

# Guillem Pratx, PhD

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## I. Education

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2010	PhD	Electrical Engineering, Stanford University, CA
2006	MS	Electrical Engineering, Stanford University, CA
2005	Ingénieur (BS)	Engineering, École Centrale Paris (now CentraleSupélec), France

## II. Professional Appointments

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2013–	Assistant Professor	Radiation Oncology & Medical Physics, Stanford University
2010–2013	Postdoctoral Fellow	Radiation Oncology & Medical Physics, Stanford University
2005–2010	Research Assistant	Radiology, Stanford University

## III. Honors and Awards

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2015	Damon Runyon-Rachleff Innovator award, Damon Runyon Cancer Foundation
2014	Young Investigator Award, Society of Nuclear Medicine and Molecular Imaging, Computer and Instrumentation Council (1 <sup>st</sup> place)
2013	Physics Impact Award, Radiation Oncology, Stanford University
2012	Young Investigator Award (semi-finalist), World Molecular Imaging Conference
2008	Top Student Paper, IEEE Medical Imaging Conference
2001	Third place, Prologon (French nationwide programming contest)
2006–2012	<i>Competitive travel awards</i> : World Molecular Imaging Conference (2010, 2011 & 2012), Society of Nuclear Medicine annual meeting (2008 & 2009), IEEE Medical Imaging Conference (2006, 2007 & 2008), and Bio-X Travel Award (2007)

## IV. Curriculum Vitae Highlights

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### *Research themes:*

- Cancer molecular imaging
- In vitro oncology assays
- Medical radiation physics
- Radiation biophysics
- Cancer metabolism

### *Scholarly metrics:*

- 55 peer-reviewed publications
- 17 grants and fellowships awarded
- 8 US patents
- 15 invited talks
- 13 pre- and post-doctoral trainees

## V. Scholarly Publications

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### A. Peer-Reviewed Journal Articles

(55 publications)

- 2017 Kiru L, Kim TJ, Shen B, Chin FT & **Pratx G**, “Single-cell imaging using radioluminescence microscopy reveals unexpected binding target for [<sup>18</sup>F]HFB”, *Mol. Imaging Biol.* in press
- Wang Q, Sengupta D, Kim TJ & **Pratx G**, “In silico optimization of radioluminescence microscopy”, *J. Biophotonics*, in press.
- Gallina ME, Kim TJ, Shelor M, Vasquez J, Mongersun A, Kim M, Tang SKY, Abbyad P & **Pratx G**, “Towards a droplet-based single-cell radiometric assay”, *Anal. Chem.* 89 (12), pp. 6472–6481
- Wang Q, Sengupta D, Kim TJ, & **Pratx G**, “Performance Evaluation of <sup>18</sup>F Radioluminescence Microscopy Using Computational Simulation”, *Med. Phys.* 77(5), pp. 1782–1795, Apr 2017
- Kim TJ, Turkcan S & **Pratx G**, “Modular low-light microscope for imaging cellular bioluminescence and radioluminescence”, *Nature Protoc.* 12, pp. 1055-1076
- 2016 King MT, Jenkins CH, Sun C, Carpenter CM, Ma X, Cheng K, Le QT, Sunwoo JB, Cheng Z, **Pratx G** & Xing L, “Flexible radioluminescence imaging for FDG-guided surgery”, *Med. Phys.* 43(1), pp. 5298-5306
- Turkcan S, Naczynski D, Nolley R, Sasportas LS, Peehl D, and **Pratx G**, “Endoscopic detection of cancer with lensless radioluminescence imaging and machine vision”, *Sci. Rep.* 6, pp. 30737
- Sengupta D & **Pratx G**, “Single-cell characterization of <sup>18</sup>F-FLT uptake with radioluminescence microscopy”, *J. Nucl. Med.* 57(7), pp. 1136-1140
- Ouyang Y, Kim TJ & **Pratx G**, “Evaluation of a BGO-based PET system for single-cell tracking performance by simulation and phantom studies”, *Mol. Imaging* 15, pp. 1-8
- Mongersun A, Smeenk I, **Pratx G\***, Asuri P & Abbyad P, “Droplet microfluidic platform for the determination of single-cell lactate release”, *Anal. Chem.* 88(6) pp. 3257-3263 \*Provided the original idea for this project
- Sengupta D & **Pratx G**, “Imaging metabolic heterogeneity in cancer”, *Mol. Cancer* 15(4), pp. 1-12
- 2015 Kim TJ, Turkcan S, Ceballos A & **Pratx G**, “Modular platform for low-light microscopy”, *Biomed. Opt. Express* 6(11), pp. 4585-4598
- Natarajan A, Türkcan S, Gambhir SS & **Pratx G**, “A multiscale framework for imaging radiolabeled therapeutics”, *Mol. Pharm.* 12 (12), pp 4554-4560
- King MT, Carpenter CM, Sun C, Ma X, Le QT, Sunwoo JB, Cheng Z, **Pratx G\*** & Xing L, "Beta-radioluminescence imaging: A comparative evaluation with Cerenkov luminescence imaging," *J. Nucl. Med.* 56(9), pp. 1458-1464 \*Study design and data interpretation
- Volotskova O, Sun C, Stafford JH, Koh AL, Ma X, Cheng Z, Cui B, **Pratx G\*** & Xing L, “Efficient radioisotope energy transfer by gold nanoclusters for molecular imaging”, *Small* 11(32), pp. 4002-4008 \*Developed analytical framework to analyze data
- Sengupta D, Miller S, Marton Z, Chin F, Nagarkar V & **Pratx G**, “Bright Lu<sub>2</sub>O<sub>3</sub>:Eu thin-film scintillators for high-resolution radioluminescence microscopy”, *Adv. Healthc. Mater.* 4(14), pp. 2064-2070
- Turkcan S\*, Nguyen J, Vilalta M, Shen B, Chin FT, **Pratx G** & Abbyad P, “Single-cell analysis of [<sup>18</sup>F]fluorodeoxyglucose uptake by droplet radiofluidics”, *Anal. Chem.* 87(13), pp. 6667-6673 \*Turkcan S was a postdoc in Dr. Pratx’ lab. This project was an equal collaboration between Profs. Abbyad and Pratx’ labs.

