

1) Personal Information

Zibo Li, Professor (Tenure), Director of Cyclotron and Radiochemistry Program
 Department of Radiology and Biomedical Research Imaging Center
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2) Education**Post-Doctoral Training in Molecular Imaging**

Molecular Imaging Program at Stanford (MIPS), Stanford University **2006-2008**
 Mentor: **Professor Xiaoyuan (Shawn) Chen**
 Experience: Molecular Imaging, Nanomedicine, IND application, cGMP

Universities Attended:

University of Virginia, Charlottesville, VA	Ph.D.	2006	Chemistry
Mentor: Professor Lin Pu			
Experience: Organic Synthesis, Fluorescence			
Univ of Sci and Tech of China (USTC), Hefei, China	B.Sc.	2001	Chemistry
Experience: Polymer Chemistry, Liquid crystal.			

3) Professional Experience/Employment History

University of North Carolina-Chapel Hill	Professor	2020-present
	Associate Professor	2014-2020
Experience: cGMP, eIND filing, basic research on cancer immunotherapy, neuroimaging, Nanomedicine, translational research etc.		
University of Southern California	Assistant Professor	2008-2014
Experience: cGMP, eIND filing, basic research on cancer, diabetes		
Siemens Medical Solutions USA, Inc.	Senior Scientist	2008
Experience: cGMP, eIND filing, translational research.		

4) Honors**After Graduation:**

1. 2013 TOP 10 POSTER AWARD (3rd place), Probes for Oncology - Society of Nuclear Medicine **2013**
2. 2011 Mark Tetalman Memorial Award - Society of Nuclear Medicine **2012**
3. 2012 TOP 10 POSTER AWARD (3rd place), Molecular Targeting Probes-Radioactive & Nonradioactive Track - Society of Nuclear Medicine **2012**
4. Breast Cancer Imaging: State of Art 2011 – Young Investigator Award. **2011**
5. Research Award-Margaret E. Early Medical Research Trust. **2009**
6. The Journal of Nuclear Medicine paper “PET/MRI dual-modality tumor imaging using arginine-glycine-aspartic (RGD)-conjugated radiolabeled iron oxide nanoparticles” was selected as one of the three best basic science papers for 2008 by the JNM editorial board and the Editor. **2009**
7. Institutional Research Grant - American Cancer Society **2009**
8. James H. Zumberge Faculty Research & Innovation Fund-University of Southern California. **2009**
9. SNM Travel Award-Society of Nuclear Medicine **2008**
10. Benedict Cassen Postdoctoral Fellowship - Society of Nuclear Medicine **2008**

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| 11. Radiopharmaceutical Sciences Council <u>Young Investigator Award</u> -Society of Nuclear Medicine | 2007 |
| 12. Young Professionals Committee <u>Best Basic Science Award</u> -Society of Nuclear Medicine | 2007 |
| 13. " <u>Dean's Fellowship</u> " from the Graduate School, Stanford University | 2006 |
| <i>During Graduate Study:</i> | |
| 14. " <u>Allen T. Gwathmey Memorial Award</u> " from the Graduate School, University of Virginia | 2005 |
| 15. " <u>Distinguished Poster Presentation</u> " from Chemistry Department, University of Virginia | 2004 |
| <i>During Undergraduate Study:</i> | |
| 16. " <u>Distinguished Undergraduate Student</u> " from University of Science and Tech. of China | 2000 |
| 17. " <u>Zhang Zongzhi scholarship</u> " from University of Science and Tech. of China | 1999 |
| 18. " <u>Distinguished Undergraduate Student</u> " from University of Science and Tech. of China | 1998 |
| 19. " <u>Distinguished Undergraduate Student</u> " from University of Science and Tech. of China | 1997 |

5) Bibliography and products of scholarship

Books and Chapters

- Li Z-B**, Chen X. "Application of Click Chemistry for Molecular Imaging." *Recent Advances of Bioconjugation Chemistry in Molecular Imaging* (ISBN 978-81-308-0210-7 Editor, Xiaoyuan Chen). Publisher: Research Signpost. **2008**:Page 29-52.
- Li Z-B**, Chen X. "MicroPET, microSPECT, and NIR fluorescence imaging of biomolecules in vivo" *Microfluids, Nanotechnologies, and Physical Chemistry (Science) in Separation, Detection, and Analysis of Biomolecules.* (Editor, James W. Lee) Publisher: Humana Press. *Methods Mol Biol.* **2009**;544:461-81
- Li Z-B**, Peter S. Conti. "Quantum dot conjugates for optical imaging of cancer". *Molecular Imaging Probes for Cancer Research*, chapter 16, **2012**: 483-517

Refereed Papers/Articles (*Corresponding author)

- Zürcher, N.R.[#], Walsh, E.C.[#], Phillips, R.D., Cernasov, P.M., Tseng, C.-E.J., Dharanikota, A., Smith, E., **Li, Z.**, Kinard, J.L., Bizzell, J.C., Greene, R.K., Dillon, D., Pizzagalli, D., Izquierdo-Garcia, D., Lalush, D., Truong, K., Hooker, J.M., and Dichter, G.S. (in press). A Simultaneous [¹¹C]Raclopride Positron Emission Tomography and Functional Magnetic Resonance Imaging Investigation of Striatal Dopamine Binding in Autism; *Translational Psychiatry*, **2021**, 11:33
- Nicholas E. S. Tay, Wei Chen, Alison Levens, Vincent A. Pistritto, Zeng Huang, Zhanhong Wu, **Zibo Li***, David A. Nicewicz*. Polarity-Reversed Nucleophilic Aromatic Substitution: ¹⁹F and ¹⁸F Arene Deoxyfluorination via Organic Photoredox Catalysis. *Nature Catalysis*, **2020**, 3: 734-742.
- Lauren M. Slosky, Yushi Bai, Krisztian Toth, Caroline Ray, Lauren K. Rochelle, Alexandra Badea, Rahul Chandrasekhar, Vladimir M. Pogorelov, Dennis M. Abraham, Namratha Atluri, Satyamaheshwar Peddibhotla, Michael P. Hedrick, Paul Hershberger, Patrick Maloney, Hong Yuan, **Zibo Li**, William C. Wetsel, Anthony B. Pinkerton, Lawrence S. Barak, Marc G. Caron. β -arrestin Biased Allosteric Modulator of NTSR1 Selectively Attenuates Addictive Behaviors. *Cell*, **2020**, 181:1364-1379.
- Douglas J. Hermes^{1#}, Ian R. Jacobs^{1#}, Megan C. Key¹, Alexis F. League¹, Barkha J. Yadav-Samudrala¹, Changqing Xu¹, Virginia D. McLane², Sara R. Nass², Rick B. Meeker³, Bogna Ignatowska-Jankowska⁴, Aron H. Lichtman², **Zibo Li**⁵, Zhanhong Wu⁵, Hong Yuan⁵, Pamela E. Knapp^{2,6}, Kurt F. Hauser^{2,6}, and Sylvia Fitting¹. Escalating morphine dosing in HIV-1 Tat transgenic mice with sustained Tat exposure reveals an allostatic shift in neuroinflammatory regulation accompanied by increased neuroprotective

- non-endocannabinoid lipid signaling molecules and amino acids. *Journal of Neuroinflammation*, **2020**, 17:345
- Zhang T, Cai J, Wang H, Wang M, Yuan H, Wu Z, Ma X,* **Li Z***. RXH-Reactive ¹⁸F-Vinyl Sulfones as Versatile Agents for PET Probe Construction. *Bioconjug Chem.* **2020**, 31(11):2482-2487.
 - Wang L, White AR, Chen W, Wu Z, Nicewicz DA,* **Li Z***. Direct Radiofluorination of Arene C-H Bonds via Photoredox Catalysis Using a Peroxide as the Terminal Oxidant. *Org Lett.* **2020**, 22(20):7971-7975.
 - Lin Bai; Fangchao Jiang; Renjie Wang; Chaebin Lee; Hui Wang; Weizhong Zhang; Wen Jiang; Dandan Li; Bin Ji; **Zibo Li**; Shi Gao; Jin Xie, Qingjie Ma. Ultrathin Gold Nanowires to Enhance Radiation Therapy. *Journal of Nanobiotechnology*, **2020**, 18(1):131.
 - Matthew J. Haney, Yuling Zhao, Jimmy Fay, Hwang Duhyeong, Mengzhe Wang, Hui Wang, **Zibo Li**, Yueh Z. Lee, Mohan Kumar Muthu Karuppan, Nazira El-Hage, and Elena V. Batrakova. Genetically-modified Macrophages Accomplish Targeted Gene Delivery to the Inflamed Brain in Transgenic Parkin Q311X(A) Mice. *Scientific Reports*, 2020 Jul 16;10(1):11818. doi: 10.1038/s41598-020-68874-7..
 - Wang M, Wang H, Niu CQ, Zhang T, Wu Z, **Li Z**. Tetrazine-TCO Ligation: A Potential Simple Approach to Improve Tumor Uptake through Enhanced Blood Circulation. *Bioconjug Chem.* **2020**. 31(7):1795-1803.
 - Wang R, Cao Z, Wei L, Bai L, Wang H, Zhou S, Zhan S, Ji B, **Li Z**, Gao S, Xie J, Ma Q. Barium tungstate nanoparticles to enhance radiation therapy against cancer. *Nanomedicine.* **2020**:102230. doi: 10.1016/j.nano.2020.102230. Online ahead of print.
 - Huijuan Feng, He Zhang, Mengzhe Wang, Raghu Vannam, Hui Wang, Xuefeng Yan, Wei Ouyang,* Xinqiao Jia, Joseph Fox,* **Zibo Li***. Improving Tumor-to-Background contrast through hydrophilic tetrazines: the construction of ¹⁸F labeled PET agents targeting non-small cell lung carcinoma. *Chemistry - A European Journal.* **2020**, 26(21):4690-4694.
 - Amar M. Singh, Liang Zhang, John Avery, Amelia Yin, Yuhong Du, Hui Wang, **Zibo Li**, Haian Fu, Hang Yin, Stephen Dalton. Human beige adipocytes generated from adipose-derived stem cells have utility for therapeutic development. *Nature Communications*, **2020**, in press.
 - Giulia Fragola, Angela M. Mabb, Bonnie Taylor-Blake, Jesse K. Niehaus, William D. Chronister, Hanqian Mao, Jeremy M. Simon, Hong Yuan, **Zibo Li**, Michael J. McConnell, Mark J. Zylka. Deletion of Topoisomerase 1 in excitatory neurons causes genomic instability and early onset neurodegeneration. *Nature Communications*, **2020**, in press.
 - Yuxiao Xia, Chengrun Zeng, Yanhong Zhao, Xinyi Zhang, **Zibo Li***, Yue Chen.* Comparative evaluation of ⁶⁸Ga-labelled TATEs: the impact of chelators on imaging. *EJNMMI Research.* **2020**, doi: 10.1186/s13550-020-00620-6.
 - Wei Chen, Zeng Huang, Nicholas E. S. Tay, Benjamin Giglio, Mengzhe Wang, Hui Wang, Zhanhong Wu, David A. Nicewicz,* **Zibo Li***. Direct Arene C-H Fluorination with ¹⁸F⁻ via Metal-free Organic Photoredox Catalysis. *Science*, **2019**, 364(6446):1170-1174.
 - Tingting He, Mengzhe Wang, Hui Wang, Hongpei Tan, Yongxiang Tang, Eric Smith, Zhanhong Wu, Weihua Liao*, Shuo Hu*, Zibo Li*. Evaluation of Neurotensin Receptor 1 as potential biomarker for prostate cancer theranostic use. *EJNMMI*, **2019**, 46:2199-2207.
 - Xiaofen Ma, Mengzhe Wang, Hui Wang, Tao Zhang, Zhanhong Wu, Mariia V. Sutton, Vladimir V. Popik, Guihua Jiang,* **Zibo Li***. Development of ¹⁸F-labeled NT-PSMA heterodimer for prostate cancer imaging. *Bioconjugate Chemistry*, **2019**, doi: 10.1021/acs.bioconjchem.9b00252.
 - Benjamin C. Giglio, Hui Wang, Xuefeng Yan, **Zibo Li**. Synthesis and Initial Evaluation of Radioactive 5-I- α -Methyl-Tryptophan: A Trp Based Agent Targeting IDO-1. *MedChemComm*, **2019**, 10(5):814-816.

19. Jiang W, Yin L, Chen H, Paschall AV, Zhang L, Fu W, Zhang W, Todd T, Yu KS, Zhou S, Zhen Z, Butler M, Yao L, Zhang F, Shen Y, **Li Z**, Yin A, Yin H, Wang X, Avci FY, Yu X, Xie J. NaCl Nanoparticles as a Cancer Therapeutic. *Adv Mater.* **2019**;31(46):e1904058. doi: 10.1002/adma.201904058.
20. Wang H, Wang M, Chansaenpak K, Liu Y, Yuan H, Xie J, Yin H, Branca RT, **Li Z**, Wu Z. A Novel PET Probe for Brown Adipose Tissue Imaging in Rodents. *Mol Imaging Biol.* **2019**. doi: 10.1007/s11307-019-01426-2.
21. Long T, Yang N, Zhou M, Chen D, Li Y, Li J, Tang Y, Liu Z, **Li Z**, Hu S. Clinical Application of ¹⁸F-AIF-NOTA-Octreotide PET/CT in Combination With ¹⁸F-FDG PET/CT for Imaging Neuroendocrine Neoplasms. *Clin Nucl Med.* **2019**: 44(6):452-458.
22. Huamin Hu, Xuefeng Yan, Hui Wang, Joji Tanaka, Mengzhe Wang, Wei You,* **Zibo Li*** Perfluorocarbon-based O₂ nanocarrier for efficient photodynamic therapy. *Journal of Materials Chemistry B.* **2019**, 7,1116-1123. ([the most popular articles published in Journal of Materials Chemistry B in 2019](#))
23. Wang M, Vannam R, Lambert WD, Xie Y, Wang H, Giglio B, Ma X, Wu Z, Fox J,* **Li Z**.* Hydrophilic ¹⁸F-labeled trans-5-oxocene (oxoTCO) for efficient construction of PET agents with improved tumor-to-background ratios in neurotensin receptor (NTR) imaging. *Chem Commun (Camb).* **2019**;55(17):2485-2488.
24. Weizhong Zhang, Mengzhe Wang, Wei Tang, Ru Wen, Shiyi Zhou, Chaebin Lee, Hui Wang, Wen Jiang, Ian Delahunty, Zipeng Zhen, Hongmin Chen, Matthew Chapman, Elizabeth Howerth, Houjian Cai, **Zibo Li**,* Jin Xie.* Nanoparticle-laden Macrophages for Tumor-Tropic Drug Delivery. *Advanced Materials.* **2018**, doi: 10.1002/adma.201805557.
25. C. Mao, P. Qu, M. J. Miley, Y. Zhao, **Z. Li*** and X. Ming* P-glycoprotein Targeted Photodynamic Therapy of Chemoresistant Tumors using Recombinant Fab Fragment Conjugates, *Biomater. Sci.*, **2018**, 6(11):3063-3074.
26. Mengzhe Wang, Christopher D. McNitt, Hui Wang, Xiaofen Ma,* Sarah Scarry, Zhanhong Wu, Vladimir V. Popik,* and **Zibo Li**.* The efficiency of ¹⁸F labelling of prostate specific membrane antigen ligand via strain-promoted azide-alkyne reaction: reaction speed versus hydrophilicity. *Chem Commun (Camb).* **2018**;54:7810-7813.
27. Mao C, Zhao Y, Li F, **Li Z**, Tian S, Debinski W, Ming X. P-glycoprotein targeted and near-infrared light-guided depletion of chemoresistant tumors. *J Control Release.* **2018**; 286:289-300.
28. Wang, Mengzhe; Zhang, He; Wang, Hui; Feng, Huijuan; Deng, Huaifu; Wu, Zhanhong; Lu, Hongjian;* **Li, Zi-Bo**.* Development of [¹⁸F]AIF-NOTA-NT as PET Agents of Neurotensin Receptor-1 Positive Pancreatic Cancer. *Mol Pharm.* **2018**;15:3093-3100.
29. Sheng Song; Lulu Jiang; Esteban Oyarzabal; Belinda Wilson; **Zibo Li**; Yen-Yu Ian Shih; Qingshan Wang; Jau-Shyong Hong. Loss of brain norepinephrine elicits neuroinflammation-mediated oxidative injury and selective caudo-rostral neurodegeneration. *Mol Neurobiol.* **2018**. 56(4):2653-2669.
30. Deng H, Wang H, Zhang H, Wang M, Giglio B, Ma X, Jiang, Yuan H, Wu Z, **Li Z**. Imaging Neurotensin Receptor in Prostate Cancer With ⁶⁴Cu-Labeled Neurotensin Analogs. **2017**, *Molecular Imaging*, doi: 10.1177/1536012117711369.
31. Wang M, Mao C, Wang, H, Ling X, Wu Z, **Li Z***, Ming X*. Molecular Imaging of P-glycoprotein in Chemoresistant Tumors using a Dual-Modality PET/Fluorescence Probe. **2017**, *Molecular Pharmaceutics*, 14(10):3391-3398.
32. Vabre B, Chansaenpak K, Wang M, Wang H, **Li Z***, Gabbaï FP*. Radiofluorination of a NHC-PF₅ adduct: toward new probes for ¹⁸F PET imaging. *Chem Commun.* **2017**; 53(62):8657-8659.

