

**Kiel D. Neumann**  
 St. Jude Children's Research Hospital  
 262 Danny Thomas Place  
 Mail Stop 220  
 Memphis, TN 38105  
 901-595-2119  
 kiel.neumann@stjude.org

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## 1. Current Position at St. Jude

Assistant Member	2022 – present
Department of Diagnostic Imaging	
St. Jude Children's Research Hospital	
Memphis, TN 38105	

## 2. Education and Training

B.S.	University of Nebraska, Omaha (Chemistry; <i>cum laude</i> )	2008
B.S.	University of Nebraska, Omaha (Biology; <i>cum laude</i> )	2008
Ph.D.	University of Nebraska, Lincoln (Chemistry)	2008-2012

## 3. Professional Career

Associate Director of Research and Development Ground Fluor Pharmaceuticals Inc. Lincoln, NE	2012 - 2015
Postdoctoral Fellow, University of California San Francisco, CA	2015-2017
Assistant Professor of Radiology and Medical Imaging University of Virginia Charlottesville, VA	2017-2022
Director of Radiochemistry, School of Medicine University of Virginia Charlottesville, VA	2017-2022
Voting member of Radioactive Drug Research Committee University of Virginia Charlottesville, VA	2017-2022
Cancer Center Member University of Virginia Charlottesville, VA	2019-2022
Assistant Professor of Chemistry (dual appointment) University of Virginia Charlottesville, VA	2022 (April-June)
Assistant Member, Department of Diagnostic Imaging St. Jude Children's Research Hospital Memphis TN	2022-present
Research Director Molecular Imaging Research Hub, Department of Diagnostic Imaging St. Jude Children's Research Hospital Memphis, TN	2022-present

Visiting Assistant Professor of Radiology and Medical Imaging University of Virginia Charlottesville, VA	2022-present
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#### 4. Professional Memberships

Society of Radiopharmaceutical Sciences	2008
American Chemical Society	2008-2012
Radiochemistry consultant for Advion Pharmacokinetics and Bioanalytics	2011
Visiting Scholar at Harvard Massachusetts General Hospital	2012-2014
World Molecular Imaging Society	2012-present
Society of Nuclear Medicine	2013-present
Consultant for Teledyne-Isco	2017-present

#### 5. Editorial Board Appointments

<u>Editorial Board Reviewer</u> – Frontiers in Medicine	2022 - present
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#### 6. Grant Review / Study Activities

Pancreatic Cancer Research fund – grant reviewer	2021
Focused Ultrasound Foundation –grant reviewer Confirmation of Drug Delivery Awards Program	2022
Emerging Imaging Technologies in Neuroscience (EITN) NIH study section; <i>ad hoc</i> reviewer	2023

#### 7. Honors and Awards

Pfizer Graduate Research Assistantship	2009
<b>Entrepreneurial lead</b> – Ground Fluor Pharmaceuticals, National Science Foundation I-Corps Program	2011
<b>Young Professional's Committee Award</b> (2 <sup>nd</sup> Place) for Basic Science, Society of Nuclear Medicine	2012
<b>Young Investigator Award</b> (3 <sup>rd</sup> Place) in Basic Science, Society of Nuclear Medicine	2012
<b>Nebraska Admiralsip</b> - highest honor bestowed to Nebraska citizen-conferred by Nebraska governor for extraordinary contribution to science in the State of Nebraska	2014
"Imaging Active Infection <i>in vivo</i> Using D-Amino Acid Derived PET Radiotracers". <i>Sci. Rep.</i> 7:7903-7910, 2017 highlighted as the top story in the SNMMI Smartbrief August 31, 2017.	2017
Basic/translational science in UVA Radiology Research Week Symposium (1 <sup>st</sup> place)	2018
<b>Core of the Year</b> – University of Virginia School of Medicine Radiochemistry Core (Director)	2018
<b>Academy Council for Early Career Investigators in Imaging (CECI2)</b> . Nominated and accepted in January 2020.	2020

#### 8. Formal Education / Teaching Activities

## Mentoring and Education

CHEM 3951 Chemistry Undergraduate Research Course – Sophia Bufalino (8/2018 – 5/2021)

- Inclusive as an instructor for this course is to provide 8-12 hours/week of in-person laboratory mentoring. In addition, supervision and grading of periodic take-home research projects.
- PhD dissertation committee member – Department of Chemistry, University of Virginia  
*Synthetic Applications of Molybdenum and Tungsten Dearomatization Agents*  
Justin H. Wilde, PhD
- PhD dissertation committee member – Department of Chemistry, University of Virginia  
*Strategies Toward Nucleophilic Additions to h<sup>2</sup>-Bound Arenes*  
Jacob A. Smith, PhD
- PhD dissertation committee member – Department of Chemistry, University of Virginia  
*Reactivity of Electron Deficient Arenes Upon Coordination to the Tungsten Dearomatization Agent {Wtp(NO)(PMe<sub>3</sub>)}*  
Spenser Simpson, PhD