- 2014 Naczynski DJ, Sun C, Turkcan S, Jenkins C, Koh AL, Ikeda D, **Pratx G\*** & Xing L, “X-ray-induced shortwave infrared biomedical imaging using rare-earth nanoprobe”, *Nano Lett.* 15 (1), pp. 96-102 \**Helped develop imaging protocol*
- Lee KS, Kim TJ & **Pratx G**, “Single-cell tracking with PET using a novel trajectory reconstruction algorithm,” *IEEE Trans. Med. Imag.* 34(4), pp. 994-1003
- Carpenter CM, Ma X, Liu H, Sun C, **Pratx G\***, Wang J, Gambhir SS, Xing L, Cheng Z., “Cerenkov luminescence endoscopy: Improved molecular sensitivity with  $\beta$ -emitting radiotracers,” *J. Nucl. Med.* 55(11), pp. 1905-1909 \**Experimental contribution*
- Ahmad M, **Pratx G\***, Bazalova M & Xing L, “X-ray luminescence and X-ray fluorescence computed tomography: New molecular imaging modalities,” *IEEE Access* 2, pp.1051-1061 \**Wrote sections of review article*
- Zaman RT, Kosuge H, **Pratx G\***, Carpenter C, Xing L & McConnell MV, “Fiber-optic system for dual-modality imaging of glucose probes  $^{18}\text{F}$ -FDG and 6-NBDG in atherosclerotic plaques.” *PLoS ONE* 9(9) pp. e108108 \**Experimental contribution*
- Sasportas LS, Hori SS, **Pratx G\*** & Gambhir SS, “Detection and quantitation of circulating tumor cell dynamics by bioluminescence imaging in an orthotopic mammary carcinoma model.” *PLoS ONE* 9(9), pp. e105079 \**Experimental contribution*
- Olcott PD\*, **Pratx G\***, Johnson DL, Mitra E, Niederkoher R & Levin CS, “Clinical evaluation of a novel intraoperative handheld gamma camera for sentinel lymph node biopsy”, *Phys. Med.* 30(3), pp. 340-345 \**Equal contribution*
- Osakada Y, **Pratx G**, Sun C, Sakamoto M, Ahmad M, Volotskova O, Ong Q, Teranishi T, Harada Y, Xing L, & Cui B, “Hard X-ray-induced optical luminescence via biomolecule-directed metal clusters”, *Chem. Commun.* 50(26), pp. 3549-3551 \**Characterized samples*
- Fahimian B, Ceballos A, Turkcan S, Kapp DS & **Pratx G**, “Seeing the invisible: Direct visualization of therapeutic radiation beams using air scintillation”, *Med. Phys.* 41(1), pp. 010702-010708
- 2013 Bazalova M, Ahmad M, **Pratx G\***, & Xing L, “L-shell x-ray fluorescence computed tomography (XFCT) imaging of cisplatin”, *Phys. Med. Biol.* 59(1), pp. 219-232 \**Contributed to data processing*
- Pratx G**, Chen K, Sun C, Carpenter CM & Xing L, “High-resolution radioluminescence microscopy of  $^{18}\text{F}$ -FDG uptake by reconstructing the  $\beta$ -ionization track”, *J. Nucl. Med.*, 54(10), pp. 1841-1846
- Cui JY, **Pratx G\***, Meng B & Levin CS, “Distributed MLEM: An iterative tomographic image reconstruction algorithm for distributed memory architectures”, *IEEE Trans. Med. Imag.* 32(5) pp. 957-967 \**Theoretical contribution*
- Kuang Y, **Pratx G\***, Bazalova M, Qian J, Meng B & Xing L, "Development of XFCT imaging strategy for monitoring the spatial distribution of platinum-based chemodrugs: Instrumentation and phantom validation", *Med. Phys.* 40(3), pp. 030701 \**Contributed to experimental work and data processing*
- Kuang Y, **Pratx G\***, Bazalova M, Meng B, Qian J & Xing L, “First demonstration of multiplexed X-ray fluorescence computed tomography (XFCT) imaging”, *IEEE Trans. Med. Imag.* 32(2), pp. 262-267 \**Contributed to experimental work and data processing*
- Osakada Y, **Pratx G\***, Solomon PE, Hanson L, Xing L & Cui B, “X-ray-excitable cyclometalated luminescent polymer dots”, *Chem. Commun.* 49, pp. 4319-4321 \**Characterized samples*