33. Yin X, Wang M, Wang H, Deng H, He Q, Tan Y, Zhu Z, Wu Z, Hu S,* **Li Z***. "Evaluation of Neurotensin Receptor1 as a Potential Imaging Target in Pancreatic Ductal Adenocarcinoma". *Amino Acids*. **2017**, 49(8):1325-1335.
34. K. Chansaenpak, M. Wang, H. Wang, B. C. Giglio, F. P. Gabbai, Z. Wu, **Z. Li**, "Preparation of [¹⁸F]-NHC-BF₃ conjugates and their applications in PET imaging" *RSC Adv*. **2017**, 7, 17748-17751.
35. B. C. Giglio, H. Fei, M. Wang, H. Wang, L. He, H. Feng, Z. Wu, H Lu*, **Z Li***. Synthesis of 5-[¹⁸F]Fluoro- α -methyl Tryptophan: New Trp Based PET Agents *Theranostics*, **2017**; 7(6): 1524-1530
36. Yang B, Chansaenpak K, Wu H, Zhu L, Wang M, **Li Z***, Lu H*. Silver-promoted (radio)fluorination of unsaturated carbamates via a radical process. *Chem Commun*. **2017**; 53(24): 3497-3500.
37. Zhen Z, Tang W, Wang M, Zhou S, Wang H, Wu Z, Hao Z, **Li Z**, Liu L, Xie J. Protein Nanocage Mediated Fibroblast-Activation Protein Targeted Photoimmunotherapy To Enhance Cytotoxic T Cell Infiltration and Tumor Control. *Nano Lett*. **2017** Feb 8;17(2):862-869
38. Wang GD, Nguyen HT, Chen H, Cox PB, Wang L, Nagata K, Hao Z, Wang A, **Li Z**, Xie J. X-Ray Induced Photodynamic Therapy: A Combination of Radiotherapy and Photodynamic Therapy. *Theranostics*. **2016**;6(13):2295-2305
39. Ma X, Tian J, Wu Z, Zong X, Dong J, Zhan W, Xu Y, **Li Z***, Jiang G*. Spatial Disassociation of Disrupted Functional Connectivity for the Default Mode Network in Patients with End-Stage Renal Disease. *PLoS One*. **2016**;11(8):e0161392
40. Chansaenpak K, Wang H, Wang M, Giglio B, Ma X, Yuan H, Hu S,* Wu Z,* **Li Z**. Synthesis and evaluation of [¹⁸F]-ammonium BODIPY dyes as potential PET agents for myocardial perfusion imaging. *Chem Eur J*. **2016**, 22(34):12122-9.
41. He Z, Wan X, Schulz A, Bludau H, Dobrovolskaia A. M, Stern T. S, Montgomery A. S, Yuan H, **Li Z**, Alakhova D, Sokolsky M, Darr B. D, Perou M. C, Jordan R, Luxenhofer R, Kabanov V. A. A High Capacity Polymeric Micelle of Paclitaxel: Implication of High Dose Drug Therapy to Safety and In Vivo Anti-Cancer Activity. *Biomaterials*, **2016**, 101: 296-309.
42. Wang M, Svatunek D, Rohlfing K, Liu Y, Wang H, Giglio B, Yuan H, Wu Z, **Li Z***, Joseph Fox*. Conformationally Strained *trans*-Cyclooctene (sTCO) Enables the Rapid Construction of ¹⁸F-PET Probes via Tetrazine Ligation. *Theranostics*, **2016**, 6(6):887-95.
43. Chansaenpak K, Wang M, Liu S, Conti PS, **Li Z***, Gabbai F*. Efficient construction and *in vivo* evaluation of [¹⁸F]-indomethacin conjugated zwitterionic aryltrifluoroborates as potential PET probes for imaging COX-2 expression. *RSC Adv*. **2016**, 6, 23126-23133.
44. Zhu W, Yao S, Xing H, Zhang H, Tai Y, Zhang Y, Liu Y, Ma Y, Wu X, Wang H, **Li Z**, Wu Z, Zhu Z, Li F, Huo L. Biodistribution and Radiation Dosimetry of the Enterobacteriaceae-Specific Imaging Probe [¹⁸F]Fluorodeoxysorbitol Determined by PET/CT in Healthy Human Volunteers. *Mol Imaging Biol*, **2016**; 18(5):782-7.
45. Tang W, Zhen Z, Chuang YJ, Zhang W, Wang GD, Todd T, Lin X, **Li Z***, Xie J*. Red blood cell-facilitated photodynamic therapy for cancer treatment. *Advanced functional material*, **2016**, 26(11): 1757-1768.
46. Yao S, Xing H, Zhu W, Wu Z, Zhang Y, Ma Y, Liu Y, Huo L, Zhu Z, **Li Z**, Li F. Infection Imaging with ¹⁸F-FDS and First-in-Human Evaluation. *Nucl Med Biol*, **2016**; 43(3):206-14.
47. Yuan H, **Li Z**, Chang S. "Hypoxia Image Guided Radiation Therapy: Current Status and Major Challenges". *Austin J Nucl Med Radiother*, **2016**, 3(1): 1014-1022.
48. Fang J, Xiao L, Joo KI, Liu Y, Zhang C, Liu S, Conti PS, **Li Z**, Wang P. A potent immunotoxin targeting fibroblast activation protein for treatment of breast cancer in mice. *Int J Cancer*. **2016**, 138(4):1013-23.

49. Deng H, Wang H, Wang M, **Li Z**, Wu Z. Synthesis and Evaluation of ^{64}Cu -DOTA-NT-Cy5.5 as a Dual-Modality PET/Fluorescence Probe to Image Neurotensin Receptor-Positive Tumor. *Mol Pharm*. **2015**, 12(8):3054-61.
50. Zhou B, Wang H, Liu R, Wang M, Deng H, Giglio BC, Gill PS, Shan H*, **Li Z***. PET Imaging of DII4 Expression in Glioblastoma and Colorectal Cancer Xenografts Using ^{64}Cu -Labeled Monoclonal Antibody 61B. *Mol Pharm*. **2015**, 12(10):3527-34.
51. Chansaenpak K, Wang M, Wu Z, Zaman R, **Li Z***, Gabbai FP*. [^{18}F]-NHC- BF_3 adducts as water stable radio-prosthetic groups for PET imaging. *Chem Commun*. **2015**, 51(62):12439-42.
52. Wang H, Li D, Liu S, Liu R, Yuan H, Krasnoperov V, Shan H*, Conti PS, Gill P, **Li Z***. microPET imaging of pancreatic cancer xenografts using ^{64}Cu labeled monoclonal antibody MAb159. *J Nucl Med*, **2015**, 56(6):908-13.
53. Deng H, Wang H, Li Z. Matching Chelators to Radiometals for Positron Emission Tomography Imaging-Guided Targeted Drug Delivery. *Current Drug Targets*. **2015**, 26(3):435-42.
54. Selvaraj R, Giglio B, Liu S, Wang H, Wang M, Yuan H, Chintala RS, Yap L, Conti PS, Fox JM,* **Li Z.*** Improved Metabolic Stability for ^{18}F PET Probes Rapidly Constructed via Tetrazine *trans*-Cyclooctene Ligation. *Bioconjugate Chemistry*, **2015**, 26(3):435-42.
55. Hu H, Li D, Liu S, Wang M, Moats R, Conti PS, **Li Z***. Integrin $\alpha_2\beta_1$ targeted $\text{GdVO}_4\text{:Eu}$ ultrathin nanosheet for multimodal PET/MR imaging. *Biomaterials*. **2014**, 35(30):8649-58.
56. Liu S, Li D, Guo J, Canale N, Li X, Liu R, Krasnoperov V, Gill PS, Conti PS, Shan H*, Li Z*. Design, Synthesis, and Validation of Axl-Targeted Monoclonal Antibody Probe for microPET Imaging in Human Lung Cancer Xenograft. *Mol Pharm*. **2014**, 11(11):3974-9. PMID: 24224514.
57. Mohd Janib S, Gustafson JA, Minea RO, Swenson SD, Liu S, Pastuszka MK, Lock LL, Cui H, Markland Jr FS, Conti PS, **Li Z**, MacKay JA. Multimeric disintegrin protein polymer fusions that target tumor vasculature. *Biomacromolecules*, **2014**, 15(7):2347-58. PMID: 24098058.
58. Wu Z, Liu S, Nair I, Omori K, Scott S, Todorov I, Shively JE, Conti PS, **Li Z***, Kandeel K*. ^{64}Cu Labeled Sarcophagine Exendin-4 for MicroPET Imaging of Glucagon Like Peptide-1 Receptor Expression. *Theranostics*, **2014**, 4(8):770-7. PMID: 24063975.
59. Liu S, Li D, Zhang Z, Prakash GKS, Conti PS, **Li Z***. Efficient synthesis of fluorescent-PET probes based on [^{18}F]bodipy dye. *Chem Commun*, **2014**, 50(55):7371-3.
60. Liu S, **Li Z***, Conti PS. Development of multi-functional chelators based on sarcophagine cage. *Molecules*, **2014**, 19(4):4246-55.
61. Hu H, Liu S, Li D, Wang M, Moats R, Shan H, Conti PS, **Li Z***. Synthesis of lanthanide-doped GdVO_4 ultrathin nanosheet with great optical and paramagnetic properties for FRET biodetection and *in vivo* MR Imaging. *J Mater Chem B*, **2014**, 2, 3998-4007.
62. Wu Z, Li L, Liu S, Yakushijin F, Yakushijin K, Horne D, Conti PS, **Li Z***, Kandeel F, Shively J. E*. Facile Preparation of a Thiol-Reactive ^{18}F -Labeling Agent and Synthesis of ^{18}F -DEG-VS-NT for PET Imaging of a Neurotensin Receptor Positive Tumor. *J Nucl Med*, **2014**, 55(7):1178-1184.
63. Aluri RS, Shi P, Gustafson JA, Wang W, Lin YA, Cui H, Liu S, Conti PS, Li Z, Hu PS, Epstein AL,^ MacKay JA. A Hybrid Protein Polymer Nanoworm Potentiates Apoptosis Better than a Monoclonal Antibody. *ACS Nano*, **2014**; 8(3):2064-76. PMID: 24004287.
64. Hu L, Bauer N, Knight L, **Li Z**, Liu S, Anderson C, Conti P, Sutcliffe J. Characterization and evaluation of ^{64}Cu labeled A20FMDV2 conjugates for imaging the integrin $\alpha_v\beta_6$. *Mol Imaging Biol*, **2014**; 16(4):567-77.

65. Li D, Liu S, Liu R, Park R, Yu H, Krasnoperov V, Gill PS, **Li Z**,* Shan H,* Conti PS. Axl-Targeted Cancer Imaging with Humanized Antibody h173. *Mol Imaging Biol*, **2014**; 16(4):511-8.
66. Liu S, Li D, Shan H, Gabbaï FP, **Li Z**,* Conti PS. Evaluation of ¹⁸F-Labeled BODIPY Dye as Potential PET Agents for Myocardial Perfusion Imaging. *Nucl Med Biol*, **2014**, 41(1):120-6.
67. Li D, Liu S, Liu R, Zhou Y, Park R, Naga K, Krasnoperov V, Gill PS, **Li Z**,* Shan H,* Conti PS. EphB4-Targeted Imaging with Antibody h131, h131-F(ab')₂ and h131-Fab. *Mol Pharm*, **2013**, 10(12), 4527-4533. PMID: PMC3888823.
68. Jang JK, Khawli LA, Park R, Wu BW, **Li Z**, Canter D, Conti PS, Epstein AL. Cytoreductive Chemotherapy Improves the Biodistribution of Antibodies Directed against Tumor Necrosis in Murine Solid Tumor Models. *Mol Cancer Ther*. **2013**, 12(12):2827-36. PMID: PMC3929394.
69. Liu S, Conti P, **Li Z**.* PET/Fluorescence Imaging: An Opportunity to Integrate Diagnosis with Surgery. *OMICS Journal of Radiology*, **2013**, 2:e115.
70. Li D, Liu S, Shan H, Conti P, **Li Z**.* Urokinase Plasminogen Activator Receptor (uPAR) Targeted Nuclear Imaging and Radiotherapy. *Theranostics*, **2013**, 3(7):507-15. PMID: PMC3706694.
71. Joo KI, Xiao L, Liu S, Liu Y, Lee CL, Conti PS, Wong MK, **Li Z**,* Wang P.* In vitro and In vivo Evaluation of Stable Liposomal Nanoparticles for Controlled Delivery of Anticancer Drugs. *Biomaterials*, **2013**, 34(12):3098-109. PMID: PMC3995748.
72. Liu R, Li X, Gao W, Zhou Y, Wey S, Mitra SK, Krasnoperov V, Dong D, Liu S, Li D, Zhu G, Louie S, Conti PS, **Li Z**, Lee AS, Gill PS. Monoclonal Antibody against Cell Surface GRP78 as a Novel Agent in Suppressing PI3K/AKT Signaling and Tumor Growth. *Clin Cancer Res*, **2013**, 19(24):6802-11. PMID: PMC4151476.
73. Liu S, Lin TP, Li D, Leamer L, Shan H, **Li Z**,* Gabbaï FP,* Conti PS. Lewis acid-assisted isotopic ¹⁸F-¹⁹F exchange in BODIPY dyes: Facile generation of Positron Emission Tomography/Fluorescence dual modality agents for tumor imaging. *Theranostics* **2013**; 3(3): 181-189. PMID: PMC3590587.
74. Liu S, Li D, Park R, Liu R, Xia Z, Guo J, Krasnoperov V, Gill PS, **Li Z**,* Shan H,* Conti PS. PET Imaging of Colorectal and Breast Cancer by Targeting EphB4 Receptor with ⁶⁴Cu-Labeled hAb47 and hAb131 antibodies. *J Nucl Med*, **2013**, 54(7):1094-100. (Featured in *Global Medical Discovery*: <http://globalmedicaldiscovery.com/key-scientific-articles/pet-imaging-colorectal-breast-cancer-targeting-ephb4-receptor-64cu-labeled-hab47-hab131-antibodies/>)
75. Li D, Liu S, Liu R, Park R, Hughes L, Krasnoperov V, Gill PS, **Li ZB**,* Shan H,* Conti PS. Targeting EphB4 receptor for cancer diagnosis and therapy monitoring. *Mol Pharm*, **2013**, 10(1):329-36. PMID: PMC3540204.
76. Wu Z, Liu S, Hassink M, Nair I, Park R, Li L, Todorov I, Fox JM, **Li ZB***, Shively JE, Conti PS, Kandeel K*. "Development and Evaluation of ¹⁸F-TTCO-Cys⁴⁰-Exendin-4: A novel PET probe for transplanted islets imaging", *J Nucl Med*, **2013**, 54(2):244-51.
77. Liu S, Ryan P, Conti PS, **Li ZB**. "Kit like" ¹⁸F labeling method for synthesizing PET probes based on RGD peptide. *American Journal of Nuclear Medicine and Molecular Imaging*, **2013**;3(1):97-101. PMID: PMC3545367.
78. Liu S, Hassink M, Selvaraj R, Yap LP, Park R, Wang H, Chen X, Fox JM*, **Li ZB***, Conti PS. "Efficient ¹⁸F labeling of cysteine containing peptides and proteins using the tetrazine-*trans*-cyclooctene ligation". *Molecular Imaging*, **2013**, 12(2):121-8. PMID: PMC4027965.
79. Janib SM, Liu S, Park R, Pastuszka M, Shi P, Lin YA, Cui H, Conti PS, **Li ZB***, MacKay JA*. "Kinetic quantification of protein polymer nanoparticles using non-invasive imaging". *Integrative Biology*, **2013**, 5(1):183-94. PMID: PMC3762326.

