

# Sheryl Roberts, MChem, Ph.D.

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## Education

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### Postgraduate Training

11/2020 – present Research Associate, Reiner & Pillarsetty Lab Department of Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, USA

12/2017 – 10/2020 Research Scholar, Thomas Reiner Lab, Department of Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, USA

### Education

10/2013 – 11/2017 Ph.D. in Medical Life Science and Technology, School of Medicine, Technische Universität München, Munich, Bavaria, Germany  
Mentor: Gil G. Westmeyer, Ph.D., Thesis Committee: Vasilis Ntziachristos, Ph.D., Thorsten Bach, Ph.D., External: Agnes Görlach, Ph.D.

09/2006 – 06/2011 Masters in Chemistry with Medicinal Chemistry (MChem (*Hons*)), Department of Chemistry, University of St. Andrews, St. Andrews, Fife, Scotland

## Hospital or Other Professional Appointments

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09/2020 – present Chief Fellow, Department of Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, USA

11/2016 – 11/2017 Graduate Research Assistant, Mentor: Thomas Reiner Lab, Department of Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, USA

11/2012 – 11/2016 Guest Researcher, Mentor: Gil Westmeyer Lab, Institute of Medical Imaging and Biology (IBMI), Helmholtz Zentrum München (HMGU), Neuherberg, Munich, Germany

11/2012 – 11/2016 Ph.D. Candidate, Mentor: Gil Westmeyer Lab, School of Medicine, Technische Universität München (TUM), Munich, Bavaria, Germany

10/2011 – 05/2012 Science and Engineering Program in Law Trainee, Industrial Chemistry Processes, European Patent Office (EPO), Munich, Bavaria, Germany

09/2009 – 08/2010 Industrial Placement, Agfa-Gevaert Group N.V., Physics and Analytics Group Antwerp, Belgium

06/2008 – 08/2008 Summer Intern, Ceimig Ltd., Fine Chemicals, Dundee, Scotland

02/2008 – 05/2008 Undergraduate Research Intern, University of St. Andrews, Department of Chemistry, St. Andrews, Fife, Scotland

## Professional Society Memberships

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2018 – present Member of New York Academy of Sciences (NYAS)  
2018 – present Member of American Association for the Advancement of Science (AAAS)  
2017 – present Member of World Molecular Imaging Conference (WMIC)  
2013 – present Member of European Molecular Imaging Meeting (EMIM)  
2013 – 2016 Amnesty International Munich  
2006 – present Member of Royal Society Chemistry (RSC)

## Honors / Awards

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2021 ITARSc Award 2021, Radiological Society of North American (RSNA), Travel \$1000, one applicant per department, USA

2016 Laura-Bassi Award, Technische Universität München, Germany  
Research stipend (salary + consumables) support for outstanding women in science

2016 EXCITE: Biomedical Imaging, ETH Zürich, Zurich, Switzerland  
Summer school as one of the top 50 selected applicants worldwide. Travel and full board accommodation support

2016 Executive MBA in Innovation & Business Creation Scholarship, Technische Universität München, Munich, Germany, Awarded €19,500, part-time and modular in tandem with Ph.D., I declined.

2014 Sino-German DFG Travel Award, German Research Foundation, DGF-funded all-inclusive travel and accommodation to The Third Military Medical University (TMMU), Chongqing, China

2013 Life Science and Technology Award, Faculty of Medicine, Technische Universität München, Munich, Germany, 1st ranked Ph.D. candidate in the program, 1-year fellowship (salary and €5000 for consumables)

2013 Medical Life Science and Technology Program, Faculty of Medicine, Technische Universität München, Munich, Germany, highly competitive Ph.D. training program at TUM

2009 Erasmus+ Mobility Award, British Council, UK, Award for promoting International Work Relationship, 1-year monetary monetary support for living in Antwerp, Belgium

## Biographical Citations

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2020 Ones to Watch 2020, Society of Nuclear Medicine and Molecular Imaging (SNMMI)  
Nominated and awarded as “Ones to Watch” in 2020  
<https://www.snmmi.org/NewsPublications/NewsDetail.aspx?ItemNumber=33498>

## **Teaching**

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### **Graduate (Masters, Ph.D., Pharm. D., etc.)**

06/2021– present Weill Cornell Medicine, Ph.D. Candidate, Justin Hackey, support mentor, oversee the project with fluorescent molecules targeting ATM, Lewis Laboratory, MSK, NY, USA

09/2019 – 02/2020 University of Vienna, Master Student, coordination chemistry, analytical chemistry, Reiner Laboratory, MSK, NY, USA

02/2017 – 06/2017 Manipal Academy of Higher Education, Master Student, “Characterization of Near-infrared dyes”, Data analysis training and writing – 1 published paper together, 1st ranked in Master Thesis class, Reiner Laboratory, MSK, NY, USA

### **Pre-Medical Student**

04/2018 – 07/2020 Navjot Guru, train day-to-day laboratory activities, Reiner Laboratory, MSK, NY, USA  
Current Position: DO/Ph.D., New York Institute of Technology

11/2016 – 07/2018 Patrick Donabedian, radiochemistry training, Data analysis training and writing – 1 published paper together, Reiner Laboratory, MSK, NY, USA  
Current Position: Medical Student, University of Florida.