- 2012 Xiang L, Han B, Carpenter CM, **Pratx G\***, Kuang Y & Xing L, "X-ray acoustic computed tomography with pulsed X-ray beam from a medical linear accelerator", *Med. Phys.* 40(1) pp. 010701 \*Contributed to data processing
- Pratx G**, Chen K, Sun C, Martin L, Carpenter CM, Olcott PD & Xing L, "Radioluminescence microscopy: Measuring the heterogeneous uptake of radiotracers in single living cells", *PLoS One* 7(10) e46285
- Liu HG, Carpenter CM, Jiang H, **Pratx G\***, Sun C, Buchin MP, Gambhir SS, Xing L, & Cheng Z, "Intraoperative imaging of tumors using Cerenkov luminescence endoscopy: A feasibility experimental study", *J. Nucl. Med.* 53(10) pp. 1579-1584 \*Experimental contribution
- Bazalova M, Kuang Y, **Pratx G\*** & Xing L, "Investigation of X-ray fluorescence computed tomography (XFCT) and K-edge imaging", *IEEE Trans. Med. Imag.* 31(8) pp. 1620-1627 \*Contributed to data processing
- Carpenter CM, Sun C, **Pratx G**, Liu H, Cheng Z & Xing L, "Radioluminescent nanophosphors enable multiplexed small-animal imaging", *Opt. Express* 20(11) pp. 11598-11604 \*Performed in vivo imaging
- 2011 Cui JY, **Pratx G**, Prevrhal S & Levin CS, "Fully 3-D list-mode time-of-flight PET image reconstruction on GPUs using CUDA", *Med. Phys.* 38(12) pp. 6775-6786 \*Developed idea for project and supervised student
- Meng B, **Pratx G\*** & Xing L, "Ultra-fast and scalable cone-beam CT reconstruction using MapReduce in a cloud computing environment", *Med. Phys.* 38(12) pp. 6603-6609 \*Supervised student and assisted with computer programming
- Pratx G** & Xing L, "Monte Carlo simulation of photon migration in a cloud computing environment with MapReduce", *J. Biomed. Opt.* 16(12) pp. 125003
- Kalantzis G, Vasquez-Quino LA, Zalman T, **Pratx G\*** & Lei Y, "Toward IMRT 2D dose modeling using artificial neural networks: A feasibility study", *Med. Phys.* 38(10), pp. 5807-5817 \*Helped revise paper
- Wang H, Ma Y, **Pratx G\*** & Xing L, "Toward real-time Monte Carlo simulation using a commercial cloud computing infrastructure", *Phys. Med. Bio.* 56(17) pp. 175-181 \*Supervised student and assisted with computer programming
- Pratx G** & Levin CS, "Online detector response calculations for high-resolution PET image reconstruction", *Phys. Med. Bio.* 56(13) pp. 4023-4040
- Sun C, **Pratx G\***, Carpenter CM, Liu HG, Cheng Z, Gambhir SS & Xing L, "Synthesis and radioluminescence of PEGylated Eu<sup>3+</sup>-doped nanophosphors as bioimaging probes", *Adv. Mater.*, 23(24), pp. H195-H199 \*Performed in vivo imaging
- Carpenter CM, **Pratx G\***, Sun C & Xing L, "Limited-angle X-ray luminescence tomography: Methodology and feasibility study", *Phys. Med. Bio.* 56(12), pp. 3487-3502 \*Theoretical contribution
- Pratx G** & Xing L, "GPU computing in medical physics: A review", *Med. Phys.* 38(5), pp. 2685-2698
- 2010 **Pratx G**, Carpenter CM, Sun C & Xing L, "X-Ray luminescence computed tomography via selective excitation: A feasibility study", *IEEE Trans. Med. Imag.* 29(12), pp. 1992-1999
- Pratx G**, Surti S & Levin CS, "Fast list-mode reconstruction for time-of-flight PET using graphics hardware", *IEEE Trans. Nucl. Sci.* 58(1), pp. 105-109