## 9. Patents

1. PARTICLES FUNCTIONALIZED WITH IMAGEABLE RADIOISOTOPES AND METHODS OF MAKING AND USE THEREOF (17/166,820). US Patent Application submitted February 3, 2021. Awarded August 5, 2021.
  - a. Licensed by Boston Scientific Corporation on September 1, 2021.
2. PARTICLES FUNCTIONALIZED WITH IMAGEABLE RADIOISOTOPES AND METHODS OF MAKING AND USE THEREOF (62/970587). PCT Application submitted February 5, 2021. Awarded August 12, 2021.
  - a. Licensed by Boston Scientific Corporation on September 1, 2021.
3. PARTICLES FUNCTIONALIZED WITH THERAPEUTIC RADIOISOTOPES AND METHODS OF MAKING AND USE THEREOF (63/147,161). US Provisional Patent Application submitted February 8, 2021.

## 10. Grant Awards

### Current

N3239820P0034

DoD/Naval Medical Research Center

11/1/2020-10/31/2022

*Molecular Imaging of Infectious Disease of Military Relevance in vivo.*

The goal of this study is to determine sensitivity of bacteria specific imaging agents in military-relevant pathogens, in a living system. In addition, we aim to explore inter- and intra-genus sensitivity and/or specificity and whether a relationship exists between imaging agent accumulation and virulence using multidrug resistant (MDR) clinical pathogens.

Total costs: \$270,774

R01EB028338-01

10/1/2020-9/30/2024

NIH/NIBIB

*Novel imaging agents of oxidative stress in the pathophysiology of the central nervous system*

In this study, we will develop a novel Positron Emission Tomography (PET) imaging agent to quantify oxidative stress within the CNS, in real-time, which will aid in identifying therapeutic windows for antioxidants to ameliorate the secondary cascade of CNS pathophysiology associated with many CNS diseases.

Role: PI

Total costs: \$1,993,029

Boston Scientific

10/1/2021-9/30/2023

*Examining measures of vascular flow and perfusion following administration of a Theraspheres dosing surrogate*

The goal of this project is to develop a PET radiolabeled TheraSphere dosing surrogate. Using PET imaging, the surrogate will be used to determine patient-specific dosing considerations with respect to vascular flow and/or complete tumor coverage using TheraSphere treatment in hepatocellular carcinoma.

Role: PI

Total costs: \$289,899

American Cancer Society

7/1/2020-6/30/2022

*Development and Evaluation of an in vivo Imaging Tool for Glioblastoma Stem Cells.*

In this pilot study, we will synthesize a novel radiopharmaceutical, [<sup>18</sup>F]RIPGBM, which is chemically identical to RIPGBM. We will then biologically validate [<sup>18</sup>F]RIPGBM's propensity to specifically accumulate in GSCs, both in vitro and in vivo.

Role: PI

Total costs: \$30,000

UVA BRAIN Institute Pilot Grant

1/1/2018-2/1/2022

*Concussion Induced Brain Inflammation*

The goal of this pilot study is to demonstrate acute concussion-induced neuroinflammation can be quantified in a small cohort of athletes from the University of Virginia using the TSPO ligand, [<sup>18</sup>F]DPA-714.

Role: Co-PI

Total Costs: \$150,210

R21NS118278 (Price)

7/1/2020 - 6/30/2022

NIH/NINDS

*ImmunoPET Assessment of anti-CD47 Immunotherapy Delivery to Glioblastoma with Focused Ultrasound*

The goal of this project is to overcome the blood brain barrier via the activation of intravascular microbubbles with MRI-guided focused ultrasound in order to deliver anti-CD47 immunotherapy to gliomas.

Role: Co-I

Total Costs: \$275,000

RO1EB030744-01 (Price)

9/1/2020 - 8/31/2025

NIH/NIBIB

*Genome Editing the Blood-Brain Barrier with Sonoselective Focused Ultrasound*

The primary goal of this project is to engineer a platform technology capable of genome editing the blood brain barrier in a safe, endothelial cell-selective, and non-invasive manner, with precise loco-regional targeting provided by MR image-guidance.

Role: Co-I

Total costs: \$2,202,757

NIH-NINDS 1UH3NS115118-01

10/01/2019 – 9/30/2022

*Transcranial Focused Ultrasound For Head And Neck Cancer Pain. A Pilot Study*

The primary aim of this study is to assess the safety and preliminary effectiveness in six head and neck cancer patients with opioid-resistant pain. [<sup>11</sup>C]carfentanil PET imaging will be used as an objective measure of treatment outcome.

Role: Co-I

Total costs: \$1,290,007

CellSight Technologies, Inc.