80. Li ZB,* Chansaenpak K, Liu S, Wade CR, Zhao H, Conti PS, Gabbaï FP.* “Harvesting [¹⁸F]-fluoride ions in water via direct ¹⁸F-¹⁹F isotopic exchange: Radiofluorination of zwitterionic aryltrifluoroborates and *in vivo* stability studies”, *MedChemComm*, **2012**, 3:1305-8.
81. Huang CW, Li ZB*, Conti PS. “Radioactive Smart Probe for Corrected Matrix Metalloproteinase Imaging”. *Bioconjugate Chemistry*, **2012**;23(11):2159-67.
82. Chen K, Li ZB, Conti PS. “Microwave-assisted one-pot radiosynthesis of 2'-deoxy-2'-[¹⁸F]fluoro-5-methyl-1-β-D-arabinofuranosyluracil ([¹⁸F]-FMAU)”, *Nucl Med Biol*, **2012**;39(7):1019-25.
83. Liu S, Huang CW, Yap LP, Park R, Li ZB*, Conti PS*. “The efficient synthesis and biological evaluation of novel bi-functionalized Sarcophagine for ⁶⁴Cu radiopharmaceuticals”, *Theranostics*, **2012**, 2(6):589-96. PMID: PMC3381345.
84. Liu S, Li D, Huang CW, Yap LP, Park R, Shan H, Li ZB*, Conti PS*. “Efficient Construction of PET/Fluorescence Probe Based on Sarcophagine Cage: an Opportunity to Integrate Diagnosis with Treatment”, *Mol Imaging Biol*, **2012**;14(6):718-24.
85. Jadvar H, Yap L-P, Park R, Li Z, Chen K, Hughes L, Kouhi A, Conti PS. “Preclinical Evaluation of [¹⁸F]-2'-fluoro-5-methyl-1-beta-D-arabinofuranosyluracil (¹⁸F-FMAU) in Mouse Models of Implanted Human Prostate Cancer Xenografts: Preliminary Observations”. *Molecular Imaging*, **2012**, 11(5):426-32. PMID: PMC3443080.
86. Li D, Shan H, Conti PS, Li ZB*. “PET imaging of metabotropic glutamate receptor subtype 5 (mGluR5)”, *American Journal of Nuclear Medicine and Molecular Imaging*, **2012**, 2(1):29-32.
87. Li ZB*, Jin Q, Huang CW, Dasa S, Chen LH*, Yap LP, Liu S, Cai H, Park R, Conti PS. “Trackable and Targeted Phage as Positron Emission Tomography (PET) Agent for Cancer Imaging”. *Theranostics* **2011**; 1: 371-380. PMID: PMC3248641.
88. Wu ZH, Todorov I, Li L, Bading JR, Li ZB, Nair I, Ishiyama K, Colcher D, Conti PS, Fraser SE, Shively JE, Kande F. “*In vivo* imaging of transplanted islets with ⁶⁴Cu-DO3A-VS-Cys⁴⁰-Exendin-4 by targeting GLP-1 receptor”, *Bioconjugate Chemistry*, **2011**;22(8):1587-94.
89. Li ZB*, Lin TP, Liu S, Huang CW, Hudnall TW, Gabbaï FP*, Conti PS. “Rapid aqueous [¹⁸F]-labeling of a bodipy dye for positron emission tomography/fluorescence dual modality imaging”, *Chem Commun*, **2011**, 47(33):9324-6.
90. Liu S#, Li Z-B#, Yap LP, Huang CW, Park R, Conti PS. “Efficient preparation and biological evaluation of a novel multivalency bifunctional chelator for ⁶⁴Cu radiopharmaceuticals”, *Chemistry - A European Journal*, **2011**;17(37):10222-5.
91. Huang CW, Li Z-B, Conti PS. “In Vivo Near-Infrared Fluorescence Imaging of Integrin α₂β₁ in Prostate Cancer with Cell Penetrating Peptide (CPP)-Conjugated DGEA Probe”, *J Nucl Med*, **2011**, 52(12):1979-86.
92. Selvaraj R, Liu S, Hassink M, Huang CW, Yap LP, Park R, Fox JM*, Li Z-B*, Conti PS. “Tetrazine-trans-cyclooctene (TTCO) ligation for the rapid construction of integrin α_vβ₃ targeted PET tracer based on RGD peptide”, *Bioorg Med Chem Lett*, **2011**, 21, 5011-4. PMID: PMC3230322. (Invited contribution for Special issue in honor of Carolyn Bertozzi's 2011 Tetrahedron Young Investigator Award).
93. Huang C-W, Li Z-B, Cai H-C, Shahinian AH, Conti PS. “Biological stability evaluation of the α₂β₁ receptor imaging agents: ⁶⁴Cu-diamsar-DGEA and ⁶⁴Cu-DOTA-DGEA”, *Bioconjugate Chemistry*, **2011**, 22, 256-263.
94. Huang C-W, Li Z-B, Cai H-C, Chen K, Shahinian AH, Conti PS. “Design, Synthesis and Validation of Integrin α₂β₁ targeted probe for microPET Imaging of Prostate Cancer”, *Eur J Nucl Med Mol Imaging*, **2011**, 38, 1313-22.

95. **Li Z-B**, Cai H-C, Conti PS. "Improved synthesis of 2'-deoxy-2'-[¹⁸F]fluoro-5-methyl-1-β-D-arabinofuranosyluracil ([¹⁸F]FMAU)", *Current Radiopharmaceuticals*, **2011**, 4, 24-30.
96. Cai H-C, **Li Z-B**, Conti PS. "The improved syntheses of 5-substituted 2'-[¹⁸F]fluoro-2'-deoxy-arabinofuranosyluracil derivatives ([¹⁸F]FAU, [¹⁸F]FEAU, [¹⁸F]FFAU, [¹⁸F]FCAU, [¹⁸F]FBAU, and [¹⁸F]FIAU) using a multi-step-one-pot strategy", *Nucl Med Biol*, **2011**, 38, 659-66.
97. Cai H-C, **Li Z-B**, Park R, Conti PS. "⁶⁴Cu Labeled AmBaSar-RGD2 for micro-PET Imaging of Integrin α_vβ₃ Expression", *Current Radiopharmaceuticals*, **2011**, 4, 68-74.
98. **Li Z-B**, Cai H-C, Conti PS. "Automated synthesis of 2'-deoxy-2'-[¹⁸F]fluoro-5-methyl-1-β-D-arabinofuranosyluracil (¹⁸F-FMAU) using one reactor radiosynthesis module", *Nucl Med Biol*, **2011**, 38, 201-206.
99. Huang C-W, **Li Z-B**, Cai H-C, Shahinian AH, Conti PS. "Novel α₂β₁ Integrin Targeted Peptide Probes for Prostate Cancer Imaging". *Molecular Imaging*, **2011**, 10, 284-94.
100. **Li Z-B**, Conti PS. "Radiopharmaceutical chemistry for positron emission tomography", *Advanced Drug Delivery Reviews*, **2010**, 62, 1031-1051.
101. MacKay JA, **Li Z-B**. "Theranostic agents that co-deliver therapeutic and imaging agents?", *Advanced Drug Delivery Reviews*, **2010**, 62, 1003-1004.
102. **Li Z-B***, Cai H, Hassink M, Blackman ML, Brown R, Conti PS, Fox JM*. "Tetrazine-trans-Cyclooctene Ligation for the Rapid Construction of F-18 Labeled Probes", *Chem Commun*, **2010**, 46, 8043-8045. PMID: PMC3230320. (Highlighted in *Nature Chemistry*: www.nature.com/nchem/reshigh/2010/1010/full/nchem.895.html).
103. Cai H-C, **Li Z-B**, Huang C-W, Shahinian AH, Wang H, Park R, Conti PS. "Evaluation of Copper-64 Labeled AmBaSar Conjugated Cyclic RGD Peptide for Improved MicroPET Imaging of Integrin α_vβ₃ Expression". *Bioconjugate Chemistry*, **2010**, 21, 1417-24.
104. Cai H-C, **Li Z-B**, Huang C-W, Park R, Shahinian AH, Conti PS. "An improved synthesis and biological evaluation of a new caged-like bifunctional chelator 4-((8-amino-3, 6, 10, 13, 16, 19-hexaazabicyclo [6.6.6] icosane-1-ylamino) methyl) benzoic acid (AmBaSar) for ⁶⁴Cu-radiopharmaceuticals". *Nucl Med Biol*, **2010**, 37, 57-65.
105. **Li Z-B#**, Chen K#, Wang H, Chen X. "microPET Imaging of Tumor and Cell Trafficking Using a ⁶⁴Cu-Labeled PEI". *Mol Imaging Biol*, **2009**, 11, 415-423.
106. Cao F#, **Li Z-B#**, Chen K, Wang H, Cai W, Chen X, Wu J. "PET Imaging of Angiogenesis Formation in Teratoma from Human Embryonic Stem Cells". *Cancer Res*, **2009**, 69, 2709-13. PMID: PMC2866177.
107. Niu G, **Li Z-B**, Xie J, Le Q-T, Chen X. "PET Imaging Antibody Delivery in EGFR Positive Head-neck Squamous Cell Carcinoma Models". *J Nucl Med*, **2009**, 50, 1116-1123.
108. Niu G, **Li Z-B**, Cao Q, Chen X. "Monitoring therapeutic response of human ovarian cancer to 17-DMAG by noninvasive PET imaging with ⁶⁴Cu-DOTA-trastuzumab". *Eur J Nucl Med Mol Imaging*, **2009**, 36, 1510-1509. PMID: PMC3596115.
109. Liu Z, **Li Z-B**, Cao Q, Liu S, Wang F, Chen X. Small Animal PET of Tumors with ⁶⁴Cu-Labeled RGD-Bombesin Heterodimer. *J Nucl Med*, **2009**, 50, 1168-77.
110. Cai W, Guzman R, Hsu AR, Sun G, Wang H, Bliss T, He L, Chen K, **Li Z-B**, Maag A-L, Hori N, Zhao H, Moseley M, Steinberg GK, Chen X. "Positron Emission Tomography Imaging of Vascular Endothelial Growth Factor Receptor Expression after Experimental Stroke". *Stroke*, **2009**, 40, 270-277.
111. Chen K, Cai W, **Li Z-B**, Wang H, Chen X. "Quantitative PET imaging of VEGF receptor expression". *Mol Imaging Biol*, **2009**, 11, 15-22.