**Pratx G**, Carpenter CM, Sun C & Xing L, “Tomographic molecular imaging of X-ray-excitable nanoparticles”, *Opt. Lett.* 35(20), pp. 3345-3347

Reynolds PD, Olcott PD, **Pratx G\***, Lau FWY & Levin CS, “Convex optimization of coincidence time resolution for a high-resolution PET system”, *IEEE Trans. Med. Imag.* 30(2), pp. 391-400  
*\*Theoretical contribution*

Sun C, Carpenter CM, **Pratx G\*** & Xing L, “Facile synthesis of amine functionalized Eu<sup>3+</sup>-doped La(OH)<sub>3</sub> nanophosphors for bioimaging”, *Nanoscale Res. Lett.* 6(1), pp. 24-30  
*\*Characterized samples*

Gu Y, **Pratx G\***, Lau FWY & Levin CS, “Effects of multiple-interaction photon events in a high-resolution PET system that uses 3-D positioning detectors”, *Med. Phys.* 37(10), pp. 5494-5509  
*\*Performed image reconstruction*

Carpenter CM, Sun C, **Pratx G\***, Rao R & Xing L, “Hybrid X-ray/optical luminescence imaging: Characterization of experimental conditions”, *Med. Phys.* 37(8), pp. 4011-4019  
*\*contributed to experimental work*

2009 **Pratx G** & Levin CS, “Bayesian reconstruction of photon interaction sequences for high-resolution PET detectors”, *Phys. Med. Bio.* 54(17), pp. 5073-5094

**Pratx G**, Chinn G, Olcott PD & Levin CS, “Fast, accurate and shift-varying line projections for iterative reconstruction using the GPU”, *IEEE Trans. Med. Imag.* 28(3), pp. 435-445

## *B. Book Chapters* (2 chapters)

2017 **Pratx G**, “High-performance computing in emission tomography”, in “The physics of SPECT and PET imaging”, pp. 257-282, edited by Dahlbom M, *Taylor & Francis / CRC Press*.

2011 **Pratx G**, Cui JY, Prevrhal S & Levin CS, “3D tomographic image reconstruction from randomly ordered lines with CUDA”, in “GPU computing gems emerald edition”, pp. 679-691, edited by Wen-Mei WH, *Morgan Kaufmann*.