4/1/21 – 3/31/2023

*Pilot Evaluation of novel Positron Emission Tomography (PET-CT) assessment of CD8+ tumor infiltrating lymphocytes (TIL) in metastatic tumor deposits of advanced solid malignancies pre- and post- application of focused ultrasound ablation (FUSA).*

The goal of this study is to test a tracer (F-AraG) for imaging the infiltration of T-cell into malignant tumors.

Role: Co-I

Total costs: \$100,000

**Completed**BTG Therapeutics Exploratory Grant

03/01/2019-02/29/2020

*Development and Evaluation of a biologically stable TheraSphere image-able surrogate*

The goal of this project is to develop a PET radiolabeled TheraSphere dosing surrogate. Using PET imaging, the surrogate will be used to determine patient-specific dosing considerations with respect to vascular flow and/or complete tumor coverage using TheraSphere treatment in hepatocellular carcinoma.

Role: PI

Total Costs: \$161,565

UVA BRAIN Institute Pilot Grant

1/1/2019 – 12/31/2019

*Radiosynthetic Development of [<sup>11</sup>C]carfentanil for evaluation of transcranial focused ultrasound in the periaqueductal gray region.*

The goal of this study is to use PET to objectively evaluate patient response to transcranial focused ultrasound to reduce or eliminate chronic pain. We will use [<sup>11</sup>C]carfentanil PET to evaluate patients pre- and post-surgery.

Role: Co-PI

Total Costs: \$173,287

Exploratory Phase 0 IND Biomarker Trial

08/01/2018 – 12/31/2019

*First-in-man evaluation of a novel PSMA inhibitor, [<sup>18</sup>F]JMS-5368*

The goal of this study is evaluate dosimetry and biodistribution of a novel PSMA PET imaging agent in a cohort of metastatic, PSMA-confirmed cancer patients compared to normal subjects.

Role: PI

Total Costs: \$209,689

UVA BRAIN Institute Pilot Grant

1/1/2018-5/1/2019

*Concussion Induced Brain Inflammation*

The goal of this pilot study is to develop an animal model of concussion-induced neuroinflammation, which will be co-validated using the TSPO ligand, [<sup>18</sup>F]DPA-714 to quantify the extent of neuroinflammation resulting from microglial activation in the CNS.

Role: Co-PI

Total Costs: \$44,272

2021 UVA Equipment Trust Fund

*Gas Chromatography System*

Cost: \$40,726

2021 UVA Equipment Trust Fund

*Rotary evaporator and Circulating Chiller*

Cost: \$15,130

2021 UVA Equipment Trust Fund

*Radioactive dose calibrator*

Cost: \$8,364

2019 UVA Equipment Trust Fund

*Manual Radiosynthesis HotCell + Waste gas discharge system*

Cost: \$204,590

2018 UVA Equipment Trust Fund

*AccqPrep automatic HPLC purification system (x2)*

Cost: \$94,588

2018 UVA Equipment Trust Fund

*FlowRAM Detection System and Multi-channel Analyzer*

Cost: \$30,566

2018 BRAIN Institute Equipment Fund

*Sofie Biosciences Pure/Form HPLC + Formulation Purification System*

Cost: \$39,000

2018 UVA Equipment Trust Fund

*Schlenk Airfree Synthesis Manifold*

Cost: \$9,960

2017 UVA Equipment Trust Fund

*Hidex Automated Gamma Counter*

Cost: \$49,950

UCSF Radiology Seed Grant #15-26

10/01/2015-09/30/2016

*Polyamine Biosynthesis as a PET Biomarker for Cancer*

This seed grant provided funds toward developing a novel [<sup>18</sup>F]-polyamine analogue as a PET prognostic biomarker of *myc*-driven breast, prostate, and colon cancer *in vitro* and *in vivo*.

Role: PI

Total Costs: \$10,000

NSF SBIR Phase II-1353246

04/15/2014-04/15/2016

*PET Radiotracer Synthesis*

This project provides funds for the expansion of new research and product development, as well as aid in the commercialization of novel proprietary chemistry for the production of <sup>18</sup>F-fluoroDOPA—a PET imaging agent intended for the diagnosis and management of brain tumors and neurodegenerative disorders.

Role: PI

Total Costs: \$1,361,310

NSF SBIR Phase IB-1303355

11/25/2012-3/31/2013

*PET Radiotracer Synthesis*

This project provided an extension of funds toward the development and commercialization of radiofluorination chemistry in production of imaging agents for clinical use.

Role: PI

Total Costs: \$30,000

NSF SBIR Phase I-1215217

06/14/2012-12/14/2012

*PET Radiotracer Synthesis*

This project provided funds for the development of novel radiofluorination chemistry, which is focused toward commercialization of radiofluorinated imaging agents for clinical use.

