Benjamin P. Lopez, Ph.D.

Curriculum Vitae

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Education & Research Experience

Medical Physics Fellow. *Dept. of Imaging Physics*. *MD Anderson Cancer Center*. Houston. Mentor: S. Cheenu Kappadath, Ph.D.	**Present - 2022**
Ph.D., Medical Physics. *MD Anderson Cancer Center UTHealth GSBS*. Houston. Thesis: Absolute quantification of ^{99m}Tc activity distributions using a planar Molecular Breast Imaging commercial system Advisor: S. Cheenu Kappadath, Ph.D.	**2022 - 2015**
B.S., Bioengineering. *Rice University*. Houston. Design Capstone: *Rice U., Dept. Engineering*. Procyrion Inc. (Industry Collaborator) Research Assistant: *MDACC, Dept. Imaging Physics*. Osama Mawlawi, Ph.D. (Mentor) Research Assistant: *Texas Women's University, Dept. Physical Therapy*. Shuo-Hsiu Chang, P.T./Ph.D. & Shih-Chiao Tseng, P.T./Ph.D. (Mentors)	**2015 - 2011**

Peer-Reviewed Publications

11. **Lopez BP**, Kappadath SC. Tumor ^{99m}Tc uptake quantification with commercial planar MBI. Part I: activity concentration and SUV_b. *Med Phys* (2022). [Under Review]

10. **Lopez BP**, Kappadath SC. Tumor ^{99m}Tc uptake quantification with commercial planar MBI. Part I: absolute activity. *Med Phys* (2022). [Under Review]

9. **Lopez BP**, Rauch GM, Adrada B, Kappadath SC. Functional tumor diameter measurement with Molecular Breast Imaging: Development and clinical application. *Biomed Phys Eng Express* (2022) 8: 055026. DOI: 10.1088/2057-1976/ac85f0.

8. **Lopez BP**, Mahvash A, Long JP, Lam MGEH, Kappadath SC. Factors modulating ^{99m}Tc-MAA planar lung dosimetry for 90Y-radioembolization. *J Appl Clin Med Phys* (2022). e13734. DOI: 10.1002/acm2.13734.

7. Kappadath SC, **Lopez BP**. Organ-level internal dosimetry for intra-hepatic-arterial administration of ^{99m}Tc-macroaggregated albumin. *Med Phys* (2022) 1-9. DOI: 10.1002/mp.15726.

6. Kappadath SC, **Lopez BP**, Salem Riad, Lam MGEH. Reassessment of the lung dose limits for radioembolization. *Nucl Med Commun* (2021) 42(10): 1064-1075. DOI: 10.1097/MNM.0000000000001439.

5. Kappadath SC, **Lopez BP**, Salem Riad, Lam MGEH. Lung shunt and lung dose calculation methods for radioembolization treatment planning. *Q J Nucl Med* (2021) 65(1): 32-42. DOI: 10.23736/S1824-4785.20.03287-2.

4. **Lopez BP**, Guan F, Rauch GM, Kappadath SC. Monte Carlo simulation of pixelated CZT detector with Geant4: validation of clinical molecular breast imaging system. *Phys Med Biol* (2021) 66: 125009. DOI: 10.1088/1361-6560/ac0588.

3. **Lopez BP**, Jordan DW, Kemp BJ, Kinahan PE, Schmidtlein CR, Mawlawi OR. PET/CT acceptance testing and quality assurance: Executive summary of AAPM Task Group 126 Report. *Med Phys* (2021) 48(2): e31-e35. DOI: 10.1002/mp.14656.

Peer-Reviewed Publications (continued)

2. **Lopez BP**, Mahvash A, Lam MGEH, Kappadath SC. Calculation of lung mean dose and quantification of error for ^{90}Y-microsphere radioembolization using ^{99m}Tc-MAA SPECT/CT and diagnostic chest CT. *Med Phys* (2019) 46(9): 3929-3940. DOI: 10.1002/mp.13575.

1. Wendt III RE, Hua AA, Meier JG, **Lopez BP**, Fahrenholtz SJ, Mawlawi OR. A measurement of the attenuation of radiation from ^{18}F by a PET/MR scanner. *J Appl Clin Med Phys* (2018) 19(6): 336-340. DOI: 10.1002/acm2.12479.