### **Undergraduate**

06/2021 – 08/2021 Berkeley University, Undergraduate Student, Kaitlin Rhee, “Synthesis and purification of Affibodies”, direct mentor, training day-to-day activities, Pillarsetty Lab, MSK, NY, USA

09/2019 – 06/2021 Hunter College, Undergraduate Student, Cien Huang, confocal microscopy and cell culture techniques, training for figures and manuscript writing – 1 published together, in preparation, Reiner Laboratory, MSK, NY, USA

06/2020 – 08/2020 Binghamton University, Undergraduate Student, Nina R. Filippone, trained in writing review during COVID lockdown – 1 published paper together, Reiner Laboratory, MSK, NY, USA

06/2019 – 08/2019 Rochester University, Dylan Manuele, HPLC training, Reiner Laboratory, MSK, NY, USA

11/2016 – 05/2019 Hunter College, Undergraduate Student, Crystal Choi, “Synthesis of Near-infrared Nanoemulsions”, Data analysis training and writing – 1 published paper together, Reiner Laboratory, MSK, NY, USA

### **Lab Technician**

06/2021 – present Delissa Johnson, train day-to-day laboratory activities, mouse handling and in vivo work, Pillarsetty Lab, MSK, NY, USA

09/2020 – present Tara Viray, direct teaching on cell culture techniques and purification techniques, direct mentor for “PARPi-FL stability in various conditions”, figures and manuscript training, Reiner Laboratory, MSK, NY, USA

### **High School Student**

06/2017 – 08/2017 Abby Hunt, “Evaluation of logP of near infrared red dyes”, under my direct mentorship, Reiner Laboratory, MSK, NY, USA

### **Research**

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#### **Submitted – Not Funded**

- NIH K99/R00 Pathway to Independence Award- discussed and scored (impact score 39)  
Mentor: Jason S. Lewis, Ph.D., Co-mentors: Jan Grimm, M.D. Ph.D.; Snehal Patel, M.D.; and Nancy Lee, M.D.

### **Publications**

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#### **Peer Reviewed**

#### **Original Observations**

1. A. Sahu\*, J. Cordero, X. Wu, S. Kossatz, U. Harris, PDS França, N. Kurtansky, N Everett, S. Dusza, J. Monnier, P. Kumar, C. Alessi-Fox, C. Brand, S. Roberts, K. Kose, W. Phillips, E. Lee, C.J. Chen, A. Rossi, K. Nehal, M. Pulitzer, C. Longo, A. Halpern, T. Reiner, M. Rajadhyaksha, M. Jain\*, Combined PARP1-targeted nuclear contrast and reflectance contrast enhances confocal microscopic detection of human basal cell carcinoma, *J. Nucl. Med.*, 2021, just accepted, PMID: 34649941, DOI: 10.2967/jnumed.121.262600, IF: 10.06
2. T. Wilson, G. Pirovano, G. Xiao, Z. Samuels, S. Roberts, T. VirayΨ, N. GuruΨ, P. Zanzonico, M. Gollub, T. Reiner\*, J. Bargonetti\*, PARP Targeted Auger Therapy in p53 Mutant Colon Cancer Xenograft Mouse Models, *Mol. Pharmaceutics*, 2021, 18(9), 3418-3428, PMID: 34318678, DOI: 10.1021/acs.molpharmaceut.1c00323, IF: 4.94
3. C. Huang#, N.R. Filippone#, T. Reiner, S. Roberts\*, Sensors and Inhibitors for the Detection of Ataxia Telangiectasia Mutated (ATM) Protein Kinase, *Mol. Pharmaceutics*, 2021, 18, 7, 2470-2481, PMID: 34125542, DOI: 10.1021/acs.molpharmaceut.1c00166, IF: 4.94
4. PDS. França, S. Kossatz, C. Brand, D. Zanoni Karassawa, S. Roberts, N. GuruΨ, D. Adilbay, A. Mauguen, C. Mayor Valero, WA Weber, H. Schöder, RA Ghossein, I. SG. Patel\*, T. Reiner\*, A phase I study of a PARP1-targeted topical fluorophore for the detection of oral cancer, *Eur J Nucl Med Mol Imaging*, 2021, 48 (11), 3618- 3630, PMID: 33954826, DOI: 10.1007/s00259-021-05372-6, IF: 7.23  
→ Phase I Clinical Trial Results (NCT03085147)
5. S. Roberts, E. Khera, C. Choi#, T. Navaratna, J. Grimm, GM. Thurber, and T. Reiner\*, Optoacoustic imaging of GLP-1 Receptor with a near-infrared exendin-4 analog, *J. Nucl. Med.*, 2021, 62(6), 10, PMID: PMC8729860, DOI: 10.2967/jnumed.120.252262, IF: 10.06