112. **Li Z-B**, Chen K, Wang H, Chen X. “⁶⁸Ga-labeled Multimeric RGD Peptides for microPET Imaging of $\alpha_v\beta_3$ Integrin Expression”. *Eur J Nucl Med Mol Imaging*, **2008**, 35, 1100-1108.
113. **Li Z-B**, Wu Z, Chen K, Ryu E-K, Chen X. “¹⁸F-Labeled BBN-RGD Heterodimer for Prostate Cancer”. *J Nucl Med*, **2008**, 49, 453-461.
114. **Li Z-B**[#], Wu Z[#], Cao Q, Dick W D, Tseng R J, Gambhir S S, Chen X. “Brain Tumor Imaging with ¹⁸F-2-Fluorodeoxysorbitol (¹⁸F-FDS)”. *Mol Imaging Biol*, **2008**, 10, 92-98. PMID: PMC4143166.
115. **Li Z-B**[#], Niu G[#], Wang H, He L, Chen X. “microPET Imaging of Urokinase-type Plasminogen Activator Receptor Expression Using a ⁶⁴Cu-Labeled Linear Peptide Antagonist”. *Clin Cancer Res*, **2008**, 14, 4758-4766.
116. Lee H-Y[#], **Li Z-B**[#], Chen K; Wu B; Wang X; Chen X. “Radiolabeled Iron Oxide Nanoparticle Conjugate for PET/MRI Dual Modality Imaging of Tumor Vasculature”. *J Nucl Med*, **2008**, 49, 1371-1379.
117. Cao Q, **Li Z-B**, Chen K, Wu Z, He L, Neamati N, Chen X. “Evaluating bio-distribution and anti-tumor effect of a dimeric RGD peptide-paclitaxel conjugate in mice with breast cancer”. *Eur J Nucl Med Mol Imaging*, **2008**, 35, 1489-1498.
118. Chen K, **Li Z-B**, Wang H, Chen X. “Modification of Quantum Dot for Dual Modality Imaging of Tumor Vascular VEGFR”. *Eur J Nucl Med Mol Imaging*, **2008**, 25, 2235-2244.
119. Yang C-T, Kim Y-S, Wang J, Wang L, Shi J, **Li Z-B**, Chen X, Fan M, Li J-J, Liu S. ⁶⁴Cu-Labeled 2-(Diphenylphosphoryl)-ethylphenylphosphonium Cations as Highly Selective Tumor Imaging Agents: Effects of Linkers and ⁶⁴Cu Chelates on Biodistribution Characteristics. *Bioconj Chem*, **2008**, 19, 2008-2022. PMID: PMC2637998.
120. Wang H, Chen K, Cai W, **Li Z-B**, He L, Kashefi A, Chen X. “Integrin Targeted Imaging and Therapy with RGD4C-TNF Fusion Protein.” *Mol Cancer Ther*, **2008**, 7, 1044-1053.
121. Kim Y-S, Yang C-T, Wang J, Wang L, **Li Z-B**, Chen X, Liu S. “Effects of Targeting Moiety, Linker, Bifunctional Chelator and Molecular Charge on Biological Properties of ⁶⁴Cu-Labeled Triphenylphosphonium Cations”. *J Med Chem*, **2008**, 51, 2971-2984.
122. Alam M R, Dixit V, Kang H, **Li Z-B**, Chen X, Juliano R. “Intracellular Delivery of an Anionic Antisense Oligonucleotide via Receptor Mediated Endocytosis”. *Nucl Acid Res*, **2008**, 36, 2764-2776. PMID: PMC2377441.
123. Rodriguez-Porcel M, Cai W, Gheysens O, Chen Y. I, Chen K, He L, Willmann K. J; Wu C. J, **Li Z-B**, Mohamedali A. K, Kim S, Rosenblum G. M, Chen X, Gambhir S S. “Imaging of VEGF Receptor in a Rat Myocardial Infarction Model using Positron Emission Tomography” *J Nucl Med*, **2008**, 49, 667-673. PMID: PMC2853914.
124. **Li Z-B**, Wu Z, Chen K, Chin T. F, Chen X. “Click Chemistry for ¹⁸F-Labeling of RGD Peptides”. *Bioconjugate Chemistry*, **2007**, 18, 1987-1994.
125. **Li Z-B**, Cai W, Cao Q, Chen K, Wu Z, He L, Chen X. “⁶⁴Cu-Labeled Tetrameric and Octameric RGD Peptides for microPET Imaging of Tumor $\alpha_v\beta_3$ Integrin Expression”. *J Nucl Med*, **2007**, 48, 1162-1171.
126. **Li Z-B**, Cai W, Chen X. “Biocompatible Quantum Dots for In Vivo Imaging”. *J. Nanosci. Nanotechnol.* **2007**, 7, 2567–2581.
127. **Li Z-B**, Liu T, Pu L. “Chiral Macrocyclic-Catalyzed Highly Enantioselective Phenylacetylene Addition to Aliphatic and Vinyl Aldehydes”. *J of Organic Chemistry*, **2007**, 72, 4340-4343.
128. **Li Z-B**, Lin J, Sabat MI, Hyacinth M, Pu L. “Enantioselective Fluorescent Recognition of Chiral Acids by Cyclohexane-1,2-diamine-Based Bisbinaphthyl Molecules”. *J. of Organic Chemistry*, **2007**, 72, 4905-4916. PMID: PMC2536617.

129. Wu Z#, **Li Z-B**#, Chen K, Cai W, He L, Chin T. F, Li F, Chen X. "microPET Imaging of Tumor $\alpha_v\beta_3$ Integrin Expression Using ^{18}F -labeled PEGylated Tetrameric RGD Peptide (^{18}F -FPRGD4)". *J Nucl Med*, **2007**, 48, 1536-1544.
130. Wu Z#, **Li Z-B**#, Cai W, He L, Chin T. F, Li F, Chen X. " ^{18}F -labeled mini-PEG spacers RGD dimer (^{18}F -FPRGD2): synthesis and microPET imaging of $\alpha_v\beta_3$ integrin expression." *Eur J Nucl Med Mol Imaging*, **2007**, 34, 1823-31.
131. Cao Q, Cai W, **Li Z-B**, Chen K, He L, Li H-C, Hui M, Chen X. "PET of Acute and Chronic Inflammation in Living Mice". *Eur J Nucl Med Mol Imaging*, **2007**, 34, 1832-1842.
132. Wang J, Yang C-T, Kim Y-S, Sreerama G S, Cao Q, **Li Z-B**, He Z, Chen X, Liu S. " ^{64}Cu -Labeled Triphenylphosphonium and Triphenylarsonium Cations as PET Radiotracers for Tumor Imaging". *J Med. Chem*, **2007**, 50, 5057-5069.
133. Cai W, Chen K, **Li Z-B**, Gambhir S S, Chen X. "Dual Functional Quantum Dot-Based Probe for Near-Infrared Fluorescence and Positron Emission Tomography Imaging of Cancer". *J Nucl Med*, **2007**, 48: 1862-1870.
134. Cai W, Ebrahimnejad A, Chen K, Cao Q, **Li Z-B**, Tice DA, Chen X. "Quantitative RadioimmunoPET Imaging of EphA2 in Living Mice". *Eur J Nucl Med Mol Imaging*, **2007**, 34, 2024-2036.
135. Cai W, Hsu R. A, **Li Z-B**, Chen X. "Are quantum dots ready for in vivo imaging in human subjects?" *Nanoscale Research Letters*, **2007**, 2, 265-281. PMID: PMC3050636.
136. Wang H, Cai W, Chen K, **Li Z-B**, He L, Chen X. "A new PET tracer specific for vascular endothelial growth factor receptor 2". *Eur J Nucl Med Mol Imaging*, **2007**, 34, 2001-2010.
137. **Li Z-B**, Lin J, Qin Y, Pu L. "Enantioselective Fluorescent Recognition of a Soluble Supported Chiral Acid: Toward a New Method for Chiral Catalyst Screening". *Organic Letters*, **2005**, 7, 3441-3444.
138. **Li Z-B**, Lin J, Pu L. "A Cyclohexyl-1,2-diamine-Derived Bis(binaphthyl) Macrocycle: Enhanced Sensitivity and Enantioselectivity in the Fluorescent Recognition of Mandelic Acid". *Angew. Chem. Int. Ed.* **2005**, 44, 1690-1693.
139. **Li Z-B**, Rajaram R. A, Decharin N, Qin Y-C, Pu, L. "An efficient catalytic asymmetric addition of trimethylsilyl cyanide to aldehydes at room temperature". *Tetrahedron Lett*, **2005**, 46, 2223-2226.
140. **Li Z-B**, Pu L. "Synthesis of a New Bisbinaphthyl Macrocycle for Enantioselective Fluorescent Recognition". *J. of Material Chem.* **2005**, 15, 2860-2864.
141. **Li Z-B**, Pu L. "BINOL-Salen Catalyzed Highly Enantioselective Alkyne Additions to Aromatic Aldehydes". *Organic Letters*, **2004**, 6, 1065 -1068.
142. **Li Z-B**, Lin J, Zhang H-C, Sabat M, Hyacinth M, Pu L. "Macrocyclic Bisbinaphthyl Fluorophores and Their Acyclic Analogues: Signal Amplification and Chiral Recognition". *J. of Organic Chemistry*, **2004**, 69, 6284 -6293.
143. Lin, J, **Li Z-B**, Zhang H.-C., Pu L. "Highly Enantioselective Fluorescent Recognition of α -Amino Acid Derivatives". *Tetrahedron Lett*, **2004**, 45, 103-106.

In Press/submitted

1. Wang, C.; Zhang, H.; Zhang, T.; Zou, X.; Wang, H.; Rosenberger, J.; Vannam, R.; Trout, W.; Jia, X.* **Li, Z.;*** Fox, J.M.* Enabling in vivo Photocatalytic Activation of Rapid Bioorthogonal Chemistry by Repurposing Si-Rhodamine Fluorophores as Cytocompatible Far-Red Photocatalysts, *J. Am. Chem. Soc*, **2021**, revision. ChemRxiv. Preprint. <https://doi.org/10.26434/chemrxiv.13513215.v1>
2. Li Wang, Hui Wang, Kun Shen, Hyejin Park, Tao Zhang, Xuedan Wu, Mei Hu, Hong Yuan, Yue Chen, Zhanhong Wu,*, Qiu Wang,* **Zibo Li**. Development of novel ^{18}F -PET agents for tumor hypoxia imaging.

J Med Chem, **2021**, revision.

3. Wei Chen, Hui Wang, Nicholas E. S. Tay, Vincent A. Pistritto, Kang-Po Li, Tao Zhang, Zhanhong Wu, David A. Nicewicz*, **Zibo Li**.* Arene Radiofluorination Enabled by Photoredox-Mediated Halide Interconversion. *Nature Chem*, **2021**, revision.
4. Wei Chen, Nicholas E. S. Tay, Zeng Huang, Zhanhong Wu, David A. Nicewicz, * **Zibo Li***. Direct arene C–H bond radiofluorination through photoredox catalysis. *Nature Protocol*, 2nd Revision.
5. Valerie Lynn Jewells, Hong Yuan, Joseph R Merrill, Jonathan Edward Frank, Akhil Patel, Stephanie M cohen, Ben giglio, Nana N Feinberg, Glenn K Matsushima, **Zibo Li**. Pilot Assessment of ¹⁸F-PBR-111 in the Cuprizone Mouse Model of Multiple Sclerosis. Submitted.
6. Fu W, Liu Y, Yin A, Wang H, Southern M, Zhen Z, Wu Y, Zhou S, Tang W, Zhao Q, Cao S, Xu Y, Medlock A, Dalton S, Li Z, Xie J, Call J, Yin H. TfR1-dependent Iron Uptake Activates Brown Adipose Tissue by Inducing Mitochondrial Fenton Chemistry. *Nature Communications*, **2020**, Revision Submitted, 48 types pages.

Patents and Patent Applications

1. Chen X, **Li Z-B**. Imaging compounds, methods of making imaging compounds, methods of imaging, therapeutic compounds, methods of making therapeutic compounds, and methods of therapy. US Patent Application (60/926,816).
2. Chen X, **Li Z-B**. Radiolabeled BBN-RGD heterodimers for cancer targeting. US Patent Application (61/075,359)
3. Juliano RL, Alam R, Dixit V, Kang H, Chen X, **Li Z-B**. Receptor targeted oligonucleotides. US Patent Application number: 20100280098.
4. Peter S. Conti, Hancheng Cai, **Zibo Li**, Shuanglong Liu. Cage-Like Bifunctional Chelators, Copper-64 Radiopharmaceuticals and PET Imaging Using the Same. Patent number: 9403875.
5. **Li Z-B**, Conti PS, Cai H. Synthesis of 2'-deoxy-2'-[¹⁸F]fluoro-5-methyl-1-β-d-arabinofuranosyluracil (¹⁸F-FMAU). Patent number: 8912319.
6. Joseph M. Fox, Matthew Hassink, Melissa Blackman, **Zibo Li**, Peter S. Conti, Ramajeyam Selvaraj. Tetrazine-trans-cyclooctene Ligation for the Rapid Construction of Radionuclide Labeled Probes. Patent number: 10434197.
7. **Zibo Li**, Francois P. Gabbai, Peter S. Conti, Todd W. Hudnall, Tzu-Pin Lin, Shuanglong Liu, Chiun-Wei Huang. Boron-Based Dual Imaging Probes, Compositions and Methods for Rapid Aqueous F-18 Labeling, and Imaging Methods Using Same. Patent number: 9987380.
8. Peter S. Conti, **Zibo Li**, Shuanglong Liu, Dan Li. ¹⁸F Labeled Bodipy Dye and its Derivatives for PET Imaging of Heart Perfusion and Others. US Patent Application number: 20150297760.
9. Peter S. Conti, Shuanglong Liu, **Zibo Li**. Methods and Composition for PET Myocardial Perfusion Imaging. Patent number: 9789211.
10. Zibo Li, Joseph Fox, Yu Liu, Katarina Rohlfing, Michal Thompson, Dennis Svatunek, Mengzhe Wang, Zhanhong Wu. "Radiolabeling based on trans-cycloalkenes that are more strained than trans cyclooctene". 2015, pending.

11. Francois P. Gabbai, Boris Vabre, Kantapat Chansaenpak, Zibo Li, Mengzhe Wang, Hui Wang. Probes for 18F Positron Emission Tomography Imaging. Publication number: 20180340001.
12. Jin Xie, Hongmin Chen, Zibo Li. Gd-ENCAPSULATED CARBON DOTS AND METHODS OF MAKING AND USING THEREOF. Publication number: 20170151351
13. Charles E. McKenna, Shuting Sun, Frank H. Ebetino, Mark W. Lundy, Zibo Li. IMAGING PROBES, FORMULATIONS, AND USES THEREOF. Publication number: 20160310621.
14. Zibo LI, Peter S. CONTI, Lin LI, Zhanhong WU, Shuanlong LIU, John E. SHIVELY, David HORNE. Vinylsulfone-based 18F-labeling Compositions and Methods and Uses Thereof. Patent number: 10471161
15. Zibo Li, David Nicewicz, Wei Chen. DIRECT Aromatic Carbon-OXYGEN AND CARBON-HYDROGEN BOND FUNCTIONALIZATION VIA ORGANIC PHOTOREDOX CATALYSIS. U.S. Application No. 62/812,179
16. Xie Jin, Zibo Li, etc. The use of highly soluble nanoparticle for immunotherapy applications. PCT/US2020/014122.
17. Zibo Li, Zhanhong Wu, Ben Giglio, Stergios Moschos. ¹⁸F-labeled compounds for PET imaging and uses thereof. Publication number 20190247527.

Conference Abstracts

1. Phillips, R.D., Zürcher, N.R., Walsh, E.C., Cernasov, P.M., Tseng, C., Dharanikota, A., Smith, E., **Li Z.**, Kinard, J.L., Bizzell, J., Greene, R.K., Freeman, L., Kan, D., Scott, M., Pfister, C., Dillon, D.G., Pizzagalli, D.A., Izquierdo-Garcia, D., Lalush, D., Hooker, J.M., Dichter, G.S. (2020, Dec). A Simultaneous [¹¹C]Raclopride Positron Emission Tomography and Functional Magnetic Resonance Imaging Investigation of Striatal Dopamine Binding in Autism. E-poster presented at the 59th Annual Meeting of the American College of Neuropsychopharmacology (ACNP), Virtual Meeting.
2. Oldan JD, Ollila DW, Giglio BC, Smith E, Bouchard DM, Papakonstantinou MP, Ivanovic M, Lee YZ, Kowalski M, Collichio FA, Meyers MO, Wallack DE, Khandani AH, Leinwand AA, Jennings A, Long P, Ezzell JA, Trembath DG, Wong T, **Li Z**, Moschos SJ. High Intratumoral Tryptophan Metabolism is a Poor Predictor of Response to Pembrolizumab (pembro) in Metastatic Melanoma (MM); Results from a Prospective Clinical Trial using baseline C11-labeled alpha-Methyl Tryptophan (C11-AMT) PET Imaging for Response Prediction ASCO Annual Meeting, Chicago, IL. May 2020.
3. Oldan JD, Ollila DW, Giglio BC, Smith E, Bouchard DM, Papakonstantinou MP, Ivanovic M, Lee YZ, Kowalski M, Collichio FA, Meyers MO, Wallack DE, Khandani AH, Leinwand AA, Jennings A, Long P, Ezzell JA, Trembath DG, Wong T, **Li Z**, Moschos SJ. Preliminary Results from a Prospective Trial of Baseline C11 α-methyl Tryptophan (C11- AMT) PET Imaging as a Predictor of Response to Pembrolizumab in Stage III/IV Melanoma CICON Annual Meeting, France, Paris. September 2019.
4. Jewells V, **Li Z**, Yuan H, Matsushima G, Feinberg N. A Pilot Study of PBR-111; A TSPO Agent in the Cuprizone Mouse Model of MS. ASNR 55th Annual Meeting, Long Beach, CA, April 2017.
5. Wang H, Wang M, Branca R.T, Yuan H, **Li Z**, Wu Z. A Novel PET Probe for Brown Adipose Tissue Imaging in Rodents. 63th SNMMI Annual Meeting, San Diego, CA, June 2016.
6. Wang W, Svatunek D, Rohlfing K, Liu Y, Wang H, Giglio B, Yuan H, Wu Z, Fox J, **Li Z**.