## **VI. Grants & Fellowships**

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### *A. Current Funding* (4 active grants)

2016–2018 Phase II SBIR (R44), NIH-NIGMS  
*Bright and Fast Sensors for Radioluminescence Microscopy of Single Living Cells*  
Co-investigator (PI: Stuart Miller, RMD Inc)

2015–2018 Innovative Molecular Imaging Technology Program (R21), NIH-NCI  
*High-Throughput Radionuclide Counting and Sorting of Single Cells*  
Principal investigator

2015–2017 Damon Runyon-Rachleff Innovator award, Damon Runyon Cancer Foundation  
*Adding a New Dimension to Flow Cytometry: Radionuclide-Activated Cell Sorting*  
Principal investigator

2014–2019 Research Project Grant (R01), NIH-NCI

*Quantitative Imaging of Cancer Drug Resistance via Radioluminescence Microarrays*

Principal investigator

**B. Past Funding**

(13 completed grants)

- 2014–2017 Single-cell analysis program (R21), NIH-NHLBI  
*Real-Time Tracking of Single Cells in Live Animals*  
Principal investigator
- 2015–2016 CLARIONS award, Cutaneous Lymphoma Foundation  
*Optical Imaging of Electron Radiotherapy to Promote Uniform Total Skin Irradiation*  
Co-investigator (PI: Taejin Kim, Stanford University)
- 2014–2016 Postdoctoral fellowship, Prostate Cancer Research Program, Department of Defense  
*High-Resolution Radioluminescence Microscopy for the Study of Prostate Tissue Slice Cell Metabolism and Monitoring of Treatment Response*  
Postdoctoral Mentor (Fellow: Silvan Turkcan)
- 2014–2015 Phase I SBIR (R43), NIH-NIGMS  
*Bright and Fast Sensors for Radioluminescence Microscopy of Single Living Cells*  
Co-investigator (PI: Stuart Miller, RMD Inc)
- 2014–2015 Seed Grant, ChEM-H, Stanford University  
*High-Throughput Scintillation Counting and Sorting of Single Cells*  
Principal investigator
- 2013–2014 Seed Grant, Center for Biomedical Imaging at Stanford  
*Do Cancer Stem Cells Accumulate Fluorodeoxyglucose?*  
Principal investigator
- 2014 Developmental Project Grant, *In vivo* and Molecular Imaging Center at Stanford  
*Position Emission Localization of Single Cells*  
Principal investigator
- 2010–2013 Breast Cancer Research Program postdoctoral fellowship, Department of Defense  
*Intraoperative Cerenkov Imaging for Guiding Breast Cancer Surgery and Assessing Tumor Margins*  
Fellowship awardee
- 2010–2011 Dean's postdoctoral fellowship, Stanford University  
*X-Ray Luminescence Computed Tomography: A New Molecular Imaging Modality*  
Fellowship awardee

- 2010–2011 Research seed funding award, American Association of Physicists in Medicine  
*Development of X-Ray Luminescence Computed Tomography*  
Principal investigator
- 2006–2009 Bio-X fellowship, Stanford University  
*Advanced tomographic image reconstruction algorithms on standard graphics hardware to enhance molecular sensitivity of PET*  
Fellowship awardee
- 2006–2007 NVIDIA fellowship, NVIDIA Corp.  
*Fast and Accurate Time-of-Flight Reconstruction for Cancer Imaging using the GPU*  
Fellowship awardee
- 2006 Bradley-Alavi fellowship, Society of Nuclear Medicine  
*Accelerated list-mode 3D-OSEM reconstruction for PET on a Graphical Processing Unit*  
Fellowship awardee

## VII. Teaching

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### A. Classroom Teaching

- 2016 Physics and Engineering of Radionuclide Imaging (BIOE 221)  
Course instructor (jointly with Dr. Craig Levin). Designed new curriculum, course materials, lectures, and student assessments.
- 2015–2016 Advanced Research Topics in Molecular Imaging of Living Subjects (BIOE 229)  
Guest lecturer (one lecture and one discussion session per class)
- 2015–2017 Stanford Biosciences Grant Academy  
Faculty mentor. Provided individualized feedback to postdocs on their fellowship and grant applications
- 2014–2017 Nuclear medicine basic science lecture series  
Taught lectures on biomedical statistics and image science to current Radiology residents
- 2014–2017 Instrumentation & Applications for Multimodality Molecular Imaging (BIOE 222)  
Guest lecturer (two lectures/class)
- 2013–2016 MIPS Journal Club  
Organizer and faculty moderator (biweekly; attendance 30 students and postdocs)

- 2012 EPGY summer institute, Stanford University  
 Taught a three-week, full-time, college-level course on mechatronics, attended by 18 gifted high-school students. Specific tasks: designed course curriculum, gave daily lectures, prepared engaging lab assignments and projects, procured lab materials, and supervised two undergraduate teaching assistants.
- 2007 Short course, IEEE Medical Imaging Conference  
 Designed and taught one-day course on graphics hardware programming for medical application, attended by 35 international researchers.

