

SCOT MCINTOSH

EMPLOYMENT	March 2015-Present	Laboratory Manager High Point University Fred Wilson School of Pharmacy High Point, NC
	Aug 2000-Feb 2015	Laboratory Technician II-IV Wake Forest University School of Medicine Department of Physiology & Pharmacology Winston-Salem, NC
	August 1999-August 2000	Laboratory Technician Precision Fabrics Group Inc. Quality Control Department Greensboro, NC

EDUCATION Bachelor of Science in Biology; East Carolina University 1999

QUALIFICATION OVERVIEW

Quality-focused Laboratory Manager with 25 years of experience performing a wide variety of routine and experimental laboratory procedures associated with behavioral self-administration and neurochemical analysis in substance abuse research.

ACTIVE MEMBERSHIPS

- Society for Neuroscience (2014-present)
- Biosafety Committee at High Point University (2018-present)
- Self-Study Steering Committee at High Point University Fred Wilson School of Pharmacy (2024-present)

MANAGEMENT RESPONSIBILITIES

- Accountable for daily laboratory operations and supervision.
- Serve as liaison with vendors and sales representatives
- Maintain service contracts on equipment
- Responsible for developing plans for research project applications.
- Adjust common laboratory operational procedures when needed; disseminate the alterations to other research staff and students to ensure each understands the issues and which laboratory functions are impacted.

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- Serve as liaison between principal investigator and co- investigators/ research staff. Meet periodically with collaborating groups to solve operating problems, improve technical activities and to assure faculty scientific progress is moving forward.
- Offer advice on technical procedures and equipment; provide options to other researchers regarding standards for conformance.
- Formulate short and long-range scientific goals and create projections for future needs based on preferred strategies.
- Monitor scientific activities and progress of funded projects. Take responsibility for results in terms of costs, methods used, resources required and oversee routine or specialized procedures
- Present technical reports detailing work volume and progress for laboratory meetings.
- Plan laboratory meetings with laboratory personnel to ensure progress, compliance and anticipated productivity.
- Assure research staff adheres to established standard operating procedures and that each person operates specialized equipment as trained. Assist in hiring and training personnel.
- Stay abreast of Animal Biohazard Safety guidelines and disseminate to other staff members.
- Train new technicians and students regarding the proper care and use of research animals, operation of lab equipment and instruments, animal (rodent) surgery and behavior training, and the collection and organization of results.
- Evaluate new employees and students on their performance and progress.

TECHNICAL RESPONSIBILITIES

- Collect, evaluate and interpret behavioral and neurochemical data
- Surgical procedures in rodents.
- Proficient in a variety of anesthetic techniques.
- Conduct and oversee behavioral experiments such as drug self administration, cognitive tasks, conditioned place preference, intracranial injections and micro dialysis.
- Provide routine animal care and maintain animal housing facilities and equipment.
- Maintain and organize the functionality of sound attenuating operant chambers used for behavioral assays.
- Monitor and maintain inventory of controlled substances, drugs, surgical supplies, materials and equipment needed for daily lab operation.
- Harvest tissue from rodents and non-human primates and prepare tissue samples for specialized procedures. Fresh and frozen dissections of brain tissue and histology using microscopy.
- Preparation and analysis of tissue samples using HPLC, MS-MS Spectrometry, Laser Capture Microdissection, Real Time Q-PCR, Western Blotting, Capillary Electrophoresis, Autoradiography, Immunohistochemistry and Enzyme Linked Immunosorbent Assay (ELISA).
- Format data to include in manuscripts for publication.

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- Review scientific journals, publications, and other documents to gain information regarding progressive experimental procedures.
- Write Med State programs and macros to run Med PC behavioral studies.
- Knowledgeable with Microsoft word, excel, and power point, sigma plot, & Med PC.