6. PDS. França, N. Guru, AR. Kostolansky, A. Mauguen, G. Pirovano, S. Kossatz, S. Roberts, M. Abrahao, SG. Patel, T. Reiner\*, and E. Jewell\*, Poly(ADP-ribose)polymerase1: A potential molecular marker to identify cancer during colposcopy procedures, *J. Nucl. Med.*, 2021, 62(7), 941- 948, PMID: 33188153, DOI: 10.2967/jnumed.120.253575, IF: 10.06
  - ➔ Invited for journal video promotion
7. RJ. Young‡, PDS. França‡, G. Pirovano, AF. Piotrowski, PJ. Nicklin, CC. Riedl, JSchwartz, TA. Bale, PL. Donabedian, S. Kossatz, EM Burnaz, S. Roberts, SK. Lyashchenko, AM. Miller, NS. Moss, M. Fiasconaro, Z. Zhang, A. Mauguen, T. Reiner\*, and M.P. Dunphy\*, Preclinical and first-in-human-brain-cancer applications of [18F]poly-(ADP-ribose) polymerase inhibitor PET/MR, *Neuro-Oncology Advances*, 2020, 2, 1, vdaa119, PMID: 33392502, DOI: 10.1093/noajnl/vdaa119
  - ➔ Phase I Clinical Trial Results (NCT04173104)
8. PMR. Pereira‡, S. Roberts‡, F. Figueira, JPC. Tome, T. Reiner, JS. Lewis\*, PET/CT imaging with a 18 F-labeled galactodendritic unit in a galectin-1 overexpressing orthotopic bladder cancer model, *J. Nucl. Med.*, 2020, 61(9), 1369-1375, PMID: 32005776, DOI: PMC7456169, IF: 10.06
  - ➔ ‡ These authors contributed equally to this work
9. PDS. França, S. Roberts, S. Kossatz, N. Guru, C. Mason, DK. Zanoni, M. Abrahão, H. Schöder, I. Ganly, SG Patel, T. Reiner\*, Fluorine-18 labeled poly (ADP-ribose) polymerase1 inhibitor as a potential alternative to 2-deoxy-2-[<sup>18</sup>F]fluoro-d-glucose positron emission tomography in oral cancer imaging, *Nuclear Medicine and Biology*, 2020, 84-85, 80-87, PMID: 32135475, DOI: 10.1016/j.nucmedbio.2020.01.004, IF: 2.41
10. PDS. França, N. Guru, S. Roberts, S. Kossatz, C. Mason, M. Abrahão, RA. Ghossein, SG. Patel, T. Reiner\*, Fluorescence-guided resection of tumors in mouse models of oral cancer, *Scientific Reports*, 2020, 10, 11175, 202, PMID: 32636416, DOI: 10.1038/s41598-020-67958-8, IF: 4.0
11. HM. Schöder, PDS. França, R. Nakajima, EM Burnazi, S. Roberts, C. Brand, M. Grkovski, A. Mauguen, MPS Dunphy, R. Ghossein, SK Lyashchenko, JS Lewis, JA O'Donoghue, I. Ganly, SG. Patel, LY Nancy, T. Reiner\*, Safety and feasibility of PARP1/2 imaging with 18F-PARPi in patients with head and neck cancer, *Clinical Cancer Research*, 2020, 26, 3110-6, PMID: 32245901, DOI: 10.1158/1078-0432.CCR-19-3484, IF: 10.11
  - ➔ Phase I Clinical Trial Results (NCT03631017)
12. K. Haedicke, L. Agemy, M. Omar, A. Berezhnoi, S. Roberts, C. Longo-Machado, M. Skubal, K. Nagar, H. Hsu, K. Kim, T. Reiner, J. Coleman, V. Ntziachristos, A. Scherz, J. Grimm\*, High-resolution optoacoustic imaging of tissue responses to vascular-targeted therapies, *Nature Biomedical Engineering*, 2020, 4, 286-297, PMID: 32165736, DOI: 10.1038/s41551-020-0527-8, IF: 18.95
  - ➔ Front cover, March Issue 3
  - ➔ Highlighted in several news outlets
13. S. Roberts, A. Strom#, C. Choi#, C. Andreou, S. Kossatz, C. Brand, T. Williams, M. Bradbury, MF. Kircher, YK. Reshetnyak, J. Grimm, JS. Lewis, T. Reiner\*, Acid specific dark quencher QC1 pHLLIP for multi-spectral optoacoustic diagnoses of breast cancer, *Scientific Reports*, 2019, 9(1), 8550, PMID: 31189972, DOI: 10.1038/s41598-019-44873-1, IF: 4.0
14. G. Pirovano, S. Roberts, T. Reiner\*, TOPKi-NBD: a fluorescent small molecule for tumor imaging, *Eur J Nucl Med Mol Imaging*, 2019, 47, 1003-1010, PMID: 31734783, DOI: 10.1007/s00259-019-04608-w, IF: 7.23