### *B. Mentorship & Advising*

- |           |                                                                                                                                                                                                       |                                                              |                             |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------------------------|
| 2015–2017 | Graduate student mentoring<br>Andrew Ceballos                                                                                                                                                         | Byunghang Ha                                                 | Honquan Li                  |
| 2013–2017 | Postdoctoral fellow mentoring<br>Sepideh Almasi<br>Jihye Choi<br>Kyungoh Jung<br>Tae Jin Kim                                                                                                          | Louise Kiru<br>Justin Klein<br>Yu Ouyang<br>Debanti Sengupta | Silvan Turkcan<br>Qian Wang |
| 2014–2017 | Pre-major advisor to Stanford undergraduate students                                                                                                                                                  |                                                              | (4 students/year)           |
| 2014–2016 | Hartnell College internship program<br>Under Title V STEM grant, hosted three undergraduate students for summer research from Hartnell College, a Hispanic-Serving Institution located in Salinas, CA |                                                              |                             |

## **VIII. Peer-Review Service**

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### *A. Journal Reviewer*

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| ACS Nano<br>Australasian Physical & Engineering Sciences in Medicine<br>Biomedical Physics & Engineering Express<br>Biomedical Optics Express<br>Computer Methods and Programs in Biomedicine<br>European Journal of Medical Physics<br>IEEE Transactions on Information Technology in BioMedicine<br>IEEE Transactions in Medical Imaging<br>IEEE Transactions in Nuclear Science<br>IEEE Transactions in Radiation and Plasma Medical Sciences | International Journal of Radiation Oncology, Biology, Physics<br>Journal of Biomedical Optics<br>Journal of Biophotonics<br>Journal of Nuclear Medicine<br>Medical Physics<br>Molecular Imaging<br>Nanotechnology<br>Nuclear Instruments and Methods in Physics Research A<br>Physics in Medicine and Biology<br>PLOS One |
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## B. Conference Reviewer & Organizer

- 2016–2017 Topic Chair (Microscopy), World Molecular Imaging Congress  
2016–2017 Abstract reviewer, American Association of Physicists in Medicine meeting  
2013–2015 Topic Chair (Imaging in Radiation Oncology), IEEE Medical Imaging Conference  
2013–2017 Abstract reviewer, World Molecular Imaging Congress  
2011–2017 Abstract reviewer, IEEE Medical Imaging Conference

## IX. Patents --- (8 patents)

- 2016 Turkcan S & Pratz G, “Method to sort cells on the basis of radionuclide uptake”, 2016/0025701, under examination
- 2015 Pratz G, “Method for tracking moving sources with PET”, 2015/0355347, under examination
- 2013 Pratz G, Carpenter CM, Sun C, Olcott PD & Xing L, “Imaging the heterogeneous uptake of radiolabeled molecules in single living cells”, 2013/492606, abandoned  
Carpenter CM, Xing L, Sun C & Pratz G, “Method for tissue characterization based on beta radiation and coincident radiation of a radiotracer”, 2013/066351, abandoned  
Carpenter CM, Xing L, Pratz G & Sun C, “Molecular imaging using radioluminescent nanoparticles”, 2013/066190, awarded
- 2012 Pratz G, Cui JY & Levin CS, “Shift-varying line projection using graphics hardware”, 2012/931263, awarded  
Pratz G & Levin CS, “Method and apparatus for imaging using robust Bayesian sequence reconstruction”, 2012/607853, awarded
- 2011 Pratz G, Olcott PD & Levin CS, “Method of reconstructing a tomographic image using a graphics processing unit”, 2011/710273, awarded

## X. Presentations ---

### A. Invited Talks (15 talks)

- 2017 Pratz G, “Towards a droplet-based radiometric assay for single cells”, *NCI Innovative Molecular Analysis Technologies PI meeting*, Rockville, MD  
Pratz G, “X-ray luminescence for biomedical imaging and therapy: The long road to the clinic”, *IEEE workshop on non-conventional emission tomography*, Atlanta, GA  
Pratz G, “Beyond the positron range: Imaging PET radiotracers with single-cell resolution”, *Stanford University Photonics Retreat*, Asilomar, CA  
Pratz G, “Tracking single cells in vivo: The emerging role of positron emission tomography”, *PITTCON (analytical chemistry and spectroscopy)*, Symposium on Single-Cell Analysis, Chicago  
Pratz G, “A tale of two photons: Radioluminescence and its application in molecular imaging”, *SPIE BiOS Conference (biomedical optics)*, Symposium on Optical and Ionizing Radiation Interactions for Diagnosis and Therapy, San Francisco, CA
- 2016 Pratz G, “FDG uptake in a heterogeneous microenvironment: A single-cell study”, *AAPM Annual Meeting*, Joint Symposium of the AAPM and WMIC, Washington DC