STUDENT MENTORING

August 2025-Present Sierra Werner
High Point University (Biochemistry/Pre-Med)

August 2025-Present Alexa Klein
High Point University (Biology/Pre-Med)

March 2024-Present Nickalus Smith
High Point University (Pharmacy)

Jan 2024-Present Ian Gordon
High Point University (Pharmacy)

Jan 2024-Present Jessica Napoli
High Point University (Pharmacy)

Jan 2023-Present Andrea Zaglin
High Point University (Nursing)

April 2023-May 2025 Isabella Maldonado
High Point University (Neuroscience)

Aug. 2020-Aug 2021 Alexandra Kapolis
High Point University (Neuroscience)

Dec 2021-Feb 2023 Kiernan McDonald
High Point University (Biology)

April 2021-Feb 2023 Ryan Thompson
High Point University (Biology/Pre-PA)

July 2019- June 2021 Billy Mathias
High Point University (Neuroscience)

May 2019- May 2020 Anni Rexha
High Point University (Neuroscience)

April 2019- Sept 2020 Alana Hodges
High Point University (Exercise Sports Science)

Sept 2018- June 2021 Jeff Zheng
High Point University (Pharmacy)

Nov. 2016-May 2018 Jackson Kicklighter
High Point University (Pharmacy)

Sept. 2016-May 2017 Brittany McCoy
High Point University (Pharmacy)

Sept. 2016-May 2017 Sunni Brown
High Point University (Pharmacy)

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April 2016- May 2018

Deanna Lee
High Point University (Biology)

April 2016- Nov 2017

Melanie Maldonado
High Point University (Biology)

PUBLICATIONS

- **Multifaceted Modulation of Human Opioid Receptors by Kratom Alkaloids: Binding Affinity, Functional Selectivity, and Allosteric Activity.** *S.E. Hemby, M. Rangel-Grimaldo, S. McIntosh, J. Zheng, L. Flores-Bocanegra, T.N. Graf, R.A. Coover, N.H. Oberlies.* Submitted **12/2025**
- **Oxa-iboga alkaloids lack cardiac risk and disrupt opioid use in animal models.** *Vaclav Havael, Andrew C Kruegel, Benjamin Bechand, Scot McIntosh, Leia Stallings, Alana Hodges, Madalee G Wulf, Mel Nelson, Amanda Hunkele, Michael Ansonoff, John E. Intar, Christopher Hwu, Rohini S. Ople, Najah Abi-Gerges, Saheem A. Zaidi, Vsevolod Katritch, Mu Yang, Jonathan A. Javitich, Susruta Majumdar, Scott E. Hemby, Dalibaor Sames.* Nature Communications. **2024** Sept
- **Pharmacology and Therapeutic Potential of Benzothiazole Analogues for Cocaine Use Disorder.** *Boateng CA, Nilson AN, Placide R, Pham ML, Jakobs FM, Boldizar N, McIntosh S, Stallings LS, Korankyi IV, Kelshikar S, Shah N, Panasis D, Muccilli A, Ladik M, Maslonka B, McBride C, Sanchez MX, Akca E, Alkhatib M, Saez J, Nguyen C, Kurtyan E, DePierro J, Crowthers R, Brunt D, Bonifazi A, Newman AH, Rais R, Slusher BS, Free RB, Sibley DR, Stewart KD, Wu C, Hemby SE, Keck TM.* J Med Chem. **2023** Sep 14;66(17):12141-12162.
- **Chronic haloperidol administration in rhesus monkeys downregulates select BDNF gene variants and protein within dorsolateral prefrontal cortex and entorhinal cortex.** *Scott E. Hemby, Scot McIntosh.* Schizophrenia Research. Submitted **2022** June
- **Chemical composition and biological effects of kratom (*Mitragyna speciosa*): In vitro studies with implications for efficacy and drug interactions.** *Todd, D.A., Kellogg, J.J., Wallace, E.D., Khin, M., Flores-Bocanegra, L., Tanna, R.S., McIntosh, S., Raja, H.A., Graf, T.N., Hemby, S.E., Paine, M.F., Oberlies, N.H., and Cech, N.B.* Sci Rep 10, 19158. **2020**
- **Non-dependent binge drinking alters the microglial population of the hippocampus but not the amygdala.** *Eva Greengrove, Bella Grifasi, Drew Evans, Lauren Dorn, Scot McIntosh, S. Alex Marshall.* Brain Sciences. Submitted **2019** June.
- **Characterization of the hippocampal neuroimmune response to binge-like ethanol consumption in the drinking in the dark model.** *Grifasi I.R. · McIntosh S.E. · Thomas R.D. · Lysle D.T. · Thiele T.E. · Marshall S.A.* NeuroImmunoModulation. **2019** Jan
- **Abuse liability and therapeutic potential of the *Mitragyna speciosa* (Kratom) alkaloids mitragynine and 7-hydroxymitragynine.** *Scott E. Hemby, Scot McIntosh, Francisco Leon, Stephen Cutler, Christopher McCurdy.* Addiction Biology. **2018** June.
- **Changes in cytokine and glial responses induced by binge-like drinking under nondependent conditions.** *S. Alex Marshall, Scot McIntosh, Lauren E. Dorn, E.*

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Greengrove, Rhiannon D. Thomas, Donald T. Lysle, and Todd E. Thiele. Alcohol. **2018** Feb; 66:91-92.