15. G. Pirovano, S. Roberts, C. Brand, PL. Donabedian, C. Mason, PDS Franca, GS Higgins, T. Reiner\*, [18F]FE-OTS964: a Small Molecule Targeting TOPK for In Vivo PET Imaging in a Glioblastoma Xenograft Model, *Molecular Imaging and Biology*, 2019, 21(4), 705-712, PMID: 30357568, DOI: 10.1007/s11307-018-1288-6, IF: 3.34

16. E. Khera‡, L. Zhang‡, S. Roberts, I. Nessler, D. Sandoval, T. Reiner, G. Thurber\*, Blocking Glucagon Like Peptide-1 Receptors in the Exocrine Pancreas Improves Specificity for Beta Cells in a Mouse Model of Type 1 Diabetes, *J. Nucl. Med.*, 2019, 60(11), 1635-1641, PMID: 31076502, DOI: 10.2967/jnumed.118.224881, IF: 10.06

17. S. Roberts, C. Andreou, C. Choi#, P. DonabedianΨ, M. Jayaraman≠, EC Pratt, J. Tang, C. Pérez-Medina, MJ. Cruz, WJM Mulder, J. Grimm, M. Kircher, T. Reiner\*, Sonophore-enhanced nanoemulsions for optoacoustic imaging of cancer, *Chem. Sci.*, 2018, 9(25), 5646-5657, PMID: 30061998, DOI: PMC6049522, IF: 9.35

18. J. Gonzales, S. Kossatz, S. Roberts, G. Pirovano, C. Brand, C. Pérez-Medina, P. Donabedian, MJ. Cruz, WJM Mulder, T. Reiner\*, Nanoemulsion-based delivery of fluorescent PARP inhibitors in mouse models of small cell lung cancer, *Bioconjugate Chem.*, 2018, 29(11), 3776-3782, PMID: 30354077, DOI: 10.1021/acs.bioconjchem.8b00640, IF: 4.35

19. S. Roberts, M. Seeger, Y. Jiang, A. Mishra, F. Sigmund, A. Stelzl, A. Lauri, P. Symvoulidis, H. Rolbieski, M. Preller, XL Deán-Ben, D. Razansky, T. Orschmann, SC Desbordes, P. Vetschera, T. Bach, V. Ntziachristos, G.G Westmeyer\*, Calcium Sensor for Photoacoustic Imaging, *J. Am. Chem. Soc.*, 2018, 140(8), 2718-2721, PMID: 28945084, DOI: 10.1021/jacs.7b03064, IF: 15.42

- ➔ Front cover, Feb, Issue 8
- ➔ Highlighted in several news outlets

20. A. Mishra, Y. Jiang, S. Roberts, V. Ntziachristos, G.G Westmeyer\*, Near-infrared photoacoustic imaging probe responsive to calcium, *Anal. Chem.*, 2016, 88(22), 10785-10789, PMID: 27779396, DOI: 10.1021/acs.analchem.6b03039, IF: 6.79

21. RA. Aitken, G. Barker, LP Cleghorn, EJ Reid, S. Roberts, Formation of unexpected heterocyclic products from pyrolysis of thiocarbonyl stabilized phosphonium ylides, *Heterocycles*, 2014, 88(2), 1135-1147, IF: 1.08

## **Review Articles**

1. G. Pirovano, S. Roberts, S. Kossatz, T. Reiner\*, Optical imaging modalities: principles and applications in preclinical research and clinical settings, *J. Nucl Med.*, 2020, 61(10), 1419- 1427, PMID: 32764124, DOI: 10.2967/jnumed.119.238279, IF: 10.06
  - ➔ Continuing Education (invitation only), invited review

## Theses

1. S. Roberts, "Design and Synthesis of Calcium Sensors for Photoacoustic Imaging", Ph.D. Thesis, Technische Universität München (TUM), Munich, Germany, Chair of Biological Imaging, DOI: <http://mediatum.ub.tum.de/?id=1506222>, Mentor: Dr. Gil G. Westmeyer, Thesis Committee: Dr. Vasilis Ntziachristos, Dr. Thorsten Bach, 2017
2. S. Roberts, "Syntheses of New Chiral Ligands from  $\beta$ -thiocarbonyl Phosphonium Ylides". MChem Thesis, University of St. Andrews, St. Andrews, UK, Department of Chemistry, Mentor: Dr. Alan A. Aitken, 2011
3. S. Roberts, "Determination of Hansen Solubility Parameters (HSP) of Different Amigo II Plate Components to Quantify Chemical Resistance", Physics and Analytics Group, AGFA N.V., 52-page company thesis, Mortsel, Antwerpen, Belgium, Mentor: Bart Wuytens, 2010
4. S. Roberts, "The Effect of Co-solvents and Varying its Concentration on the Stability of Dispersion Inks", Physics and Analytics Group, AGFA N.V., 46-page company thesis, Mortsel, Antwerpen, Belgium, Mentor: Bart Wuytens, 2009
5. S. Roberts, "Determining the Mechanism for the Formation of Titanate Nanotubes using SEM and HRTEM for Scanning Process and Image Formation", Undergraduate Research Thesis, University of St. Andrews, St. Andrews, UK, Department of Chemistry, Mentor: Dr. Wuzong Zhou, 2008