Role: PI

Total Costs: \$180,000

**11. Publication Record****i. Original Research Articles**

(\*first author)

(†corresponding author)

1. Improved Arene Fluorination Methodology for I(III) Salts, B. Wang, L. Qin, **K. D. Neumann**, S. Uppaluri, R. L. Cerny, and S. G. DiMugno, *Org. Lett.*; **2010**; *12*; 3352-3355.
2. Unprecedented Directing Group Ability of Cyclophanes in Arene Fluorinations with Diaryliodonium Salts, J. W. Graskemper, B. Wang, L. Qin, **K. D. Neumann**, S. G. DiMugno, *Org. Lett.*; **2011**; *13*; 3158-3161.
3. *In Vivo* Biodistribution of No-Carrier-Added 6-<sup>18</sup>F-Fluoro-3,4-Dihydroxy-L-Phenylalanine (<sup>18</sup>F-DOPA), Produced by a New Nucleophilic Substitution Approach, Compared with Carrier-Added <sup>18</sup>F-DOPA, Prepared by Conventional Electrophilic Substitution, W.-J. Kuik, I. P. Kema, A. H. Brouwers, R. Zijlma, **K. D. Neumann**, R. A. J. O. Dierckx, S. G. DiMugno, P. H. Elsinga, *J. Nucl. Med.*; **2015**; *56*; 106-112.
4. An Alternative to the Sandmeyer Approach to Aryl Iodides, B. Hu, W. H. Miller, **K. D. Neumann**, E. J. Linstad, S. G. DiMugno, *Chem. Eur. J.*; **2015**, *56*, 1-6.
5. A Practical, Automated Synthesis of meta-[<sup>18</sup>F]Fluorobenzylguanidine for Clinical Use, B. Hu, A. L. Vavere, **K. D. Neumann**, B. L. Shulkin, S. G. DiMugno, S. E. Snyder. *ACS Chem. Neurosci.*; **2015**, *6*, 1870-1879.
6. A mild and general one-pot synthesis of densely functionalized diaryliodonium salts. L. Qin, B. Hu, **K. D. Neumann**, E. J. Linstad, K. McCauley, J. Veness, J. J. Kempinger, S. G. DiMugno. *Eur. J. Org. Chem.*; **2015**, *27*, 5919-5924.
7. Dynamic nuclear polarization of biocompatible <sup>13</sup>C-enriched carbonate for *in vivo* pH imaging. D. E. Korenchan, R. R. Flavell, C. Baligand, R. Sriram, **K. D. Neumann**, S. Sukumar, H. VanBrocklin, D. B. Vigneron, D. M. Wilson, J. Kurhanewicz. *Chem. Commun.*; **2016**, *52*, 3030-3033.

