma Society meeting, 2010 (***WinTR award Top Student poster. Travel awardee**).
39. **Theus MH**, Ricard J, Liebl DJ. Pro-apoptotic Function for Eph Receptors during Adult neurogenesis and following CNS injury. Christopher and Dana Reeves Foundation, Annual meeting, 2008.
40. Wei L, **Theus MH**, Frances K, Hu X, Yu SP. Hypoxic preconditioning improves engraftment of embryonic and bone marrow-derived stem cells in the ischemic brain. Keystone Conference Abstr.: 4.462, 2008.
41. **Theus MH**, Baumann G., Liebl DJ. EphB3 receptor restricts proliferation of neural stem cells in the adult SVZ and under hypoxic culture conditions. Keystone Conference Abstr.: 4.425, 2008.
42. **Theus MH.**, Baumann G., Liebl D. The role of EphB receptors in the endogenous adult neural stem cell response after traumatic brain injury. Neuroscience Research Day, University of Miami, 2007.
43. **Hedrick-Theus M**, Cui L, Yu SP and Wei L. Hypoxia and erythropoietin-induced preconditioning promotes embryonic stem cell survival in vitro and after transplantation into ischemic brain of rats. Stem Cell Research and Therapeutics Conference, Burlingame, CA March 2-3 2006.
44. Wei L., Wang J., **Theus MH.**, Keogh C.L., Gottlieb D.I., Yu S.P. Vasculogenesis, angiogenesis and local blood flow recovery after embryonic stem cell transplantation in the ischemic brain. Brain05. Amsterdam, 2005.
45. Frances K, **Theus MH**, Yu SP, Wei L. Src tyrosine kinases regulate expression of voltage-gated ion channels during neuronal differentiation of cultured embryonic stem cells. Society for Neurosci. Abstr.: B10: 940.8, 2005.

46. **Theus MH**, Cui L, Yu S.P., Wei L. Hypoxic preconditioning of embryonic stem cells prior to transplantation promotes their survival in the ischemic brain. Society for Neurosci. Abstr.: D32: 259.6, 2005.
47. **Theus MH***, Yu S.P., Wei L. Preconditioning with sublethal hypoxia induces protection in neural derived embryonic stem cells *in vitro*. Experimental Neurology: 193(1) 247-248, 2005. ***Travel Awardee**
48. Lang H., Schulte B., **Theus MH**, Wei L, Schmiedt R. Engraftment, Migration and Survival of Mouse Embryonic Stem Cell in the Lateral Wall of Gerbil Cochlea. Society for Neurosci. V4: 303.3, 2004.
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50. **Theus MH***, Cui L, Yu S.P, Wei L. Neuronal differentiation of embryonic stem cells and the expression and function of Src-family tyrosine kinases. Neurology 187(1): 220, 2004. ***Travel Awardee**
51. **Theus MH**, Yu S.P, Wei L. Expression of Src-family tyrosine kinases during neuronal differentiation of embryonic stem cells. Society for Neurosci. Abstr. A64: 673.15, 2003.
52. **Hedrick M**, Whitaker VR, Natasen S, Crawford C, Belt J. Modulation of nucleoside transport expression during differentiation of human promyelocytic leukemia. Student Research Day, MUSC, 2002.