## Non-Peer Reviewed

### Original Observations

1. D. Adilbay, J. Gonzales, PDS Franca, S. Roberts, S. Patel, T. Viray, C. Chow, G.F. King, S.K. Jain, A.A. Ordonez. L.S. Carroll, N. Pillarsetty, T. Reiner\*, Non-invasive Imaging of Sense of Smell by Tracking the Voltage-Gated Sodium Channel NaV1.7, preprint [bioRxiv](https://www.biorxiv.com/content/10.1101/2021.10.07.463532v1), 2021, DOI: 10.1101/2021.10.07.463532v1  
→ Under review

### Published Abstracts

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1. S. Sahu, J. Cordero, X. Wu, PDS Franca, S. Kossatz, U. Harris, N. Kurtansky, N. Everett, S. Dusza, J. Monnier, P. Kumar, C. Fox, C. Brand, S. Roberts, K. Kose, W. Phillips, E. Lee, C. J. Chen, A. Rossi, K. Nehal, M. Pulitzer, C. Longo, A. Halpern, T. Reiner, M. Rajadhyaksha, and M. Jain, Combining PARPi-FL fluorescence and reflectance contrast for improved detection of basal cell carcinoma (BCC), Biophotonics Congress, [Optical Molecular Probes, Imaging and Drug Delivery](https://www.osapublishing.org/abstract.cfm?uri=OMP.2021.0Th2D.4), OTh2D.4, 2021, DOI: 10.1364/OMP.2021.0Th2D.4
2. I. Serganova, K. Vemuri, I. Cohen, M. Lubin, S. Roberts, M. Maeda, M. Mane, H. Mann, T. Reiner, E. Chan, D. Yarilin, K. M-T, R. Zappasodi, T. Merghoub, J. Koutcher, R. Blasberg, Vessel normalization following LDH-A knockdown in murine breast tumors, AACR Annual Meeting, [Cancer Research](https://www.cancerresearch.org/abstract/1476), 80, 16, abstract 1476, Philadelphia, PA, USA, 2020, DOI: 10.1158/1538-7445.AM2020-1476

### Media

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1. iThera Medical Seminar, 2020: <https://www.youtube.com/watch?v=eXBJn27D65U>
2. World Molecular Imaging Society 2020: <https://register.gotowebinar.com/recording/2241008513520205583>

## **Presentations**

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### **Poster Presentations as Presenting Author**

#### **International / National**

1. S. Roberts et al., “pH specific dark quencher enables multi-spectral optoacoustic imaging of breast cancer”, World Molecular Imaging Conference, Seattle, USA, Sept 2018
2. S. Roberts et al., “Near infrared optoacoustic exendin-4 analog for  $\beta$ -cell cluster imaging”, World Molecular Imaging Conference, Montreal, Canada, Sept. 2019
3. S. Roberts et al., “Optoacoustic diagnoses of cancer with sonophore-enhanced nanoemulsions”, European Molecular Imaging Meeting (EMIM), Glasgow, Scotland, Mar. 2019
4. S. Roberts et al., “Calcium Selective Photoacoustic Agent and its Design Principles”, EXCITE Summer School, ETH Zürich, Zürich, Switzerland, 2016

#### **Regional / Local**

1. S. Roberts et al., “Targeting the acidic environment of cancer using a pH low insertion peptide for multi-spectral optoacoustic tomography”, New York Academy of Sciences (NYAS), New York, USA, 2019

### **Poster Presentations as Presenting Co-Author**

1. PDS Franca et al., PARPi-FL use in fluorescence-guided resection of oral cancer, Pacifichem, Virtual Conference, 2021
2. PDS Franca et al., PARP1 targeted imaging and theranostics, Memorial Sloan Kettering's Imaging and Radiation Sciences Program, Virtual Seminar, Nov. 2021
3. A. Michel $\Psi$  et al., Optimizations of PARPi-FL imaging with the clinical Quest System, World Molecular Imaging Congress, Miami, USA cancelled, virtual, 2021
4. T. Viray $\Psi$  et al., PARPi-FL in polyethylene glycol 3350 (PEG3350) as a practical vehicle for clinical use, World Molecular Imaging Congress, Miami, USA cancelled, virtual, 2021
5. PDS Franca et al., Improving Oral Cancer detection using PARPi-FL: A Phase I Clinical Trial, World Molecular Imaging Congress, Miami, USA cancelled, virtual, 2021
6. PDS Franca et al., PARP1 derived tracers for imaging of Head and neck tumors, New technologies applied to Head and Neck Surgery. Brazilian Head and Neck Surgery Society, Virtual Symposium 2020
7. PDS Franca et al., Fluorescence-guided resection of tumors in mouse models of oral cancer, World Molecular Imaging Congress, Virtual Conference 2020
8. PDS Franca et al., PARP1 Targeted Tracers to Enhance Diagnosis and Treatment of Oral Cancers, World Molecular Imaging Society, Webinar, 2020
9. PDS Franca et al., Innovations and Advanced Techniques in Head and Neck Surgery, Head and Neck Brazilian Surgery Society online symposium on Head and Neck Surgery, Webinar 2020