8. Efficient automated syntheses of high specific activity 6-[<sup>18</sup>F]fluorodopamine using a diaryliodonium salt precursor. **K. D. Neumann\***, L. Qin, A. L. Vavere, B. Shen, Z. Miao, F. T. Chin, B. L. Shulkin, S. E. Snyder, S. G. DiMagno. *J. Label. Compd. Radiopharm.*; **2016**, 59, 30-34.
9. Optimization of an endovascular magnetic filter for maximized capture of magnetic nanoparticles. S. Kondapavulur, A. M. Cote, **K. D. Neumann**, C. D. Jordan, D. McCoy, M. C. Mabray, D. Liu, C.-H. Sze, A. Gautam, H. F. VanBrocklin, M. Wilson, S. W. Hetts. *Biomed Microdevices*; **2016**, 18, 1-13.
10. An Improved Radiosynthesis of O-(2-[<sup>18</sup>F]Fluoroethyl)-O-(p-nitrophenyl)methylphosphonate: A First-in-Class Cholinesterase PET Tracer. **K. D. Neumann\***, C. M. Thompson, J. E. Blecha, J. M. Gerdes, H.F. VanBrocklin. *J. Label. Compd. Radiopharm*; **2017**, 60, 337-342.
11. Imaging Active Infection *in vivo* Using D-Amino Acid Derived PET Radiotracers. **K. D. Neumann\***, J. Villanueva-Meyer, C. Mutch, R. F. Flavell, J. E. Blecha, T. Kwak, R. Sriram, H. F. VanBrocklin, O. Rosenberg, M. Ohliger, D. M. Wilson. *Sci. Rep*; **2017**, 7, 7903-7910.
12. Exploring Metabolism In Vivo Using Endogenous <sup>11</sup>C Metabolic Tracers. **K. D. Neumann\***, R. F. Flavell, D. M. Wilson. *Semin. Nucl. Med.* **2017**, 47, 461-473.
13. Detection of Bacteria-Specific Metabolism Using Hyperpolarized [2-<sup>13</sup>C]Pyruvate. R. Sriram, J. Sun, J. Villanueva-Meyer, C. Mutch, J. De Los Santos, J. Peters, D. E. Korenchan, **K. D. Neumann**, M. Van Criekeing, J. Kurhanewicz, O. Rosenberg, D. M. Wilson, M. A. Ohliger. *ACS Infect. Dis.* **2018**, 4, 797-805.
14. [<sup>11</sup>C]Para-Aminobenzoic Acid: A Positron Emission Tomography Tracer Targeting Bacteria-Specific Metabolism. C. A. Mutch, A. A. Ordonez, H. Qin, M. Parker, L. E. Bambarger, J. E. Villanueva-Meyer, J. E. Blecha, V. Carroll, C. Teglang, R. Flavell, R. Sriram, H. VanBrocklin, O. Rosenberg, M. A. Ohliger, S. K. Jain, **K. D. Neumann**<sup>†</sup>, D. M. Wilson. *ACS Infect Dis.* **2018**, 4, 1067-1072.
15. Radiosynthesis, ex Vivo Biodistribution, and in Vivo Positron Emission Tomography Imaging Evaluations of [11C]2-Pyridinealdoxime Methiodide ([11C]2-PAM): A First-In-Class Antidote Tracer for Organophosphate Intoxication. **K.D. Neumann\***, J. E. Blecha, T. R. Hayes, T. Huynh, C.-K. Chao, N. Guilloteau, K. R. Zinn, H. F. VanBrocklin, C. M. Thompson, and J. M. Gerdes. *ACS Chem. Neurosci.* 2018, 9, 3007-3014.
16. Quantification of <sup>89</sup>Zr-Iron oxide nanoparticle biodistribution using PET-MR and ultrashort TE sequences. C. D. Jordan, M. Han, S. Kondapavulur, D. B. Vera, **K.D. Neumann**, T. Moore, C. Stillson, R. Krug, S. Behr, Y. Seo, H. F. VanBrocklin, P. E. Z. Larson, M. Wilson, A. J. Martin, S. W. Hetts. *J. Magn. Reson. Imaging.* **2018**, 6, 1717-1720.
17. Improved, one-pot synthesis of 6-[<sup>18</sup>F]fluorodopamine and quality control testing for use in patients with neuroblastoma. A. L. Vāvere, **K. D. Neumann**, E. R. Butch, B. Hu, S. G. DiMagno, S. E. Snyder. *J. Labelled Comp Radiopharm.* **2018**, 14, 1069-1080.
18. Dose Formulation, Biodistribution and PET Imaging Studies of a First-In-Class Fluorine-18 Organophosphorus Cholinesterase Inhibitor Tracer in Rat. **K. D. Neumann\***, J. E. Blecha, C-K Chao, T. Huynh, K. R. Zinn, H. F. VanBrocklin, C. M. Thompson, J. M. Gerdes. *Current Chemical Biology.* **2020**, 14(4), 289-303.
19. ImmunoPET-informed sequence for focused ultrasound-targeted mCD47 blockade controls glioma. N. D. Sheybani, V. R. Breza, S. Paul, K. S. McCauley, S. S. Berr, G. W. Miller, **K. D. Neumann**, R. J. Price. *Journal of Controlled Release.* **2021**, 331, 19-29. doi.org/10.1016/j.jconrel.2021.01.023.
20. An automated radiosynthesis of [<sup>18</sup>F]DPA-714 on a commercially available radiosynthesizer, Elixys Flex/Chem. K. S. McCauley, J. H. Wilde, S. M. Bufalino, **K. D. Neumann**<sup>†</sup>. *Applied Radiation and Isotopes.* **2022**, 180, 110032-110035.

21. Imaging Diverse Pathogenic Bacteria *in vivo* with [<sup>18</sup>F]fluoromannitol Positron Emission Tomography. S. R. Simpson, A. E. Kesterson, J. H. Wilde, Z. Qureshi, B. Kundu, M. P. Simons, **K. D. Neumann**<sup>†</sup>. *J. Nucl. Med.* **2022**. Published online December 15, 2022. DOI: <https://doi.org/10.2967/jnumed.122.264854>.