Scientific Presentations

22.	Mahvash A, Henry EC, **Lopez BP**, et al. Radioembolization for HCC patients with Personalized Yttrium-90 Dosimetry for curative intent (RAPY90D): an interim analysis. *Hepatology* (2022). [oral]	**AASLD 2022**
21.	**Lopez BP**, Rauch GM, Adrada BA, Kappadath SC. Functional tumor diameter measurement with Molecular Breast Imaging. *J Nucl Med* (2022). [oral]	**SNMMI 2022**
20.	**Lopez BP**, Kappadath SC. Absolute 99mTc tumor activity uptake quantification with Molecular Breast Imaging. *J Nucl Med* (2022). [poster/ePoster]	
19.	Kappadath SC, Henry EC, **Lopez BP**, et al. Radioembolization for HCC patients with Personalized Yttrium-90 Dosimetry for curative intent (RAPY90D): an interim analysis. *J Nucl Med* (2022). [oral]	
18.	Patel MM, Adrada BE, **Lopez BP**, *et al*. Quantitative Molecular Breast Imaging for early prediction of neoadjuvant systemic therapy response in locally advanced breast cancer patients. *San Antonio Breast Cancer Symposium* (2021). [ePoster]	**SABCS 2021**
17.	**Lopez BP**, Rauch GM, Kappadath SC. Automatic tumor functional diameters with Molecular Breast imaging for treatment response assessments. *Med Phys* (2021) 48(6): e168. [oral]	**AAPM 2021**
16.	Kappadath SC, **Lopez BP**, Mahvash A. Organ doses following intra-hepatic-arterial administration of 99mTc-MAA in planning dosimetry for 90Y-SIRT. *Med Phys* (2021) 48(6): e141. [oral]	
15.	**Lopez BP**, Guan F, Rauch GM, Kappadath SC. Tumor specific 99mTc-sestamibi quantification in molecular breast imaging with Monte Carlo simulations. *Med Phys* (2020) 47(6): 2645. [ePoster]	**AAPM 2020**
14.	**Lopez BP**, Mahvash A, Long JP, Lam MGEH, Kappadath SC. Improving the accuracy of predicted lung dosimetry in 90Y-microsphere radioembolization with 99mTc-MAA planar scintigraphy. Med Phys (2020) 47(6): 2651. [ePoster]	
13.	Kappadath SC, **Lopez BP**, DiTusa R, Braat AJAT, Mahvash A, Toskich B. Parametric model adjustment of prescribed mean radiation dose to ensure complete coverage at tumor margins during ablative 90Y-radioembolization. *Med Phys* (2020) 47(6): 2630. [ePoster]	
12.	Thomas MA, **Lopez, BP**, Neff A, Mahvash A, Kappadath SC. Predicting new Y90 administered activity in 90Y-radioembolization from post-therapy 90Y-SPECT/CT images. *Med Phys* (2020) 47(6): 2623. [oral]	
11.	Kappadath SC, **Lopez BP**, Mahvash A. A Novel Lung Dose Calculation Methodology for Y90-Radioembolization using diagnostic chest-CT and Tc99m-MAA SPECT/CT. *JVIR* (2019) 30(3): s144-145. [oral]	**SIR 2019**
10.	Beijst C, **Lopez BP**, de Jong HWAM, Kappadath SC. Y-90 PET/CT with Long Axial Field-Of-View Digital Detectors. *Med Phys* (2019) 46(6): e194. [oral]	**AAPM 2019**
9.	Kappadath SC, **Lopez BP**, Mahvash A. A novel lung dose calculation methodology with precision analysis for 90Y-radioembolization using diagnostic chest-CT and 99mTc-MAA SPECT/CT. *Eur J Nucl Med Mol Imaging* (2018) 45(suppl 1): S196. [oral]	**EANM 2018**
8.	**Lopez BP**, Mahvash A, Kappadath SC. Novel SPECT/CT-based lung dose calculation for treatment planning in 90Y-microsphere radioembolization therapy. *Med Phys* (2018) 45(6): e390. [oral]	**AAPM 2018**

Scientific Presentations (continued)

7.	**Lopez BP**, Balagopal A, Mahvash A, Kappadath SC. Evaluation of errors in common lung mass estimation methods used for lung mean dose (LMD) calculation in 90Y-microsphere therapy planning. *J Nucl Med* (2018) 59(suppl 1): 1706. [poster]	**SNMMI 2018**
6.	**Lopez BP**, Kappadath SC. Improving the sensitivity of molecular breast imaging using a novel detector response function. *J Nucl Med* (2018) 59: 581. [oral]	
5.	Kappadath SC, **Lopez BP**, Adrada B, Hess K, Rauch G. Prediction of breast tumor response to neoadjuvant chemotherapy through quantitative 99mTc sestamibi Molecular Breast Imaging (MBI). *Eur J Nucl Med Mol Imaging* (2017) 44(suppl 2): 5660. [oral]	**EANM 2017**
4.	**Lopez BP**, Rauch G, Adrada B, Bache S, Hess K, Kappadath SC. Quantification of in vivo tumor uptake in clinical molecular breast imaging (MBI) examinations. *Med Phys* (2017) 44(6): 3263. [oral]	**AAPM 2017**
3.	Bache S, **Lopez BP**, Rauch G, Adrada B, Jessop A, Kappadath SC. Quantification of tumor uptake with molecular breast imaging. *Eur J Nucl Med Mol Imaging* (2016) 43 (Suppl 1): S149. [oral]	**EANM 2016**
2.	Meier J, **Lopez BP**, Mawlawi O. Impact of 4D PET/CT on PERCIST Classification of Lung and Liver Metastases in NSCLC and Colorectal Cancer. *Med Phys* (2016) 43(6): 3460. [poster]	**AAPM 2016**
1.	Lorsakul A, Li Q, Mawlawi O, **Lopez BP**, Laine A, El Fakhri G. The assessment of lesion detection on respiratory-gated clinical PET/CT using 4D numerical observer. *J Nucl Med* (2015) 56(suppl 3): 371. [oral]	**SNMMI 2015**

Awards

John R. Cameron Young Investigator Finalist: Oral Presentation. Novel SPECT/CT-based lung dose calculation for treatment planning in 90Y-microsphere radioembolization therapy.	**AAPM 2018**
1st Place Instrumentation and Data Analysis Track: Poster Presentation. Evaluation of errors in common lung mass estimation methods used for lung mean dose calculation in ^{90}Y-microsphere therapy planning.	**SNMMI 2018**
Allen Trustee Distinguished Scholarship. Rice University	**2011-2015**

Teaching & Mentorship Experience

Teaching Assistant. *Rice University*. Course: Fundamentals of Medical Imaging I (BIOE 485, Fall Semesters) Instructor: Mawlawi O, PhD	**2018 - 2020**
First-Generation Student Group. *MDACC UTHealth GSBS.* Member.	**Present - 2015**
First-Year Student Mentor. *MDACC UTHealth GSBS, Medical Physics Program*. "Big Sister/Big Brother" mentor to incoming Ph.D. candidate student.	**Fall 2017**