10. PDS Franca et al., PARP1 imaging as a potential solution for the pitfalls seen with [18F]FDG - PET/CT Imaging of Head and Neck Tumors, World Molecular Imaging Congress, Montreal, CA, 2019
11. PDS Franca et al., Detection and Delineation of Oral Cancer with a PARP1-Targeted Optical Imaging Agent, Peter MacCallum Cancer Center, Melbourne, AU, 2019
12. PDS Franca et al., Detection and Delineation of Oral Cancer with a PARP1-Targeted Optical Imaging Agent, Hollywood Private Hospital, Perth, AU, 2019
13. PDS Franca et al., Principles of molecular imaging, PARPi-FL Imaging of Head and Neck Oral Cancer, 6<sup>o</sup> SECCAPE, USP Head and Neck Surgery Week, Sao Paulo, BR, 2019
14. PDS Franca et al., Imaging of Head and Neck Cancer Tissue Sample with PARP Tracers and the use of artificial intelligence to read stained slides, University of Sao Paulo, Sao Paulo, BR, 2019
15. D. Manuele# et al., Fluorescence Imaging of Peripheral Nerves by Hsp1a-FL targeting Nav1.7, Molecular Imaging Summer Program, MSK, New York, NY, 2019
16. C. Choi# et al., Optoacoustic Imaging of Breast Cancer Using Dark Quencher QC1 pHILIP, Hunter College Research Conference, New York, NY, USA, 2019
17. C. Choi# et al., Optoacoustic Imaging of Breast Cancer Using Dark Quencher QC1 pHILIP, Annual Biomedical Research Conference for Minority Students, Abstract O-021, Indianapolis, IN, 2018
18. C. Choi# et al., The Synthesis of Near Infrared Dye-Encapsulated Nanoemulsions, Hunter College Research Conference, 2018
19. C. Choi# et al., The Synthesis of Near Infrared Dye-Encapsulated Nanoemulsions, American Medical Student Association Convention & Exposition, Washington D.C., 2018

### **Invited Presentations**

#### **Regional / Local**

1. S. Roberts et al., “Targeting the Oncogene HPV16 E7 with Affibody Molecules in Head and Neck Cancer”, Eastern Analytical Symposium & Exposition, New Jersey, USA, Nov. 2021
2. S. Roberts et al., “New Chemistry and Multi-modal Approaches for Molecular Imaging”, Radiopharmaceutical Chemistry, Department of Chemistry, University of Helsinki, Finland, Faculty Candidate, virtual, Oct. 2021
3. S. Roberts et al., “Near infrared optoacoustic nanoemulsions for in vivo optoacoustic imaging”, Weill Cornell Medicine lecture, New York, USA, Jan. 2020
4. S. Roberts et al., “Optoacoustics and optical- complementary modalities for molecular imaging”, iThera Medical’s webinar, <https://www.youtube.com/watch?v=eXBJn27D65U>, virtual, May 2020
5. S. Roberts et al., “Optoacoustic chemical imaging probes for exploring cancer biology”, World Molecular Imaging Society (WMIS), Early Professionals Webinars, <https://register.gotowebinar.com/recording/2241008513520205583>, virtual, Apr, 2020

6. S. Roberts et al., "Sensors for Optoacoustic Detection", Chemical Biology Monthly Seminar, Chaired by Dr. Derek Tan, MSK, NY, USA, Jul. 2020
7. S. Roberts et al., "The use of optoacoustic tomography for cancer detection", Imaging Sciences Seminar, MSK, NY, USA, Nov. 2019
8. S. Roberts et al., "Chemical Sensors for Optoacoustic Imaging", Chemical Biology Monthly Seminar, Chaired by Dr. Derek Tan, MSK, NY, USA, Mar. 2019
9. S. Roberts et al., "Chemical Tools for the Optoacoustic Imaging of Cancer", Radiology Science Slam, MSK, NY, USA, Sept. 2018
10. S. Roberts et al., "pHLIP® technology with optoacoustic imaging", Bracco Diagnostics Inc. (company visit for interest in agent acquisition), MSK, NY, USA, Apr. 2018
11. S. Roberts et al., "Neurosensing using Photoacoustics", Invited seminar for a postdoctoral position in the Laboratory of Dr. Thomas Reiner, MSK, NY, USA, Jul. 2016