- Conformationally strained trans-cyclooctene (sTCO) enables the rapid construction of ^{18}F -PET probes via tetrazine ligation. 63rd SNMMI Annual Meeting, San Diego, CA, June 2016.
7. Chansaenpak K, Wang H, Wang M, Giglio B, Wu Z, and **Li Z**. Evaluation of [^{18}F]-ammonium BODIPY dyes as potential PET radiotracers for myocardial perfusion imaging. 63rd SNMMI Annual Meeting, San Diego, CA, June 2016.
 8. Deng H, Wang H, Zhang H, Wang M, Giglio B, Yuan H, Wu Z, **Li Z**. The Synthesis and Evaluation of ^{64}Cu -DOTA-NT, ^{64}Cu -NOTA-NT and ^{64}Cu -AmBaSar-NT for PET Imaging of Neurotensin Receptor in Prostate Cancer. 63rd SNMMI Annual Meeting, San Diego, CA, June 2016
 9. Sun S, **Li Z**, Richar E, Wang M, Wang H, McKenna C, Ebetino F. A Novel Bisphosphonate ^{18}F -PET Probe for Early Detection of Rheumatoid Arthritis. ASBMR 2016 Annual Meeting, Atlanta, Georgia.
 10. Siti Najila Mohd Janib, Shuanglong Liu, Ryan Park, Martha Pastuszka, Pu Shi, Peter Conti, **Zibo Li** and J. Andrew MacKay. "Image driven pharmacokinetics using molecular imaging for cancer nanotherapeutics", 2nd AMDI International Biohealth Sciences Conferences, 2016, Kompleks Cahaya Siswa Universiti Sains Malaysia Penang, Malaysia. Oral presentation.
 11. Ben Giglio, Ramajeyam Selvaraj, Shuanglong Liu, Hui Wang, Mengzhe Wang, Hong Yuan, Peter S. Conti, Joseph M. Fox, **Zibo Li**. "Improved Metabolic Stability for ^{18}F PET Probes Rapidly Constructed via Tetrazine *trans*-Cyclooctene Ligation", 62nd SNMMI Annual meeting, Baltimore, Maryland, June, **2015**. Oral presentation.
 12. Hui Wang, Dan Li, Shuanglong Liu, Ren Liu, Hong Yuan, Valery Krasnoperov, Hong Shan, Peter S. Conti, Parkash S. Gill, **Zibo Li**. "PET Imaging of human Glioblastoma and Colorectal Cancer Xenografts Using ^{64}Cu -Labeled DII4 Antibody", 62nd SNMMI Annual meeting, Baltimore, Maryland, June, **2015**.
 13. Bin Zhou, Hui Wang, Ren Liu, Mengzhe Wang, Huaifu Deng, Ben Giglio, Parkash S. Gill, Hong Shan, **Zibo Li**. "PET Imaging of human Glioblastoma and Colorectal Cancer Xenografts Using ^{64}Cu -Labeled DII4 Antibody", 62nd SNMMI Annual meeting, Baltimore, Maryland, June, **2015**.
 14. Shuanglong Liu, Yin Zhang, Dan Li, Hao Hong, Joseph Fox, Peter Conti, Weibo Cai, **Zibo Li**. "Efficient construction of ^{18}F labeled TRC105-Fab based on tetrazine*trans*-cyclooctene ligation", 61st SNM Annual meeting, St. Louis, Missouri, June, **2014**. Oral presentation.
 15. Zhanhong Wu, Shuanglong Liu, J. Shively, Peter Conti, **Zibo Li**, Fouad Kandeel. "Evaluation of ^{18}F -DEG-VS-NT as a PET probe for NTR1 targeted imaging", 61st SNM Annual meeting, St. Louis, Missouri, June, **2014**. Oral presentation.
 16. He Hu, Shuanglong Liu, Dan Li, Mengzhen Wang, Rex Moats, Hong Shan, Peter Conti, **Zibo Li**. "Synthesis of lanthanide-doped GdVO₄ ultrathin nanosheet with great optical and paramagnetic properties", 61st SNM Annual meeting, St. Louis, Missouri, June, **2014**. Oral presentation.
 17. **Zibo Li**, Shuanglong Liu, Peter Conti. "An efficient method for direct conversion of fluorescent probe into PET/fluorescent probe", 61st SNM Annual meeting, St. Louis, Missouri, June, **2014**.
 18. Zhanhong Wu, Shuanglong Liu, J. Shively, Peter Conti, **Zibo Li**, Fouad Kandeel. "NTR1 targeted imaging with ^{18}F -DEG-VS-(Ac)NT", 61st SNM Annual meeting, St. Louis, Missouri, June, **2014**.

19. Shuanglong Liu, Zhanhong Wu, Li-Peng Yap, Fouad Kandeel, J. Shively, Peter Conti, **Zibo Li**. "Evaluation of ^{18}F -DEG-VS-NT for NTR1 targeted imaging in prostate cancer", *61st SNM Annual meeting*, St. Louis, Missouri, June, **2014**.
20. Shuanglong Liu, Dan Li, Ren Liu, Parkash Gill, Hong Shan, Peter Conti, **Zibo Li**. "Evaluation of ^{18}F -DEG-VS-NT as a PET probe for NTR1 targeted imaging", *61st SNM Annual meeting*, St. Louis, Missouri, June, **2014**.
21. Shuanglong Liu, Dan Li, Jiacong Guo, Ren Liu, Parkash Gill, Hong Shan, **Zibo Li**, Peter Conti. "Design, synthesis and validation of Axl-targeted monoclonal antibody probe for microPET imaging in human lung cancer xenograft", *61st SNM Annual meeting*, St. Louis, Missouri, June, **2014**.
22. Zhanhong Wu, Shuanglong Liu, Lin Li, David Horne, Peter Conti, Zibo Li*, Fouad Kandeel, J. Shively*. "Evaluation of ^{18}F -DEG-VS-NT as a PET probe for NTR1 targeted imaging", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**. Oral presentation.
23. Zhanhong Wu, Lin Li, Shuanglong Liu, David Horne, Peter Conti, Zibo Li*, Fouad Kandeel, J. Shively*. "Facile preparation of thiol-reactive ^{18}F -labeling agent based on vinyl sulfone", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**. Oral presentation.
24. Zibo Li*, Shuanglong Liu, Dan Li, Francois Gabbai, Peter Conti. "Evaluation of ^{18}F -labeled BODIPY dye as potential PET agent for myocardial imaging.", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**. Oral presentation.
25. Shuanglong Liu, Zibo Li*, Peter Conti. "Development of a tri-functional chelator based on sarcophagine cage", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.
26. Shuanglong Liu, Zibo Li*, Peter Conti. "An efficient method for NIR fluorescent/PET probe synthesis based on ^{18}F -bodipy dye", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.
27. Shuanglong Liu, Tzu-Pin Lin, Dan Li, Lauren Leamer, Hong Shan, François Gabbai*, Zibo Li*, Peter Conti. " ^{18}F - ^{19}F exchange in BODIPY dyes: Facile generation of positron emission tomography/fluorescence dual modality agents for tumor imaging", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.
28. Shuanglong Liu, Dan Li, Ryan Park, Ren Liu, Jiacong Guo, Valery Krasnoperov, Parkash Gill, Hong Shan, Zibo Li*, Peter Conti. "PET imaging of colorectal and breast cancer by targeting EphB4 receptor with ^{64}Cu -labeled hAb47 and hAb131 antibodies.", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**. Oral presentation.
29. Zibo Li*, Shuanglong Liu, Kantapat Chansaenpak, Casey Wade, Francois Gabbai*, Peter Conti. "Efficient construction of ^{18}F labeled imaging agents by harvesting [^{18}F]-fluoride ions with zwitterionic aryltrifluoroborates.", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.
30. Zhanhong Wu, Shuanglong Liu, Indu Nair, Stephen Scott, Ivan Todorov, J. Shively, Peter Conti, Zibo Li*, Fouad Kandeel*. " ^{64}Cu Labeled sarcophagine exendin-4 for microPET imaging of glucagon like peptide-1 receptor expression", *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.
31. Dan Li, Zibo Li*, Shuanglong Liu, Ren Liu, Ryan Park, Valery Krasnoperov, Parkash Gill, Hong Shan, Peter Conti. "Targeting the EphB4 receptor for tumor therapy monitoring". *60th SNM Annual meeting*, Vancouver, Canada, June, **2013**.

32. Dan Li, Zibo Li*, Shuanglong Liu, Ren Liu, Ryan Park, Valery Krasnoperov, Parkash Gill, Hong Shan, Peter Conti. "Axl-targeted optical imaging in lung tumor xenografts". 60th SNM Annual meeting, Vancouver, Canada, June, **2013**.
33. He Hu, Dan Li, Shuanglong Liu, Peter Conti, Zibo Li*. "Integrin $\alpha_2\beta_1$ targeted nanosheet for multimodal imaging of prostate cancer.". 60th SNM Annual meeting, Vancouver, Canada, June, **2013**.
34. Kantapat Chansaenpak, Shuanglong Liu, Peter Conti, **Zibo Li**, Francois P. Gabbai. "Ortho-phenylene phosphino-boranes for harvesting ^{18}F fluoride anions in aqueous solutions and *in vivo* stability studies". 2013 world molecular imaging conference, Savannah, GA, September **2013**.
35. Kantapat Chansaenpak, Shuanglong Liu, **Zibo Li**, Francois P. Gabbai. "Ortho-phenylene phosphino-boranes for ^{18}F fluoride anion capture and *in vivo* stability studies". 245th ACS National Meeting. New Orleans, Louisiana. April, **2013**.
36. Tzu-Pin Lin, Shuanglong Liu, Haiyan Zhao, Iou-Sheng Ke, Casey R. Wade, Peter S. Conti, **Zibo Li**, Francois P. Gabbai. "Fluoride anion complexation in aqueous phases using main group Lewis acids: Applications in sensing and radiofluorination chemistry". 244th ACS National Meeting, *Memorial Symposium for Michelle Millar: Exploration of Enzymes and their Functions Using Synthetic Inorganic Chemistry*. Philadelphia, PA. August, **2012**.
37. **Zibo Li**, Chiun-Wei Huang, Peter Conti. "Radioactive smart probe for corrected matrix metalloproteinase imaging". 59th SNM Annual meeting, Miami, FL, June, **2012**.
38. Dan Li, **Zibo Li**, Shuanglong Liu, Ren Liu, Valery Krasnoperov, Parkash Gill, Hong Shan, Peter Conti. "Targeting EphB4 for colorectal cancer imaging". 59th SNM Annual meeting, Miami, FL, June, **2012**. Oral presentation.
39. Shuanglong Liu, Dan Li, Chiun-Wei Huang, Li-Peng Yap, Ryan Park, Hong Shan, **Zibo Li**, Peter Conti. "Efficient construction of PET/fluorescence probe based on sarcophagine cage: An opportunity to integrate diagnosis with treatment". 59th SNM Annual meeting, Miami, FL, June, **2012**. Oral presentation.
40. Shuanglong Liu, Matthew Hassink, Zhanhong Wu, Ramajeyam Selvaraj, Hui Wang, Xiaoyuan Chen, Fouad Kandeel, Joseph Fox, **Zibo Li**, Peter Conti. " ^{18}F labeling of cysteine containing peptides (RGD and Exendin-4) and protein (VEGF) with high yield and specific activity using tetrazine-trans-cyclooctene ligation". 59th SNM Annual meeting, Miami, FL, June, **2012**. Oral presentation.
41. Zhanhong Wu, **Zibo Li**, Shuanglong Liu, Matthew Hassink, Indu Nair, Ivan Todorov, Joseph Fox, John Shively, Peter Conti, Fouad Kandeel. "Evaluation of ^{18}F -TTCO-Cys⁴⁰-Exendin-4 as a PET probe for GLP-1R targeted imaging". 59th SNM Annual meeting, Miami, FL, June, **2012**. Oral presentation.
42. **Zibo Li**, Tzu-Pin Lin, Shuanglong Liu, Dan Li, François Gabbai, Peter Conti. "Preparing ^{18}F -labeled BODIPY dyes: A simple method for PET/fluorescence dual modality imaging". 59th SNM Annual meeting, Miami, FL, June, **2012**.
43. Shuanglong Liu, Chiun-Wei Huang, Li-Peng Yap, Ryan Park, **Zibo Li**, Peter Conti. "Functionalization of sarcophagine chelator with amino, maleimide, and carboxyl groups for the syntheses of ^{64}Cu radiopharmaceuticals". 59th SNM Annual meeting, Miami, FL, June, **2012**.