- **High and low doses of cocaine intake are differentially regulated by Dopamine D2 receptors in the ventral tegmental area and the nucleus accumbens.** Rong Chen, Scot McIntosh; Scott Hemby; Haiguo Sun; Tammy Sexton; Thomas Martin; Steven Childers. Neuroscience Letters. **2018** Feb; 671.
- **Regional analysis of glial, neuronal and MAP kinase markers following cocaine self-administration in HIV-1 transgenic rats.** Scot McIntosh and Scott E. Hemby. Brain Research. **Submitted 2017**
- **Increased Sensitivity to cocaine self-administration in HIV-1 transgenic rats is associated with changes in striatal dopamine transporter binding.** Scot McIntosh, Tammy Sexton, Lindsey P. Pattison, Steven R. Childers, Scott E. Hemby. Journal of Neuroimmune Pharmacology. **2015** March 10; 10(3)
- **Changes in dopamine transporter binding in nucleus accumbens following chronic self-administration cocaine/heroin combinations.** Lindsey P. Pattison, Scot McIntosh, Tammy Sexton, Steven R. Childers, Scott E. Hemby. Synapse. **2014**; 68:437-444.
- **Altered Expression of Glial and Synaptic Markers in the Anterior Hippocampus of Behaviorally Depressed Female Monkeys.** Stephanie L. Willard, Scott E. Hemby, Thomas C. Register, Scot McIntosh, Carol A. Shively. Neuroscience Letters. **2014** Jan 15
- **Dopaminergic Dysregulation in Prefrontal Cortex of Rhesus Monkeys Following Cocaine Self-Administration.** Scot McIntosh, Leonard Howell, Scott E. Hemby. Frontiers in Addictive Front Psychiatry. **2013** Aug 21; 4:88.
- **Membrane proteomic analysis of rat nucleus accumbens following self-administration of cocaine, heroin and cocaine/heroin, "speedball," combinations.** L.P. Pattison, N.S. Tannu, S. McIntosh, A.L. Grigg, S.E. Hemby. Conference Paper: 5th Special Conference of the International Society for Neurochemistry, Volume: 122; Journal of Neurochemistry **2012** August.
- **Differential regulation of accumbal dopamine transmission in rats following cocaine, heroin and speedball self-administration.** Lindsey P. Pattison, Scot McIntosh, Evgeny A. Budygin and Scott E. Hemby. Journal of Neurochemistry. **2012** July; 122(1):138-46.
- **Assessment of extracellular dopamine, serotonin, glutamate and GABA in nucleus accumbens and ventral tegmental area during cocaine.** S.E. Hemby, Scot McIntosh, Kathleen L. Egan, B. Horman, C. Co and L.H. Parsons. Conference Paper (40th Annual Meeting of the American-Society-for-Neurochemistry, Volume 108) in Journal of Neurochemistry. **2009** February.
- **Chronic binge-like ethanol drinking in rats produces widespread decreases in brain biogenic monoamine neurotransmitter turnover rates reversed by ethanol drinking.** James E. Smith, Conchita Co, Scot McIntosh and Carol C. Cunningham. Conference Paper: Conference on Alcoholism and Stress- A Framework for Future Treatment, Volume 42. Journal of Neurochemistry. **2008** Jun 1; 105(6):2134-2155.
- **Alkylation of opiod receptors by 5'-naltrindole-isothiocyanate injected into the nucleus accumbens of rats: receptor selectivity and anatomical diffusion.** Martin TJ, McIntosh S, Smith JE. Synapse. **2006** Oct; 60(5): 384-91.
- **Self-administered heroin and cocaine combinations in the rat: additive reinforcing effects-supra-additive effects on nucleus accumbens extracellular dopamine.** Smith JE,