#### **International / National**

1. S. Roberts et al., "Leveraging Chemistry for Molecular Imaging", Invited seminar for a Radio-Pharmacology-Molecular Imaging/Therapy Laboratory Head Position, Oncology Research, Novartis Institutes of Biomedical Research (NIBR), Novartis Pharma AG, virtual, Basel, Switzerland, Sept. 2021
2. S. Roberts et al., "Chemical Probes for Molecular Imaging of Cancer", Department of Oncology, Karmanos Cancer Institute, Wayne State University, Faculty Candidate, virtual, Sept. 2021
3. S. Roberts et al., "Imaging Pancreatic β-cells with Optoacoustic Biomarkers for Diabetes Detection", iThera Medical Optoacoustic Imaging Symposium, Montreal, Canada, Sept. 2019
4. S. Roberts et al., "Calcium Selective Photoacoustic Agent and its Design Principles", ETH Zürich, Zurich, Switzerland, Sept. 2016
5. S. Roberts et al., "Chemical Functional Sensors for Photoacoustics", Institute of Biological and Medical Imaging (IBMI) Meeting, Helmholtz Zentrum Munich, Munich, Germany, Jun. 2016
6. S. Roberts et al., "Dynamic contrast agents for non-invasive optoacoustic imaging of neural activations", Invited interview for postdoctoral position in industry (in German/English), Roche Diagnostics GmbH, Penzberg, Bavaria, Munich, Germany, May 2016
7. S. Roberts et al., "Functional Sensors for NIR Fluorescence and MSOT", Institute of Biological and Medical Imaging (IBMI) 3-day Retreat, Helmholtz Zentrum Munich, Munich, Germany, Jun. 2015

#### **Oral Presentations as Presenting Author**

#### **International / National**

1. S. Roberts et al. "Acid specific dark quencher QC1 pHLIP for multi-spectral optoacoustic diagnoses of breast cancer", European Molecular Imaging Meeting (EMIM), Glasgow, Scotland, Mar. 2019

2. S. Roberts et al., "Dark yet bright: non-radiative and high performance optoacoustic nanoemulsions", World Molecular Imaging Conference, Philadelphia, USA, Sept. 2017

### Regional / Local

1. S. Roberts et al., "Near-infrared exendin-4 analog for optoacoustic imaging of the GLP-1 receptor", Pacific Basin Societies, Hawaii, USA cancelled, virtual, Dec. 2021
2. S. Roberts et al., "[124I]-ATMi for in vivo PET imaging of ataxia telangiectasia mutated (ATM) kinase in mouse models of glioblastoma", World Molecular Imaging Conference (WMIC), Miami, USA cancelled, virtual, Oct. 2021.

### Oral Presentations as Co-Author

#### International / National

1. PDS Franca et. al. "PARP1 Targeted Tracers to Enhance Diagnosis and Treatment of Oral Cancers", Brazilian Head and Neck Society, Oct. 2020
2. PDS Franca et. al. "PAPRi-FL Imaging of Head and Neck Oral Cancer", SECCAPE-USP, Brazil, May 2019
3. PDS Franca et. al. "Detection and Delineation of oral cancer with a PARP-1 targeted optical imaging agent, Peter McCullough Cancer Center, Melbourne, Australia, Jun. 2019
4. PDS Franca et. al. "A potential fluorescent tracers for in vivo cancer delineation" WMIC, Sept. 2020
5. PDS Franca et. al. "PARP1 imaging as a potential solution for the pitfalls seen with 18FDG-PET/CT Imaging of Head and Neck tumors", WMIC, Sept. 2019
6. S. Roberts...G. Westmeyer, "Optoacoustic Imaging of Calcium", European Molecular Imaging Meeting (EMIM), San Sebastian, Spain, Mar. 2018  
→ Spotlight session
7. S. Roberts...G. Westmeyer, "Calcium Sensors for Photoacoustics", World Molecular Imaging Conference, Seattle, USA, Sept 2018

### Regional / Local

1. D. Adilbay et. al., "Imaging of olfactory nerve using a selective Nav1.7 sodium channel inhibitor in the diagnosis of smell disorders", WMIC, Miami, USA cancelled, virtual, 2021
2. PDS Franca, et. al., "PARP1 targeted tracers to enhance diagnosis and treatment of oral cancers", World Molecular Imaging Society (WMIS), Early Professionals Webinars, Jul. 2020
3. PDS Franca et. al. PAPRi-FL as a molecular marker for fluorescence-guided resection of tumors in mouse or oral cancer, Postdoc Symposium MSK, Sept. 2020
4. PDS Franca et. al. "18F-PAPRi: A potential new PET/CT tracer for Head and Neck Cancers" NYHNS, Oct. 2019  
→ Awarded Best Research 2019 among Head and Neck (HN) Fellow at the New York HN Society

\* corresponding author  
# undergraduate student  
= masters student  
Ψ lab technician

## Service

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### Other Professionally Related Service

#### Professional

2021 – present Chief Fellow (Radiology), organizing events, liaising between faculty and postdocs/students/trainees

#### Community

06/2021 – present Moderator and Organizer, Molecular Imaging and Biology Journal Club hosted by WMIC

07/2017 – present Active Mentor, McNulty Mentor for STEM Program, Hunter College, NY, USA

07/2021 Navigating career after undergraduate and graduate studies, MSK Lecture, MSK Summer Undergraduate Research Program, NY, USA.