- 2015 **Pratx G**, “One is More: New Radionuclide Approaches for Studying Single Cells”, *13<sup>th</sup> International Conference on Inorganic Scintillators and their Applications (SCINT 2015)*, plenary session, Berkeley, CA
- 2014 **Pratx G**, “Understanding FDG uptake using single-cell analysis”, *Joint Symposium on Molecular Imaging*, Catholic University, Seoul, South Korea
- Pratx G**, “Positron Emission Tomography Reloaded: Smaller, Faster, Better”, *Bio-X 10<sup>th</sup> Anniversary Symposium*, Stanford University
- Pratx G**, “New Radionuclide Approaches for Studying Single Cells”, *Lawrence Berkeley National Lab*, Berkeley, CA
- Pratx G**, “Positron Emission Microscopy: The Merging of Nuclear Medicine and Cell Biology”, *Annual Meeting of the Community of Bay Area Radionuclide Imagers*, Stanford University
- 2013 **Pratx G**, “Viewing Radiation: From Single Cells to Linear Accelerators”, *Medical Imaging Seminar*, Stanford University
- Pratx G**, “Radioluminescence: Old Concept, New Applications”, *Applied Physics Seminar Series*, Stanford University
- Pratx G**, “Imaging PET radiotracers at the single cell level with radioluminescence microscopy”, *Stanford Photonics Research Center Symposium*, Stanford University
- Pratx G**, “Pushing PET imaging to the cellular level: Development of a radioluminescence microscope”, *AAPM Annual Meeting, Symposium on Molecular Imaging and Nanotechnology*, Indianapolis, IN

## B. Proffered Conference Abstracts

(showing 15 out of 72 abstracts)

- 2017 Kim, TJ, Kim MK, Sun A, Abbyad P, Tang S & **Pratx G**, “Measuring the Metabolic Response of Single Adherent Cells to Chemotherapy using Radiofluidic Microchannels”, *International Conference on Miniaturized Systems for Chemistry and Life Sciences*
- Kim TJ, Gallina ME, Sun A, Shelor M, Kim MK, Tang S, Abbyad P & **Pratx G**, “Droplet Based Assay to Measure Radioactivity with Single-cell Resolution”, *International Conference on Miniaturized Systems for Chemistry and Life Sciences*
- Kiru L, Kim TJ, Shen B, Chin FT & **Pratx G**, “Single-cell imaging using radioluminescence microscopy reveals unexpected binding pattern of [18F]HFB”, *World Molecular Imaging Congress*
- Almasi S, Wang Q & **Pratx G**, “Higher Resolution Radio-luminescence Microscopy Image Reconstruction via  $\beta$ -Ionization Trajectory Analysis”, *AAPM Annual Meeting*
- Gallina ME, Kim TJ, Vasquez J, Tuerkcan S, Abbyad P & **Pratx G**, “Single-cell analysis of radiotracer uptake by fluorescence microscopy: Direct and droplet approach”, *SPIE BiOS*
- 2016 Li H and **Pratx G**, “Simultaneous Spatiotemporal Tracking of Multiple Positron Sources using Spectral Clustering”, *IEEE Medical Imaging Conference*, Nov 2016
- Kim TJ, Fahimian B & **Pratx G**, “Flexible Dosimeter Bands for Whole-Body Dosimetry”, *AAPM Annual Meeting*
- Wang Q, Sengupta D & **Pratx G**, “Computational Evaluation of High-Resolution <sup>18</sup>F Positron Imaging Using Radioluminescence Microscopy with Lu<sub>2</sub>O<sub>3</sub>:Eu Thin-Film Scintillator”, oral presentation, *AAPM Annual Meeting*
- Wang Q\*, Kim TJ, Sengupta D, Silvan T & **Pratx G**, “A systematic evaluation of <sup>18</sup>F positron imaging using radioluminescence microscopy by computational simulation”, oral presentation, *Society of Nuclear Medicine and Molecular Imaging* \* finalist for young investigator award