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ABSTRACTS

- **Pharmacological characterization of kratom alkaloids at opiate receptors: binding affinities, invitro and in vivo functional assessments.** *Scott E. Hemby, Scot McIntosh, Tyler N Graf, Manuel Rangel-Grimaldo, Laura Flores-Bocanegra, Robert A. Coover, Nicholas Oberlies. Experimental Biology 2022.*
- **A comparison of hippocampal microglia responses in aged and young rodents following dependent and non-dependent binge drinking.** *I.R. Grifasi¹, E.L. Greengrove¹, C.P. Trevisani¹, S.E. McIntosh¹, S.A. Marshall. RSA 2019.*
- **Abuse liability of mitragynine and 7 hydroxymitragynine putative primary alkaloids of *Mitragyna speciosa* (Kratom).** *S.E. Hemby, S. McIntosh, S.J. Cutler, C.R. McCurdy. SFN 2017.*
- **Chronic cocaine self-administration alters cognitive flexibility in male HIV transgenic rats.** *Scot McIntosh, Scott E. Hemby. SFN 2016.*
- **The efficacy of topiramate at reducing the reinforcing effects of ethanol corresponds to its ability to suppress glutamate release in the nucleus accumbens of alcohol preferring rats.** *Wendy J. Lynch, Richard W. Morgan, Colin Bond, Matthew D. Lycas, Scot McIntosh, Bankole A. Johnson, Scott E. Hemby. CPDD 2013.*
- **Cellular and molecular factors contributing to hippocampus size in an adult female monkey model of depression.** *Stephanie L. Willard, David R. Riddle, M. Elizabeth Forbes, Scott Hemby, Scot McIntosh, Beth Uberseder, Carol A. Shively. SFN 2012.*
- **Altered dopamine transporter function in the nucleus accumbens of rodents following chronic self-administration of cocaine/heroin combinations.** *L.P. Pattison, T. Sexton, R. Xiao, A.L. Grigg, S. McIntosh, S.R. Childers, S.E. Hemby. WNCN SFN 2012.*
- **Membrane proteomic analysis of rat nucleus accumbens following self-administration of cocaine, heroin and cocaine/heroin, "speedball," combinations.** *L.P. Pattison, N.S. Tannu, S. McIntosh, A.L. Grigg, S.E. Hemby. ISN Special Conference 2012, US HUPO 2012, SFN 2011.*
- **Dopamine transmission following acute and chronic "speedball" administration.** *L.P. Pattison, S. McIntosh, V. Grinevich, E.A. Budygin, S.E. Hemby. CPDD 2011.*
- **Analysis of altered mesolimbic dopamine neurotransmission following "speedball" self-administration using in vivo microdialysis and fast-scan cyclic voltammetry.** *L.P. Pattison, S. McIntosh, B.M. Horman, E.A. Budygin, S.E. Hemby. SFN 2010.*
- **Comparative Analysis of Extracellular Dopamine and Serotonin in Mesolimbic Regions Following Speedball, Cocaine and Heroin Self-administration.** *K.L. Egan, S. McIntosh, G. Acosta, B. Horman, S.E. Hemby. SFN 2009.*
- **The effects of cocaine/heroin (speedball), cocaine and heroin self-administration on extracellular levels of dopamine, serotonin, GABA and glutamate in the nucleus accumbens and ventral tegmental area.** *Scot McIntosh, Kathleen Egan, Brian Horman, Conchita Co, Loren Parsons, Scott Hemby. ACNP 2008.*

- **Effects of nicotinic receptor agonist injected into the diagonal band on intravenous cocaine self-administration in the rat.** *J.E. Smith, M.D. Collier, S. McIntosh, C.L. Kennedy, C. Co.* CPDD 2007
- **Effects of D2-receptor alkylation in the nucleus accumbens on cocaine self administration in rats: comparison with effects on D2 binding.** *Thomas J. Martin, Jeremy N. Young, Scot McIntosh, James E. Smith.* CPDD 2002.
- **Immunolesioning of cholinergic neurons in the nucleus accumbens: Effects on cocaine self-administration in rats.** *Conchita Co, Evan Johnson, Scot McIntosh, T.J. Martin, James E. Smith.* CPDD 2002.
- **Dopamine D2 receptor stimulated [³⁵S]GTPγS autoradiography in rat brain.** *K.A. O'Connor, S. Childress, J.E. Smith, S. McIntosh, T.J. Martin.* SFN 2001.