## vi. Abstracts

1. Highly Efficient, No-carrier-added F-18-fluorodopamine synthesis with diaryliodonium salts. **K. D. Neumann**, A. L. Vavere, S. E. Snyder, S. G. DiMagno. *19<sup>th</sup> International Symposium on Radiopharmaceutical Sciences*, Amsterdam, Netherlands (2011).
2. Direct high yield no-carrier added radiosynthesis of [F-18] catecholamines. Z. Miao, B. Shen, L. Qin, **K. D. Neumann**, S. G. DiMagno, F. T. Chin. XXV<sup>th</sup> International Symposium on Cerebral Blood Flow, Metabolism, and Function & X<sup>th</sup> International Conference on Quantification of Brain Function with PET. Barcelona, Spain (2011).
3. General, highly efficient no-carrier-added synthesis of electron rich arenes via diaryliodonium salts. **K. D. Neumann**<sup>\*</sup>, L. Qin, A. L. Vavere, S. E. Snyder, S. G. DiMagno. *243<sup>rd</sup> National Meeting of the American Chemical Society*, San Diego, CA (2012).  
\*Oral abstract presented.
4. Highly efficient F-18 fluorination of diaryliodonium salts. L. Qin, **K. D. Neumann**, S. G. DiMagno. *243<sup>rd</sup> National Meeting of the American Chemical Society*, San Diego, CA (2012).
5. New rapid fluorination process for the production of carrier free-F-18 6-[<sup>18</sup>F]FDA and 6-[<sup>18</sup>F]-L-DOPA. **K. D. Neumann**<sup>†</sup>, L. Qin, A. L. Vavere, S. E. Snyder, S. G. DiMagno. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Miami, FL (2012).  
<sup>†</sup>Included in the RPSC Basic Science Summary Session as a highlight for current state-of-the-art.  
\*Oral abstract presented.
6. Fluorination in pharmaceutical and imaging applications. **K. D. Neumann**<sup>\*</sup>, L. Qin, A. L. Vavere, B. Shen, Z. Mao, F. T. Chin, S. E. Snyder, S. G. DiMagno. *245<sup>th</sup> National Meeting of the American Chemical Society*, New Orleans, LA (2013).  
\*Oral abstract presented.
7. Highly efficient synthesis of no-carrier-added [F-18]-4-fluoro-L-phenylalanine. K. S. Glaspy, **K. D. Neumann**, J. C. Easdon, S. G. DiMagno. *245<sup>th</sup> National Meeting of the American Chemical Society*, New Orleans, LA (2013).
8. Novel, easily deprotected diaryliodonium salts for [18F]-6-fluoro-L-DOPA and [18F]-6-fluorodopamine. **K. D. Neumann**<sup>\*</sup>, M. H. Helle, S. G. DiMagno. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Vancouver, British Columbia (2013).  
\*Oral abstract presented.
9. Radiosynthesis of 4-fluorophenylalanine from a diaryliodonium salt precursor. **K. D. Neumann**, K. S. Glaspy, A. L. Vavere, S. E. Snyder, S. G. DiMagno. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Vancouver, British Columbia (2013).
10. Preclinical PET imaging with [<sup>18</sup>F]fluorobisphenol-A. B. Shen, M. Zheng, F. Habte, **K. D. Neumann**, S. G. DiMagno, F. Chin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Vancouver, British Columbia (2013).
11. A new efficient synthesis of no carrier added radioiodinated tracers. B. Hu, J. E. Blecha, **K. D. Neumann**, H. F. VanBrocklin, S. G. DiMagno. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, St. Louis, MO (2014).
12. Microwave Assisted 18F-m-fluorobenzylguanidine (mFBG) Synthesis Using the ALP-mFBG<sup>™</sup> Diaryliodonium Salt Precursor. A. Amor-Coarasa, J. Kelly, B. Hu, **K. D. Neumann**, S. G. DiMagno, J. W. Babich. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Baltimore, MD (2015).