44. Zibo Li, Ramajeyam Selvaraj, Shuanglong Liu, Matthew Hassink, Dan Li, Joseph Fox, Peter Conti. "Stabilized-tetrazine *trans*-cyclooctene ligation for rapid construction of ^{18}F labeled probes". 59th SNM Annual meeting, Miami, FL, June, **2012**.
45. Siti Mohd Janib, **Zibo Li**, Shuanglong Liu, Radu Minea, Steve Swenson, Francis Markland, Peter Conti, John Mackay. "Disintegrin-targeted elastin-like polypeptide (ELPs) as a therapeutic and PET diagnostic imaging agent". 59th SNM Annual meeting, Miami, FL, June, **2012**.
46. Stephen D. Swenson, **Zibo Li**, Radu Minea, Francis S. Markland. "A novel ovarian cancer imaging agent based on integrin ligation", The American Association for Cancer Research (103rd AACR) National Meeting, Chicago, IL, April, **2012**.
47. Shuanglong Liu, Chiun-Wei Huang, Li-Peng Yap, Ryan Park, **Zibo Li**, Peter S. Conti. "PET and fluorescence imaging of brain cancer with a dual modality probe based on sarcophagine cage", 103rd AACR National Meeting, Chicago, IL, April, **2012**.
48. **Zibo Li**, Shuanglong Liu, Matt Hassink, Ramajeyam Selvaraj, Li-peng Yap, Xiaoyuan Chen, Joseph M. Fox, Peter S. Conti. "Tetrazine *trans*-cyclooctene ligation: An efficient ^{18}F labeling method for cysteine containing peptides and proteins", 103rd AACR National Meeting, Chicago, IL, April, **2012**.
49. Tzu-Pin Lin, François P. Gabbaï, **Zibo Li**. "Rapid aqueous [^{18}F]-labeling of a bodipy dye for positron emission tomography/fluorescence dual modality imaging", 243rd ACS National Meeting, San Diego, CA, March, **2012**.
50. Shuanglong Liu, Matthew Hassink, Chiunwei Huang, Li-Peng Yap, Ryan Park, Joseph M. Fox, **Zibo Li**, Peter S. Conti, "*Tetrazine trans-cyclooctene ligation, an ultra-efficient ^{18}F labeling method for positron emission tomography probe construction*" 2011 world molecular imaging conference, San Diego, CA, September **2011**. Oral presentation.
51. **Zibo Li**, Tzu-Pin Lin, Shuanglong Liu, Chiunwei Huang, Todd Hudnall, Francois Gabbai, Peter S. Conti. "*Rapid aqueous [^{18}F]-labeling of the bodipy dye for positron emission tomography/fluorescence dual modality imaging*" 2011 world molecular imaging conference, San Diego, CA, September **2011**.
52. **Zibo Li**, Qiaoling Jin, Chiunwei Huang, Siva Sai Krishna Dasa, Liaohai L. Chen, Li-Peng Yap, Shuanglong Liu, Ryan Park, Peter S. Conti. "*Bio-engineered Phage particle as Positron Emission Tomography (PET) Agent for Cancer Imaging.*" 2011 world molecular imaging conference, San Diego, CA, September **2011**.
53. Shuanglong Liu, **Zibo Li**, Li-Peng Yap, Huang Chiun-Wei, Ryan Park, Peter S. Conti. "*Efficient preparation and biological evaluation of a novel multivalency bifunctional chelator for ^{64}Cu radiopharmaceuticals*" 2011 world molecular imaging conference, San Diego, CA, September **2011**.
54. Kai Chen, **Zibo Li**, Peter S. Conti. "*Microwave-assisted one-pot radiosynthesis of 2'-deoxy-2'-[^{18}F]fluoro-5-methyl-1- β -D-arabinofuranosyluracil ([^{18}F]-FMAU)*" 2011 world molecular imaging conference, San Diego, CA, September **2011**.
55. Zhanhong Wu, Zibo Li, Shuanglong Liu, Matthew Hassink, Indu Nair, Lin Li, Ryan Park, Ivan Todorov, Joseph M. Fox, John E. Shively, Peter S. Conti, Fouad Kandeel. "*Ultra efficient F-18 labeling of Cys⁴⁰-Exendin-4 and the non-invasive imaging of transplanted islets by targeting GLP-1 receptor*" 2011 world molecular imaging conference, San Diego, CA, September **2011**.
56. Hossein Jadvar, Li-Peng Yap, Ryan Park, **Zibo Li**, Kai Chen, Peter S. Conti. "*Preclinical Evaluation of [^{18}F]-2'-fluoro-5-methyl-1-beta-D-arabinofuranosyluracil (^{18}F -FMAU) in Mouse Models of*

- Implanted Human Prostate Cancer Xenografts*” 2011 world molecular imaging conference, San Diego, CA, September **2011**.
57. **Li Z-B**, Conti PS. “Novel Cage Chelator for Multimodality Imaging Probe Construction”, 13th SCBA international symposium, Guangzhou, China, July, **2011**.
58. “Tetrazine-*trans*-Cyclooctene Ligation for the Rapid Construction of ¹⁸F Labeled Probes”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
59. **Li Z-B**, Huang C-W, Yap LP, Park R, Krasnoperov V, Gill P, Conti PS. “EphB4/EphrinB2 Targeted Imaging in Kaposi Sarcoma”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
60. **Li Z-B**, Huang C-W, Yap LP, Park R, Wu LY, Wang Q, Conti PS. “Integrin targeted virus as positron emission tomography (PET) agent for cancer imaging”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
61. Huang C-W, **Li Z-B**, Conti PS. “Comparison between linear and cyclic DGEA peptides for their efficacy as prognostic tracers for prostate cancer”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
62. Janib SM, **Li Z-B**, Huang C-W, Conti PS, Mackay J. “PET imaging with genetically engineered thermo-responsive micelles”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
63. Wu ZW, **Li Z-B**, Todorov I, Fraser S, Conti PS, Shively J, Kande F. “The development of PET/MRI dual modality probe based on IO nanoparticle for pancreatic beta-cell imaging”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
64. Chen K, **Li Z-B**, Conti PS. “Microwave-assisted one-pot radiosynthesis of 2'-deoxy-2'-[¹⁸F]fluoro-5-methyl-1-β-D-arabinofuranosyluracil ([¹⁸F]-FMAU)”, 58th SNM Annual meeting, San Antonio, TX, June, **2011**.
65. **Li Z-B**, Jin QL, Huang CW, Chen LH, Yap L-P, Cai HC, Park R, Conti PS. “Trackable and targeted phage as positron emission tomography (PET) agent for cancer imaging”, Breast Cancer Imaging: State of Art 2011, Washington DC, April, **2011**.
66. **Li Z-B**, Jin QL, Huang CW, Chen LH, Yap L-P, Cai HC, Park R, Conti PS. “Trackable and targeted phage as positron emission tomography (PET) agent for cancer imaging”, AACR Nano in Cancer: Linking Chemistry, Biology, and Clinical Applications In Vivo, Miami, Florida, Jan, **2011**.
67. “One pot synthesis of ¹⁸F-FMAU and its automation.” Fall 2010 National Meeting & Exposition, American Chemical Society, Boston, Massachusetts, August, **2010**.
68. “microPET Imaging of Integrin α₂β Expression Using ⁶⁴Cu-labeled DGEA Peptides.” Fall 2010 National Meeting & Exposition, American Chemical Society, Boston, Massachusetts, August, **2010**.
69. “Preparation and Bio-evaluation of ⁶⁴Cu Labeled AmBaSar-RGD Peptide for Improved microPET Imaging of Integrin α_vβ₃ Expression.” Fall 2010 National Meeting & Exposition, American Chemical Society, Boston, Massachusetts, August, **2010**.
70. “One pot synthesis of ¹⁸F-FMAU and its automation.” 57th SNM Annual meeting, Salt Lake City, UT, June, **2010**.

71. Huang C-W, **Li Z-B**, Cai H-C, Shahinian AH, Conti PS. "Reduction of Kidney Uptake in Near-Infrared Fluorescent Imaging of Integrin $\alpha_2\beta_1$ Expression using the Peptide Linker Strategy", 57th SNM Annual meeting, Salt Lake City, UT, June, **2010**. Oral presentation.
72. Huang C-W, **Li Z-B**, Cai H-C, Shahinian AH, Conti PS. "microPET Imaging of Integrin $\alpha_2\beta$ Expression Using ^{64}Cu -labeled DGEA Peptides", 57th SNM Annual meeting, Salt Lake City, UT, June, **2010**. Oral presentation.
73. Huang C-W, **Li Z-B**, Cai H-C, Shahinian AH, Conti PS. "Near-Infrared Fluorescent Imaging of Prostate Cancer Using Integrin $\alpha_2\beta_1$ Targeted Peptide Probes", 57th SNM Annual meeting, Salt Lake City, UT, June, **2010**. Oral presentation.
74. Cai H-C, **Li Z-B**, Huang C-W, Shahinian AH, Park R, Conti PS. "Preparation and Bio-evaluation of ^{64}Cu Labeled AmBaSar-RGD Peptide for Improved microPET Imaging of Integrin $\alpha_v\beta_3$ Expression", 57th SNM Annual meeting, Salt Lake City, UT, June, **2010**. Oral presentation.
75. Huang C-W, Cai H, **Li Z-B**, Conti PS. "Novel $\alpha_2\beta_1$ integrin targeting peptide probes for prostate cancer imaging." 238th ACS National Meeting, Washington, DC, United States, August, **2009**.
76. Huang C-W, Cai H, **Li Z-B**, Conti PS. "Novel $\alpha_2\beta_1$ integrin targeting peptide probes for prostate cancer imaging." 56th SNM Annual meeting, Toronto, Canada, June, **2009**.
77. Niu G, **Li Z-B**, Xie J, Le Q, Chen X. "PET imaging of EGFR antibody distribution in head-neck squamous cell carcinoma models." 56th SNM Annual meeting, Toronto, Canada June **2009**.
78. Niu G, **Li Z-B**, Chen X. "Non-invasive PET imaging of downregulation of HER-2 in 17-DMAG treated ovarian cancers." 56th SNM Annual meeting, Toronto, Canada, June, **2009**.
79. Liu Z, **Li Z-B**, Cao Q, Liu S, Wang F, Chen X. "Small Animal PET imaging of Tumors with ^{64}Cu -Labeled RGD-Bombesin Heterodimer." 18th ISRS, Edmonton, Canada, July **2009**.
80. Dixit V, Alam MR, Kang H, Fisher M, **Li Z-B**, Chen X, Juliano R. "Biological activity, cellular uptake and intracellular trafficking of antisense oligonucleotides." Cambridge Healthtech Institute's 2nd Annual RNAi for Therapeutics, Boston, Oct 22-23, **2008**.
81. "PET/MRI dual modality tumor imaging using RGD conjugated radiolabeled iron oxide nanoparticles." 55th SNM Annual meeting, Conference, New Orleans, Louisiana, June **2008**.
82. "Radio-labeled BBN-RGD heterodimer for prostate cancer." 55th SNM Annual meeting, Conference, New Orleans, Louisiana, June **2008**.
83. " ^{68}Ga -labeled multimeric RGD peptides for microPET imaging of integrin $\alpha_v\beta_3$ expression." 55th SNM Annual meeting, Conference, New Orleans, Louisiana, June **2008**.
84. Chen K, **Li Z-B**, Wang H, Cai W, Chen X. "Quantum dot based dual functional probe for optical/PET imaging of tumor VEGFR." 55th SNM Annual meeting, New Orleans, LA June **2008**.
85. Chen K, Cai W, **Li Z-B**, Wang H, Chen X. "Quantitative PET imaging of VEGF receptor expression." 55th SNM Annual meeting, New Orleans, LA June **2008**.
86. "microPET Imaging of Urokinase-type Plasminogen Activator Receptor Expression Using a ^{64}Cu -Labeled Linear Peptide Antagonist." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.

87. “¹⁸F-Labeled BBN-RGD Heterodimer for Prostate Cancer.” *Joint Molecular Imaging Conference*, Providence, Rhode Island, September **2007**.
88. “Click Chemistry for ¹⁸F-Labeling of RGD Peptides and microPET Imaging of Tumor $\alpha_v\beta_3$ Integrin Expression.” *Joint Molecular Imaging Conference*, Providence, Rhode Island, September **2007**.
89. “microPET imaging of urokinase-type plasminogen activator receptor (uPAR) expression using ⁶⁴Cu-labeled uPAR-binding peptides.” *54th SNM Annual meeting*, Washington, DC. June **2007**.
90. “⁶⁴Cu-labeled tetrameric and octameric RGD peptides for microPET imaging of tumor $\alpha_v\beta_3$ integrin expression.” *54th SNM Annual meeting*, Washington, DC. June **2007**.
91. “Click labeling of RGD peptide with ¹⁸F and microPET imaging of $\alpha_v\beta_3$ integrin expression.” *54th SNM Annual meeting*, Washington, DC. June **2007**.
92. **Li Z-B**, Wu Z, Cao Q, Dick DW, Tseng JR, Gambhir SS, Chen X. “Orthotopic Brain Tumor Imaging with ¹⁸F-2-Fluorodeoxysorbitol (¹⁸F-FDS).” Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
93. Niu G, **Li Z-B**, Wang H, He L, Xing L, Chen X. “microPET imaging of urokinase-type plasminogen activator receptor expression using ⁶⁴Cu labeled cyclo19,31[D-Cys19]uPA19-31.” 54th SNM Annual meeting, Washington, DC June **2007**.
94. Wang H, Cai W, **Li Z-B**, He L, Chen X. “Efficient In Vivo Tumor Targeting of a RGD-TNF Fusion Protein.” 54th SNM Annual meeting, Washington, DC June **2007**.
95. Cao Q, **Li Z-B**, Wu Z, He L, Neamati N, Chen X. “Evaluating Anti-Tumor Effect of a Dimeric RGD Peptide-Paclitaxel Conjugate on Breast Cancer.” 54th SNM Annual meeting, Washington, DC June **2007**.
96. Cao Q, Cai W, **Li Z-B**, Chen K, He L, Li H-C, Hui M, Chen X. “PET of Acute and Chronic Inflammation in Living Mice.” 54th SNM Annual meeting, Washington, DC June **2007**.
97. Wu Z, **Li Z-B**, Cai W, He L, Chin FT, Li F, Chen X. “¹⁸F-labeled mini-PEG spacers RGD dimer (¹⁸F-FPRGD2): synthesis and microPET imaging of $\alpha_v\beta_3$ integrin expression.” 54th SNM Annual meeting, Washington, DC June **2007**.
98. Wu Z, **Li Z-B**, Cai W, He L, Chin FT, Li F, Chen X. “microPET Imaging of Tumor $\alpha_v\beta_3$ Integrin Expression Using ¹⁸F-labeled PEGylated Tetrameric RGD Peptide (¹⁸F-FPRGD4).” 54th SNM Annual meeting, Washington, DC June **2007**.
99. Cai W, Ebrahimnejad A, Chen K, Cao Q, **Li Z-B**, Tice DA, Chen X. “Quantitative radioimmunoPET of EphA2 in xenograft-bearing mice.” 54th SNM Annual meeting, Washington, DC June **2007**.
100. Cai W, Ebrahimnejad A, Chen K, Cao Q, **Li Z-B**, Tice DA, Chen X. “Quantitative PET Imaging of EphA2 Expression in Tumor-Bearing Mice.” Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
101. Cai W, Chen K, **Li Z-B**, Gambhir SS, Chen X. “Dual Functional Quantum Dot-Based Probe for Near-Infrared Fluorescence and Positron Emission Tomography Imaging of Cancer.” Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.

102. Cai W, Guzman R, Chen K, Hsu AR, Bliss T, Sun G, Wang H, He L, **Li Z-B**, Maag A-L, Hori N, Zhao H, Steinberg GK, Chen X. "PET Imaging of VEGFR Expression in Stroke." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
103. Lee H-Y, **Li Z-B**, Chen K, Lee S-H, Lee J-H, Nishimura DG, Cho SH, Biswal S, Chen X. "Radiolabeled Iron Oxide Nanoparticle Conjugate for PET/MRI Dual Modality Imaging of Tumor Vasculature." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
104. Wang H, Cai W, Chen K, **Li Z-B**, He L, Chen X. "A VEGFR2 Specific PET Tracer." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
105. Wang H, Cai W, Chen K, **Li Z-B**, Chen X. "Efficient In Vivo Tumor Targeting of a RGD-TNF Fusion Protein." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
106. Cao F, **Li Z-B**, Chen K, Wang H, Cai W, Chen X, Wu JC. "PET Imaging of Angiogenesis Formation in Teratoma from Human Embryonic Stem Cells." Joint Molecular Imaging Conference, Providence, Rhode Island, September **2007**.
107. Alam R, Dixit V, Kang H, Fisher M, **Li Z-B**, Chen X, Juliano R. "Delivery of Anionic Antisense Oligonucleotides via Bivalent RGD Ligands." Gordon Research Conference, Nucleosides, Nucleotides & Oligonucleotides, Newport, RI, July **2007**.
108. Wang J, Yang C-T, Kim Y-S, Sreerama S, Cao Q, **Li Z-B**, Chen X, Liu S. "⁶⁴Cu and ¹¹¹In labeled TPP cations as selective radiotracers for tumor imaging." 234th ACS National Meeting, Boston, MA, United States, August, **2007**.
109. "Enantioselective fluorescent recognition of chiral acids and application in chiral catalyst screening." *230th ACS National Meeting*, Washington, DC, United States, Aug. **2005**.
110. "Enantioselective fluorescent recognition of mandelic acids for chiral catalyst screening." Dept. of Chemistry, University of Virginia. **2004**.