07/2020 Career Path & Science: Dream, Explore, Discover”, MSK Lecture, MSK Summer Undergraduate Research Program, NY, USA

06/2020 Hosted Journal Club, MSK Summer Research Undergraduate Program, NY, USA

03/2020 Hosted class session “Funding and Negotiation Workshop” for McNulty Scholars at Hunter College, NY, USA

08/2008 – 11/2009 Volunteer and active member for Charity, ChildReach International, London, UK.  
→ Ran and organized events, fundraised £40,000  
→ Participated in building schools in Kilimanjaro regions, Tanzania, Africa

2013 – 2016 Women’s Rights Campaign Volunteer, Amnesty International, Munich, Germany  
→ Organized monthly events to increase social awareness, ran in German/English  
→ Organized the premiere of the movie “Difret” in Munich (2015), “My body, my rights” campaign (2014), writing Urgent Actions for press release, monitoring international press.

09/2010 – 06/2010 Class Liaison Representative, University of St. Andrews, St. Andrews, Scotland

#### Peer-Reviewed Journals

#### Editorship

06/2021 – present Guest Editor, Journal of Visualized Experiments (JoVE)

## **Manuscript Review (Invited)**

05/2021	Chemical Society Review (IF: 54.56)
02/2021	Molecular Imaging and Biology (IF: 3.34)
02/2021	Advanced Therapeutics (IF: tbd)
01/2021	Frontiers Oncology (IF: 4.85)
10/2020	Nature Scientific Reports (IF: 4.0)
07/2020	Molecular Pharmaceutics (IF: 4.32)
07/2020	Molecular Imaging and Biology (IF: 3.34)
06/2020	Journal of Nuclear Medicine (IF: 10.06)
05/2020	Journal of Nuclear Medicine (IF: 10.06)
06/2019	Molecular Imaging and Biology (IF: 3.34)
08/2019	Journal of Nuclear Medicine (IF: 10.06)
10/2018	Nature Communications (IF: 14.92)
08/2018	Chemical Science (IF: 9.35)
07/2018	Theranostics (IF: 11.56)
06/2018	ACS Applied Materials & Interfaces (IF: 9.23)
05/2018	Nanotheranostics (IF: 4.41)

## **Abstract Review**

2022	International Symposium on Radiopharmaceutical Sciences (iSRS), 15 abstracts
2019	European Molecular Imaging Meeting (EMIM), 10 late-breaking abstracts

## **Participation in Workshops, Conferences, Seminars**

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- Introduction to Academic Radiology for Scientists (ITARS) program, Chicago, USA, 28 Nov- 02 Dec. 2021
  - ➔ Faculty tracks for imaging scientists, building and organizing a lab, commercial partnerships, IP, tech transfers and clinical collaborations
- Chemical Biology Program, Joint monthly group meetings with Chairman Dr. Derek Tan, MSK, NY, USA, 2019- present
- Radiology weekly meetings, Joint weekly meetings with Dr. Jason S. Lewis, MSK, NY, USA, 2016- present
- The New York Head and Neck Society Meeting, 2019
- MATLAB (1.5 h/lecture,  $\times 7$ ) basics from the Molecular Cytology Core, MSK, NY, USA, 2019
- Molecular and Advanced Imaging in Oncology, MSK, NY, USA, 2017
- Molecular Medicine (one-week intensive course), TUM, Munich, Germany, 2015
- Basic Proteomics (one-week intensive course), TUM, Munich, Germany, 2015
- Statistics (one-week intensive course), TUM, Munich, Germany, 2015
- Preclinical Imaging (one-week intensive course), TUM, Munich, Germany, 2014

- Basic Principles of Light Microscopy (one-week intensive course), Ludwig Maximilian University (LMU), Munich, Germany, 2014
- Human In Vivo Multi-modal Neuroimaging: from signals to measure (one-week intensive course), TUM, Munich, Germany, 2014
- Neuroscience (one-week intensive course), TUM, Munich, Germany, 2015
- Principles of Neurobiological Imaging and Engineering (one-week intensive course), TUM, Munich, Germany, 2014
- Two-photon functional imaging in the living brain: theory and practice (one-week intensive course), The Third Military Medical University (TMMU), Chongqing, China, 2014
- Working and Presenting Scientific Results in Intercultural Environments, HELENA Orientation, Helmholtz Zentrum Munich, Neuherberg, Germany, May 2014
- 2-day Symposium for young scientist in Munich, Munich, Germany, Mar. 2013
- Physics of Biological System Visualization and Manipulation of Cellular Communities, Quantissue Meeting 2014, Helmholtz Zentrum Munich, Munich, Germany, 8-10<sup>th</sup> Oct. 2014

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