13. Optimized Microwave Assisted F-18-DOPA Synthesis Using a Diaryliodonium Salt Precursor. A. Amor-Coarasa, **K. D. Neumann**, S. G. DiMagno, J. W. Babich. *21<sup>st</sup> International Symposium on Radiopharmaceutical Sciences*, Columbia, MO (2015).
14. Radioiodination of diaryliodonium salts: A new approach to labeling MIBG and other radiotracers. J. E. Blecha, K. Dostzada, B. Hu, **K. D. Neumann**, S. G. DiMagno, H. F. VanBrocklin. *21<sup>st</sup> International Symposium on Radiopharmaceutical Sciences*, Columbia, MO (2015).
15. Cellular evaluation of receptor-binding radiotracers in a PET/MR compatible bioreactor. **K. D. Neumann\***, R. Sriram, M. VanCrieke, S. Wong, J. DeLos Santos, J. Kurhanewicz, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, San Diego, CA (2016).  
\*Oral abstract presented.
16. Targeting Translocator Protein (TSPO) with GE-180: Imaging brain inflammation and reactive gliosis. **K. D. Neumann**, J. Huie, J. Talbott, S. Wong, S. Rosi, J. Bresnahan, M. Beattie, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, San Diego, CA (2016).
17. Development of a novel PSMA-targeted PET imaging agent, CTT1057, for use in prostate cancer. B. Langston-Webster, C. Berkman, J. Slater, S. Jivan, **K. D. Neumann**, E. Whalley, P. Ketteridge, S. Behr, R. Aggarwal, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, San Diego, CA (2016).
18. Synthesis and Evaluation of 2-[<sup>18</sup>F]-fluoroethyl-4-nitrophenyl-methylphosphonate: A tracer to assess therapeutic countermeasures to organophosphate exposure. **K. D. Neumann**, C. Thompson, K. Zinn, C.-K. Chao, J. E. Blecha, T. Huynh, J. M. Gerdes, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Denver, CO (2017).
19. Fully automated preparation of [F-18] CTT1057, a new prostate cancer imaging agent, prepared using the ORA Neptis Perform Synthesizer®. S. Jivan, **K. D. Neumann**, G. Villeret, J. Slater, B. Langston-Weber, C. Berkman, H. F. VanBrocklin. *22<sup>nd</sup> International Symposium on Radiopharmaceutical Sciences*, Dresden, Germany (2017).
20. [F-18]fluorobenzylamine: Automated synthesis of a practical prosthetic agent and subsequent incorporation into F-18-labeled radiopharmaceuticals. J. E. Blecha, **K. D. Neumann**, H. F. VanBrocklin. *22<sup>nd</sup> International Symposium on Radiopharmaceutical Sciences*, Dresden, Germany (2017).
21. Development of a high-throughput mouse model of mild TBI from dynamic head rotation. D. F. Shedd, A. Alshareef, J. R. Lukens, **K. D. Neumann**, M. B. Panzer. *National Neurotrauma Society Annual Meeting*, Toronto, Canada (2018).
22. Automated synthesis of [<sup>18</sup>F]Raltegravir through [<sup>18</sup>F]fluorobenzylamine. J. E. Blecha, **K. D. Neumann**, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Philadelphia, PA (2018).
23. Preparation of carbon-11-labeled surrogates of VX and sarin: Divergent radiosynthesis of <sup>11</sup>C-tracers by modification of reaction conditions. T. Hayes, J. E. Blecha, **K. D. Neumann**, C. M. Thompson, C.-K. Chao, K. Zinn, J. M. Gerdes, H. F. VanBrocklin. *Annual Society of Nuclear Medicine and Molecular Imaging Meeting*, Philadelphia, PA (2018).
24. Neuroinflammation Following Sport Concussion in Collegiate Athletes. **K. D. Neumann**, V. Seshadri, D. K. Broshek, J. Druzgal, J. C. Massey, B. Newman, X. D. Thompson, J. Reyes, K. S. McCauley, J. Patrie, J. R. Stone, B. Kundu, J. E. Resch, *World Molecular Imaging Congress*, Online congress only (2021)  
\*Oral abstract presented in Neuroscience.
25. Automated Radiosynthesis of [<sup>18</sup>F]AV-45 using Elixys FLEX/CHEM and PURE/FORM Synthesis System. *24<sup>th</sup> International Symposium on Radiopharmaceutical Sciences*, Nantes, France (2022).  
\*Abstract presented (William Miller, MS – trainee).

26. Automated synthesis of D-[3-<sup>11</sup>C]Alanine on the Sofie Biosciences Elixys Flex/Chem. S. R. Simpson, J. H. Wilde, K. S. McCauley, **K. D. Neumann**. *24th International Symposium on Radiopharmaceutical Sciences*, Nantes, France (**2022**).  
\*Abstract presented (Spenser Simpson, PhD – postdoctoral fellow).
27. Radiochemical Synthesis of [<sup>18</sup>F]fluoroanilines via Flow Reduction. J. H. Wilde, S. R. Simpson, **K. D. Neumann**. *24th International Symposium on Radiopharmaceutical Sciences*, Nantes, France (**2022**).  
\*Abstract presented (Justin Wilde, PhD – postdoctoral fellow)
28. A Novel Radiopharmaceutical, [<sup>18</sup>F]fluoromannitol, for Imaging Diverse Pathogenic Bacteria *in vivo*. S. R. Simpson, A. E. Kesterson, J. H. Wilde, Z. Qureshi, B. Kundu, M. P. Simons, **K. D. Neumann**. *World Molecular Imaging Congress*, Miami, FL (**2022**)  
\*Oral abstract presented by Spenser Simpson, PhD – postdoctoral fellow.
29. Novel PET Agent ([<sup>18</sup>F]Edaravone) Reveals ROS Levels in Sonodynamic-Treated Tumors. K. Nowak, S. R. Simpson, J. H. Wilde, C. M. Gorick, N. D. Sheybani, G. W. Miller, **K. D. Neumann**, R. J. Price. *8th International Symposium on Focused Ultrasound* (**2022**).
30. Increased neuroinflammation in special operators with a history of blast overpressure exposure. J. R. Stone, B. Avants, N. Tustison, J. Gill, E. Wilde, **K. D. Neumann**, L. Gladney, M. Kilgore, L. T. Modica, F. Bowling, C. Wilson, C. O. L. Detro, H. Linsenbardt, S. Ahlers. *J. Neurotrauma*, 39(11), A27-A28. (**2022**).