6) Teaching activities

Teaching Lectures:

1. "Positron Emission Tomography and its applications", North Carolina State University, Raleigh, NC, January, **2020**. Course: BME-590: Advanced Drug Delivery Systems.
2. Lecture to cancer researcher on imaging; Lecture to pharmacy student on radiochemistry; Lecture to graduate students on BRIC imaging certificate. **2019**, UNC Chapel Hill.
3. "Application of Molecular Imaging in Biomedical Engineering", North Carolina State University, Raleigh, NC, February, **2018**. Course: BME-590: Advanced Drug Delivery Systems.
4. "Radiochemistry and PET imaging", UNC Chapel Hill, September, **2017**. Course: BRIC Imaging program
5. "Next-Generation Radiotracers for Cancer Imaging: Focusing on New Chemistry", Society of Nuclear Medicine and Molecular Imaging, CE06: Next-Generation Radiotracers for Cancer Imaging. June **2016**, San Diego, CA.

6. "Application of Molecular Imaging in Biomedical Engineering", North Carolina State University, Raleigh, NC, February, **2016**. Course: BME-590: Advanced Drug Delivery Systems.
7. "Development of multimodality imaging agents", North Carolina State University, Raleigh, NC, February, **2015**. Course: BME-590: Advanced Drug Delivery Systems.
8. "Developing translatable PET agent: from bench to bedside", University of Virginia, Charlottesville, VA, Oct **2014**. PET Molecular Imaging Workshop.

Invited Lectures:

1. "Photoredox radiofluorination: an unprecedented technology for PET probe development." The 6th Preclinical Imaging Consortium, May **2020**. Michigan State University, East Lansing.
2. "Laser induced radiofluorination: a great opportunity in PET probe construction". University of Chicago, Feb, **2020**, Chicago.
3. "Developing novel radiochemistry for PET applications". May, **2019** Emory University.
4. "How to generate optimized PET agents for cancer research", Memorial Sloan Kettering Cancer Center. May, **2018**, New York
5. "Design and translate novel agents to clinical use", Yale University. April, **2018** New Heaven
6. "Design and translate novel agents to clinical use", Luzhou Sichuan, China. April, **2018**, international.
7. "Radiochemistry and its application in PET probe construction", Nanjing University, China. **2017**, international.
8. "Design and translate novel agents to clinical use", Peking University Cancer Hospital, Beijing, China. May, **2017**, *international*.
9. "Application of Novel Chemistry in PET", Public Health University of Shanghai, Shanghai, China. Dec, **2016**, *international*.
10. "Using Molecular Imaging to "analyse" Biological Process in vivo", University of Georgia, Athens, GA, March, **2016**. Analytical Seminar speaker in the Chemistry Department, University of Georgia. *National*.
11. "Zwitterionic boron-based [¹⁸F]-fluoride captors", *Pacificchem*, Hawaii, December, **2015**, Invited speaker. *International Conference*.
12. "Design translatable PET agent for clinical use", Shanghai, August 2015.
13. "How to develop translational PET agent for clinical usage", Dalian, June, **2015**. *International Conference*.
14. "Converting organic chemistry to radiochemistry", Nanjing University, Nanjing, Jiangsu, China, June, **2015**. Organic Chemistry Seminar speaker. *International*
15. "Development of novel molecular imaging probes: from basic science to translational research", University of Toronto, Toronto, December, **2013**. Techna Rounds. *International*.
16. "From traditional chemistry to radiochemistry", U Penn, Philadelphia, November, **2013**. Graduate student invited speaker. *National*.

17. "Design a translatable probe for cancer management", Sun Yat-sen University, Guangzhou, China, November, **2013**. *International*
18. "Development of novel radiochemistry and its application in nanomedicine", Washington DC, June, **2013**. NIBIB/NIH. *National*.
19. "Integrating PET with Fluorescence Imaging", Washington DC, June, **2013**. NCI/NIH. *National*.
20. "Constructing Novel Molecular Imaging Probes: the driving force is still chemistry". University of Saskatchewan, Saskatoon, Canada, Dec, **2012**. *International*
21. "Multimodality Imaging: what we have learned from radio-chemistry", 13th SCBA international symposium, Guangzhou, China, July, **2011**. *International*
22. "Ultra-efficient labeling method for PET probe construction: the driving force is still chemistry", National Institute of Biomedical Imaging and Bioengineering, Bethesda, Maryland, April, **2011**. *National*.
23. "Preparation and Application of Novel Cage-Like Bifunctional Chelators for Multimodality Imaging", Department of Energy, Bethesda, Maryland, April, **2011**. *National*.
24. "The development of integrin alpha(2)beta(1) targeted probes", Invited presentations at University of Science and Technology of China, Hefei, China; NanKai Univserity, Tianjin, China; and Institute of radiation, Tianjin, China, April, **2010**. *International*
25. "Multimodality Molecular Imaging in Living Subjects", Invited presentations at Fudan University, Shanghai, China; Institute of Chemsitry, Chinese Academy of Science, Beijing, China; Beijing 309 Hospital, Beijing, China; and China Pharmaceutical University, Nanjing, China, April, **2010**. *International*
26. "Multimodality Molecular Imaging in Living Subjects". Medical College of Georgia, Augusta, GA, February **2008**. *National*.
27. "The development of novel ¹⁸F labelling method and its application in microPET imaging" Dept. of Radiology, Peking Union Medical College Hospital. Beijing, China, July **2007**. *International*

7) Grants

Active

*1R01CA233904-01 (Li, Z; Moschos, Stergios)	12/7/18-11/30/23	2.76 calendar months
NCI	\$259,863	

Development of IDO PET agents for immunotherapy

In this study we will focus on synthesizing a library of ligands for in vitro, in vivo IDO imaging, and testing the lead compound in anti-PD1/IDO treatment to evaluate its capability to predict treatment response in order to better identify and monitor IDO expression before and during treatment.

Role: Leading PI

1R01EB029451-01 (Li, Zibo; Nicewicz David)	5/1/2020-3/31/2024	\$2,660,560	2.8 calendar months
NIBIB/NIH			

Novel Catalytic Methods for Efficient Radiolabeling of Un-activated Arene Compounds

The goal of this application is to develop an innovative labelling method to direct labelling un-activated arenes that is commonly found in organic drug molecules.

Role: Leading PI.

1R01CA247769-01A1 (Li, Z; Xie, J) 07/15/2020-07/14/2025 3.48 calendar months
NIH \$502,394

The development of novel radiation-sensitizer based on ultra-small carbon dots

This project aims to develop an ultrasmall nanoparticle, metal intercalated carbon dots (M@Cdots, M=Gd, and Bi), to enhance radiotherapy against non-small cell lung cancer (NSCLC).

Role: Leading PI.

2P30CA016086-45 (Earp) 12/01/2020-11/30/2025 1.20 calendar months
NIH \$40,778,635

Cancer Center Support Grant

With these funds, a talented faculty integrated through cancer center mechanisms will make advances in the prevention, early detection, and treatment of cancer in our catchment area (i.e. North Carolina) and the nation.

Role: co-I

3R35GM119661-03 (Cao, Y) 8/1/16-5/31/21 8.33%
NIH \$567,698 (Years 3-5 only)

Optimizing antibody-based therapy through a system platform of pharmacokinetics, pharmacodynamics and immunodynamics

Specifically, we will collaborate with experts in the fields of radiology and molecular imaging to develop novel labeling approaches to track antibody entities at multiple levels (i.e., blood, tissue, interstitial fluid, and cell) and assess antibody system persistence and distribution to the site(s)-of-action (pharmacokinetics) (Project 1). We will apply a series of combined experimental and computational approaches to assess the temporal and spatial antibodyantigen interactions in vivo, and the subsequent cellular and subcellular events (Project 2).

Role: co-I

1R01EB022596 (Xie, J) 4/1/17-1/31/21 NCE
University of Georgia/NIH

Nanoscintillator-based X-ray sensitizers to enable efficient non-small cell lung cancer treatment with Xray irradiation

The major objective of this project is to develop an X-PDT as a novel therapy modality to treat NSCLC. It is hypothesized that X-PDT can be activated by X-ray radiation of low doses and dose rates to efficiently kill NSCLC cells in the lungs.

Role: leading investigator in subcontract

Contract #75N91019C00015 09/01/2019-05/31/2020 NCE
Zymeron Co. \$195,000

Local X-Ray-Activated Photodynamic Therapeutic System for Enhanced Radiation Therapy

This project aims to investigate the use of novel nanoparticles developed at Zymeron for high-energy x-ray triggered photodynamix therapy.

Role: subcontract PI.

1R01DA048627-01 (Sellers) 06/15/2019-05/31/2024 0.60 calendar months
Duke University/NIH \$235,702

Pathogenesis of Neuroinflammation and Neurocognitive Impairment In HIV-infected Young Adult Cannabis Users

This proposal will – for the first time – perform comprehensive, multi-domain immune and metabolomic profiling to investigate the effects of marijuana on systemic and neuroinflammation and its impact on cognition in young adults with HIV, a population understudied in HIV NCI studies who are disproportionately affected by HIV.

Role: co-I

17846 (Batrakova) 0.60 calendar months
Michael J. Fox Foundation \$237,601.25

Bio-inspired Nanoformulation of GDNF for Treatment of Parkinson's Disease (PD)

This project represents a pioneering study with the potential to revolutionize treatment for PD. Using macrophage-derived EVs will allow targeted delivery of GDNF to the brain. Our methodology represents a paradigm shift in how PD patients are currently treated, specifically with increased efficacy and low side effects.

Role: co-I

Pending

1R01CA257851 (MPIs: Xie, contact, Li, Kim) 04/01/2021-03/31/2025 1.20 calendar months
UGA/NIH \$1,242,997

Development of a novel biodegradable inorganic nanoparticle therapeutic for cancer

Our objective is to develop a safe and effective intravesical therapy based on phospholipid coated NaCl nanoparticles (PSCNPs)

Role: MPI (rated at 3%)

Unassigned (Yuan, Consortium PI) 04/01/2021-03/31/2022 1.20 calendar months
Aestas/NIH \$125,000

SBIR: Development of Aberrant Cdk5 Imaging agent for early detection of Alzheimer's disease pathology and treatment outcome measurement

The proposal aims to develop Positron Emission Tomography (PET) imaging agents for early detection of Alzheimer's and monitoring treatment outcomes for disease management.

Role: co-I

Unassigned (Li, Consortium PI) 05/01/2021-10/31/2021 0.36 calendar months
Athna Biotech/NIH \$52,000

SBIR: Development of a salt-based nanomedicine for non-muscle invasive bladder cancer

The UNC team will work with Athna Biotech, Inc. on testing the treatment efficacy of SCNPs. Specifically, UNC will establish orthotopic bladder cancer models and instill SCNPs, through a catheter, into the affected bladder. For comparison, control groups including MMC will be tested.

Role: Consortium PI. (Scored 24)

Unassigned (Li, Consortium PI) 05/01/2021-04/30/2022 0.12 calendar months
Athna Biotech/NIH \$40,000

STTR: Development of a radiation-activatable nanoparticle for lung cancer therapy

The UNC team will work with Athna Biotech, Inc. on preparing NTSmut-DM1-NO-PLGA NPs and testing their pharmacokinetics in vivo with PET.

Role: Consortium PI. (Scored 27)

W81XWH20P0130 (Li, Consortium PI) 10/01/2020-03/31/2021 0.12 calendar months
Zymeron/DoD \$30,000

SBIR: Prophylactics for Ionizing Radiation-induced Hematopoietic Subsyndrome of ARS

Zymeron purposes to utilize its advanced techniques to reformulate amifostine, aiming to develop a safe and easy-to-use prophylactic MCM with prolonged protective effects on the hematopoietic system.

Role: Consortium PI. (funded and waiting for paperwork).

Finished

5U54CA198999-04 (Huang, L) 9/1/15-7/31/20 0.48 calendar months
NIH \$1,494,991

Nano Approaches to Modulate Host Cell Response for Cancer Therapy

The major goal of the project is to work to improve the quality and duration of life and disease outcome for cancer patients by enhancing treatment. We propose four projects that clearly address various aspects of host response while developing some strategies for direct tumor kill.

Role: small animal imaging core PI.

5U01CA198910-04 (Kabanov, A) 8/14/15-7/31/20 0.24 calendar months
NIH \$424,563

Targeted Core Shell Nanogels for Triple Negative Breast Cancer

The central goal of this project is to improve systemic therapies of cancer using soft nanomaterials that can deeply penetrate into tumors and deliver potent anticancer agents the targeted cancer cells.

Role: co-I

*Unassigned (Li, Zibo; Liu Rihe) 5/1/18-4/30/20 \$120,000 5%
OncoTrap Inc.

Evaluation of OncoTrap's lead drugs in tumor bearing mouse model

The platform is focusing on, but not limited to, the evaluation of the pharmacodynamics, pharmacokinetics, toxicities, immunogenicity and pharmacological properties, of the lead drugs in OncoTrap

Role: leading PI

NC Tracs grant(Li, Zibo; Jorge Olden) \$50,000

The development of ¹⁸F labelled amino acids for PET imaging of cancer

This project will select the most promising amino acid based agents for brain cancer research.

Role: leading-PI (Waiting for vertebrate animal review to release the fund).

1S10OD023611-01 (Li, Z.) 3/17/17-3/16/20 \$834,500 0 calendar months
NIH

Small Animal PET/CT for Preclinical Imaging Research

The overall goal of this S10 grant is to achieve a state of art animal PET/CT scanner for preclinical research.

Role: PI

5-R61-MH110027-02 (Dichter, G.) 2/1/17-7/31/19 1%
NIH \$633,161

Development of A Novel Transdiagnostic Intervention for Anhedonia

The overall goal of this R61/R33 project is to validate a novel transdiagnostic psychotherapy treatment for anhedonia, called Behavioral Activation Treatment for Anhedonia (BATA).

Role: co-I

*1 R21 MH110933-01 (Dichter) 9/6/16-8/31/18 0.37 calendar months
NIMH \$156,391

A Simultaneous PET/MR Study of Striatal Dopamine Binding in Autism

This grant seeks to evaluate striatal dopaminergic functioning in response to social incentives in autism spectrum disorder (ASD) through the use of simultaneous positron emission tomography (PET) and functional magnetic resonance imaging (fMRI).

R01 (Li, Fox) 10/1/2013 – 9/30/2017 \$1,367,929 10%
NIBIB/NIH

The Tetrazine Ligation for Efficient ¹⁸F Labeling and Pretargeted Imaging/Radiotherapy

The major goal of this project is to develop novel imaging methods/probes to monitor cell surface EphB4 expression non-invasively and repetitively in breast cancer.

Role: Leading-PI

Mentored Research Scholar Grant (Li) 1/1/2012 – 12/31/2016 \$729,000 60%
American Cancer Society

Integrin $\alpha 2\beta 1$ Targeted Multimodality Molecular Imaging Probes

The major goal of this project is to develop clinically translatable integrin $\alpha 2\beta 1$ targeted multimodality imaging probes for prostate cancer diagnosis and treatment monitoring.

Role: PI

SBIR (BioVinc) 5/1/2015 – 4/30/2017 \$75,000 5%
NIH

Novel bisphosphonate ¹⁸F-PET and PET/optical dual modality probes for rheumatoid arthritis imaging

The major goal of this project is to develop novel PET agents for rheumatoid arthritis imaging based on bisphosphonate compounds.

Subcontract-PI

LCCC Developmental Research Grant (Li) 1/1/2016-12/31/2016 \$50,000 N/A

Development of ¹⁸F-PET Probes to Image the IDO Pathway for Immuno-Oncology Clinical Research.

The major goal of this project is to develop novel imaging method to monitor treatment response towards cancer immunotherapy.

Role: PI

NC TraCS 5-50K Award (Jewells, Li) 10/1/2015 – 9/30/2016 \$39,144 N/A
Utilization of ¹⁸F-iNOS for In vivo Biokinetic and Disease Expression Evaluation in Cuprizone Mice.
This project will study the iNOS changes in cuprizone mice using PET probes
Role: co-PI

NC TraCS 2K Award (Li) 2/1/2015 – 1/31/2016 \$2,000 N/A
UNC: NC TraCS Institute
NTR-1 targeted imaging for prostate cancer diagnosis
The major goal of this project is to validate NTR-1 expression on prostate cancer. The \$2,000 seed fund is awarded to collect critical preliminary data for future grant application.
Role: PI

UNC-CFAC Small Instrumentation Grant (Li) 2/1/2015 – 1/31/2016 \$30,000 N/A
UNC-CFAC/UNC BRIC (\$30K)
Dedicated radio-HPLC for preclinical tracer synthesis
The major goal of this project is to obtain a dedicated radioHPLC system for preclinical tracer synthesis.
Role: PI

UNC-CFAC New Method Development (Li) 3/1/2015 – 2/28/2016 \$10,000 N/A
UNC-CFAC (\$10K)
Establish ¹⁸F-FLT production for preclinical research
The major goal of this project is to make ¹⁸F-FLT available for preclinical research.
Role: PI

1R21EB012294-01A1 (Conti) 5/1/2011 – 4/30/2014 \$445,500 15%
NIH/NIBIB
EphB4 as Novel Target for Breast Cancer Imaging
The major goal of this project is to develop EphB4 specific PET probes, to quantify EphB4 expression in breast cancer xenografts.
Role: co-I

Pilot Funding proposal (Li, Conti, Wang) 4/1/2013 – 3/31/2014 \$40,000 5%
Southern California Clinical and Translational Science Institute (SC CTSI)
Development of targeted drug-delivery vehicle based on crosslinked multilamellar liposome (CML)
The major goal of this project is to develop imaging guided delivery vehicle based on CML.
Role: Leading-PI

Wright Foundation (Li) 7/1/2013 – 6/30/2014 \$40,000 5%
Wright Foundation
Development of ¹⁸F Labeled Myocardial Perfusion PET Imaging Agents Based on BODIPY Dyes
The major goal of this project is to develop a new category of PET MPI agent based on BODIPY dyes.

Role: PI

Ming Hsieh Institute (MHI) for Engineering Medicine for Cancer (Mackay, Li) 7/1/2013 – 6/30/2014
\$80,000 5%

Ming Hsieh Institute

Diagnostic Imaging of Smart Genetically Engineered Nanomedicines (Phase II)

The major goal of this project is to combine peptide-mediated nanoparticle assembly with Positron Emission Tomography (PET) to visualize the interaction of targeted nanoparticles within the tumor.

Role: co-PI

DE-SC0002353 (Conti) 9/15/2009 – 9/14/2012 \$600,000 40%

Department of Energy

Preparation and Application of Novel Cage-Like Bifunctional Chelators for Multimodality Imaging

The major goal of this project is to develop efficient methods for the construction of novel multi-labeled molecular probes in high specific activity with potential application in biomedical, environmental, and industrial research.

Role: co-I

1R21CA142426-01 (Jadvar) 9/1/2009 – 8/31/2012 \$393,250 10%

NIH/NCI

[F-18]-FMAU PET in Prostate Cancer

The major goal of this project is to explore the potential diagnostic role of F-18-FMAU PET in xenograft and orthotopic animal models of human prostate cancer.

Role: co-I

Wright Foundation (Mackay) 6/1/2011 – 5/30/2012 \$40,000 1%

Wright Foundation/CTSI

Biomolecular Engineering of Sustained-Release Disintegrins for Cancer Therapy

The major goal of this project is to evaluate the anti-tumor potential and efficacy of the therapeutic use of a novel class of proteins, the ELP-disintegrins.

Role: co-I

MHI Pilot Grant (Mackay, Li) 10/1/2011 – 9/30/2012 \$40,000 1%

Ming Hsieh Institute

Diagnostic Imaging of Smart Genetically Engineered Nanomedicines

The major goal of this project is to combine peptide-mediated nanoparticle assembly with Positron Emission Tomography (PET) to visualize the interaction of targeted nanoparticles within the tumor.

Role: co-PI

EARLYMED/LI/YR01 (Li) 1/1/2010 – 12/31/2011 \$150,000 10%

Early (Margaret E.) Medical Research Trust

EphB4/EphrinB2 Targeted Imaging in Kaposi Sarcoma

The major goal of this project is to develop EphB4/EphrinB2 specific positron emission tomography (PET) imaging agents, to quantify EphB4/EphrinB2 expression in KS xenografts.

Role: PI

IRG-58-007-48 (Li) 6/1/2009 – 5/31/2010 \$25,000 1%

ACS

Integrin $\alpha_2\beta_1$ Targeted Imaging of Prostate Cancer

The major goal of this project is to develop an accurate noninvasive imaging technique to detect primary, recurrent, and residual prostate cancer.

Role: PI

Zumberge (Li) 6/1/2009 – 5/31/2010 \$25,000 1%

USC

Integrin $\alpha_2\beta_1$ Targeted Imaging of Prostate Cancer

The major goal of this project is to develop an accurate noninvasive imaging technique to detect primary, recurrent, and residual prostate cancer.

Role: PI

COBRE Seed Grants in Biomedical Research (Fox, Li) 7/1/2009 – 6/30/2010 \$30,988 10%

University of Delaware

The Tetrazine Ligation for the Incorporation of F-18 Probes into $\alpha_v\beta_3$ Integrin Binding Biomaterials

The major goal of this project is to develop a strategy for incorporating 18F radionuclides into biomolecules for applications in F-18 positron emission tomography (F-18 PET) using the recently developed 'tetrazine ligation', a bioconjugation that involves reaction between tetrazines and trans-cyclooctenes.

Role: subcontract-PI

8) Professional Service

Journal Review

Cancer Research, J Am Chem Soc, Nanoscale Research Letters, Nature Protocol, Mol Imaging Biol, American Journal of Nuclear Medicine and Molecular Imaging, Bioconjugate Chemistry, Bioorg Med Chem Lett, Molecular Pharmaceuticals.

Editorial Board

Cancer Growth and Metastasis, Biomarker Insights, and Breast Cancer: Basic and Clinical Research.

Advanced drug delivery reviews (Special issue editor), American Journal of Nuclear Medicine and Molecular Imaging, E-Journal of Chemistry, Organic Chemistry: Current Research, Radiology-Open Access

Grant review

NIH/ ZCA1 SRB-X (02/2021), NIH/HEI-S10 (11/2020), NIH/ ZCA1 SRB-X (10/2020), CDMRP LCRP CTRP(09/2020), FY20 PRMRP PRE-VID-2 (06/2020), NIH/ ZCA1 SRB-X (O2) S (06/2020), NIH/ ZCA1 SRB-X (M1) S (1/2020), DOD/LCRP H-CRC (11/2019), DOD/LCRP-TRP (10/2019), NIH ZCA1 SRB-P (J1) 10/2019; S NIH/NIBIB (NIBIB Resources for Technology Dissemination (U24), 07/2019), NIH 2019/10 ZCA1 SRB-X(O1)S (06/2019), NIH/NIBIB P41 (02/2019), Z-NSERC-Chemistry (12/2018, canada), DOD CON-DDP panel (10/2018), NIH/NIGMS - COBRE Phase I (07/2018), NIH/SBIB-H56 (02/2018), NIH/CBSS (02/2018), NIH/CMIP(02/2018), DOD/LCRP (11/2017), NIH/SBIB-D03 (10/2017), NIH/SBIB-Z07

(10/2017), NIH/CMIP(09/2017), NIH/CBSS (10/2017), NIH/ NIH/SBIB-Z03 (6/2017), NIH/NIBIB P41 (03/2017), NIH ZRG1 SBIB-Z (03) (12/2016), DOD (2016), NIH ZRG1 SBIB-F (56) R (06/2016), National Science Center, Poland (04/2016), NIH ZEB1 OSR-F (M1) (03/2016), ZRG1 SBIB-Z (55) (11/2015), NIH ZRG1 SBIB-Z (03) (10/2015), NIH CMIP (10/2015, 02/2015), NIH SBIS-W59 (10/2015, 02/2015), ZRG1 SBIB-Z (03)S (10/2014), SC CTSI grant (2012, 2013), DOD BCRP Idea/Idea expansion award (2013), DOD BCRP post-doc fellowship (2013), Austrian Science Fund (FWF) (2012).

Committee Member

UNC Radioactive Drug Research Committee (RDRC)

Society Memberships

American Chemical Society (ACS), Society of Nuclear Medicine (SNM).

Research Statement

Molecular imaging is a novel multidisciplinary field involving molecular and cell biology, radiochemistry and bioconjugation chemistry, pharmacology, and image-capture techniques, etc. My major focus has been on molecular imaging. My future research would be the extension of my previous research efforts and explore those underdeveloped fields in molecular imaging.

A. Novel Positron Emission Tomography (PET) Probe Development and Translation

I developed novel fluorination methodologies for making novel PET probe, which includes:

- 1) In collaboration with Dr. David Nicewicz, I discovered a novel method that is suitable for ^{18}F labeling of organic aromatics by direct C-H activation (*Science* 2019, 364(6446):1170-1174). Using this method, new PET agents could be easily obtained from existing drug molecules in many cases. F-DOPA could also be made easily through one step fluorination followed by deprotection.
- 2) In collaboration with Dr. Francois Gabbai, I established a simple way to produce ^{18}F -BODIPY dyes as a PET/FL dual modality tag (*Chem Commun*, **2011**, 47(33):9324-6.). This technology seamlessly integrate the PET with FL technology and may combine the advantages of each one. Following this initial report, us and other people including Ralph Weissleder reported modified approaches.
- 3) In collaboration with Dr. Joseph Fox, I have established a ultra-efficient ^{18}F labeling that could be widely used for generating ^{18}F labeled peptides, proteins, and antibody fragments in high radiochemical yield and specific activity (*Chem Commun*, **2010**, 46, 8043-8045). This method could be used as a high-throughput method and click chemistry for imaging agent development. The tetrazine-TCO labeling system could generate ^{18}F labeled proteins with high molar activity, which eliminate potential blocking effect of a low molar activity tracer.

I made novel PET probe based on existing methods, which includes:

- 4) Dual/multi targeting approach for developing novel PET imaging probe.
- 5) Design and synthesize imaging probes based on newly discovered binding ligands for existing cancer markers.
- 6) Design and synthesize imaging probes for newly discovered cancer markers.
- 7) Develop $^{18}\text{F}/^{11}\text{C}/^{64}\text{Cu}$ labeled drugs or small organic molecules that are potentially useful for cardiovascular imaging, neurological imaging, or treatment monitoring.

B. Molecular Cancer Therapy

I am also working on the development of targeted drug delivery system for cancer therapy. In detail, I am developing various imageable carriers (especially protein, polymer and nanoparticle-based) for receptor mediated delivery of chemo, radio and gene therapeutics. Carriers include nanoparticle, macrophages, plant virus, phages etc.

C. Multimodality Imaging Probes

Each molecular imaging modality offers its own unique set of advantages and disadvantages with regards to anatomic, functional, and resolution parameters. With the development of multi-labeled imaging probes, the same molecular target can be evaluated with two or more different imaging modalities. This allows the strengths of each modality to be combined, thereby improving diagnostic accuracy and providing greater

insight into underlying disease processes. I also devote effort on developing multimodality imaging probes, especially on PET/FL and MRI/PET dual modality probes.

D. Instrumental set up for ^{18}F -labeling

Home-made semi-automatic module would be set up to meet the requirement of certain special reaction.

E. Production of PET tracer for clinical usage. I am very experienced on setting up labs and provide cGMP grade agents to clinic.

Teaching Statement

My teaching experience spans from undergraduate level course to undergraduate/graduate/post-doc level research guidance. I have experience in guiding the undergraduate organic chemistry lab with 10 to 25 students per section. I also instruct an undergraduate student to carry out research work in the lab and we got a paper published in Tetrahedron Letter. Currently, I am very actively delivering lectures to graduate courses and summer camps, hosting high school students as summer interns, and working closely with postdocs and visiting scholars in the lab to guide their research. Based on my previous experience, **fostering enthusiasm for learning and independent thinking, maintaining high quality instruction and ensuring fair treatment for all students** would be my major philosophy to obtain quality teaching in university.

1) Facilitating active learning and enthusiasm. I seek to keep the students become engaged and willing to learn as much as they can. I will be passionate about teaching and I will pass this passion to my students through teaching. I prefer to motivate students by helping them to make connections between the current learning material and their future professional knowledge and skills set. I will open a discussion section which will also allow me to provide attention to each individual student.

2) Employing various teaching techniques. The students could learn best through active participation. I will try to get the students fully engaged in the learning process, keep them focused by raising questions occasionally, and encourage them communicate with other classmates. Other teaching techniques will also be employed, such as asking them to give a short presentation, solving some easy questions on the blackboard, and split students into small groups for discussion et al. Moreover, additional information would also be provided as a handout or a reference paper.

3) Employing advanced educational technology. The learning process could also benefit from modern techniques. I will use appropriately placed visualization tools, such as a cartoon or movie, to help the student understand difficult concepts. These techniques can result in a more efficient education and make the learning experience more interesting, valid and relevant. The notes of my class would be put on-line for student convenience.

4) Encouraging the students' independent thinking. I will provide the students an opportunity for active learning. Instead of giving the solution directly to them, I will help them analyse the problem, guide them through it, and encourage them construct a complete answer by themselves.

5) Facilitating team- and project-based learning and encouraging learner cooperation. In addition to independent thinking, I would assign some team-based projects as collaborative effort is also critical to success. The students could work in parallel, collaborate, and learn from each other. I will also encourage the student taking opportunities for cross-course integration and helping them to acquire essential by-product knowledge and skills.

6) Delivering cutting-edge content in graduate courses. Whenever appropriate, I will use the material found in recent research publications to illustrate key theoretical concepts and applications.

7) Feedbacks. Instead of waiting for the feedback at the very end, I would get them from the student in the middle, and adapt my teaching accordingly. In other words, I will adjust my teaching based on changing conditions, rather than adhering to a single framework.

I will introduce my expectations at the first date of my class, make it clear about all the exceptional situations, and illustrate the assignments and grading policies. I will try my best to ensure the fair treatment for all students.