## 12. Presentations

### A. Oral Presentations

1. Invited Speaker at 2017 ESPMIS WMIC session in Philadelphia, PA. “Academia or Industry: Which Would You Choose?” 2017.
2. Johns Hopkins Infectious Diseases Seminar Series “Imaging Bacteria-Specific Metabolism with Positron Emission Tomography”, 2017.
3. Emily Couric Cancer Center Seminar Series. “Positron Emission Tomography. A Clinical Companion for Cancer Management”, 2017.
4. UVA Radiology Research Symposium “Gram Staining Bacteria *in vivo* with Positron Emission Tomography”, 2018.
5. UVA Molecular Imaging and Biology Seminar Series. “Dynamic Molecular Imaging: It All Starts at the Benchtop”, 2018.
6. Dynamic Molecular Imaging: It All Starts at the Benchtop. WRAIR/NMRC/UVA Imaging Working Session, 2018
7. Dynamic Molecular Imaging: It All Starts at the Benchtop. UVA Molecular Imaging Research Group, 2018.
8. Gram Staining Bacteria *In vivo* with Positron Emission Tomography. UVA/GE PET MRI workshop, 2018.
9. Positron Emission Tomography: Enabling a Theranostic Potential for Traumatic Brain Injury. UVA/GE/DOD/VA PET MRI workshop, 2018.
10. Combatting Bacterial Infection with Positron Emission Tomography. WRAIR NMRC Infectious Wounds Department, 2018.
11. Enhancing the Medical Practice Paradigm with Precision Diagnostics. UVA BRAIN Institute Workshop with Naval Special Warfare Group 4 in Virginia Beach, VA, 2018.
12. Combatting Bacterial Infection with Positron Emission Tomography. UVA/DOD workshop.
13. Dynamic Molecular Imaging: It All Starts at the Benchtop. UVA Radiology Department Research Week, 2018.

14. Precision Medicine and Molecular Imaging: It all starts at the benchtop. Siemens/DOD/VA/UVA Imaging Research Retreat, 2019.
15. Dynamic Molecular Imaging: It All Starts at the Benchtop. St. Jude Children's Research Hospital – Radiology Research Symposium, 2019.
16. Combatting Bacterial Infection with Imaging: It All Starts at the Benchtop. NIAID Workshop – Visualizing Dynamics of Tuberculosis, 2019.
17. Tips on Staying Sane in Science (Work-life Balance and Two-body Problem, Time Management). ESPMIS Invited Speaker – WMIC, virtual, 2020.
18. Translational Molecular Imaging for Cancer Research – July 2020 CRX UVA Cancer Center Programmatic Meeting, 2020.
19. Translational Molecular Imaging: It All Starts at the Benchtop. Virginia Alzheimer's Disease Center Research Symposium, 2020.
20. Combatting Bacterial Infection *in vivo* with PET. UCSF Infection Imaging Symposium, 2021.
21. Invited speaker – Navigating Academic Toxicity – WIMIN/EPMI Young Scientist Breakfast. World Molecular Imaging Congress, 2022.

### 13. Other Creative Products

#### Other Professional Activities

Ongoing and Previous Peer Review Contributions:

Science Translational Medicine reviewer  
 Molecular Imaging reviewer  
 Molecular Imaging and Biology reviewer  
 Journal of Labelled Compounds and Radiopharmaceuticals reviewer  
 Theranostics reviewer  
 ACS Chemical Neuroscience reviewer  
 ACS Infectious Disease reviewer  
 PLoS One reviewer  
 Neuropsychopharmacology reviewer  
 WMIC abstract reviewer, session moderator  
 SNMMI abstract reviewer, session moderator

WMIC Category Co-Chair “Neurosciences Probes and Targets”	2019
NIAID Workshop Co-Chair – Visualizing Dynamics of Tuberculosis	2019
WMIC Early Professional in Molecular Imaging (EPMI) Chair	2021-present
WMIC sub-Category secondary Chair; Infection and Inflammation Interest Group	2022
WMIC Session Moderator, Infection: Beyond the Tricorder – Illuminating Pathogens <i>in vivo</i>	2022
WMIC sub-Category Chair; Infection and Inflammation Interest Group	2023
Consultant for Teledyne-Isco	2017-present
St. Jude Children's Research Hospital National Graduate Student Symposium and Future Fellow Research Conference Reviewer – Radiological Sciences	2023

#### Public Service

Host of Chemistry Science Fair for Omaha Public Schools (Grades 6-8; Omaha, NE) students to learn and perform chemistry experiments.	2014-2015
UVA Fitness Instructor – Department of Athletics	2017-2022
Co-Chair Fluvanna County (VA) Community Garden. Produce and deliver 50% of our grown produce to the Keswick Virginia Food Pantry – Mt Olivet United Methodist Church.	2020-2022