

## RESUME

NAME SHORTE, Spencer		POSITION TITLE Scientific Director	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Bristol University, United Kingdom	PhD	1989-92	Biochemistry
Bristol University, United Kingdom	MSc	1988-89	Biochemistry
Kent University, Canterbury, United Kingdom	BSc	1984-87	Biochemistry

**Fields of expertise:** Cell biology, neuroendocrinology, infectious biology, Imaging, microscopy, image analysis, high-content analysis, visual screening, fluorescence, bioluminescence, multi-dimensional imaging, imaging cytometry, intra-vital imaging and single-cell technologies.

**Impact indices** (Google Scholar, search term “Spencer Shorte” Oct 2019):

78 Total publications (including 7 patents, 1 software copyright, 2 book chapters, 1 book, 3 reviews, and 3 articles in mathematical and physical optics journals not listed in PubMed); **citations: 5155; h-index: 32.0; i10-index: 56**

### Research Experience & Academic Positions

- **2018-current Scientific Director (CSO) Institut Pasteur Korea**
- **2017-current Head of Unit, & Executive Scientific Engineer, Technology & Services Unit for Photonic Biolmaging (UTechS-PBI) Institut Pasteur Paris**
- **2005-2017 Founding Director, & Executive Engineer to *Imagopole***
- **2001-2015 Group leader: *Plateforme d'Imagerie Dynamique***
- **1999-2001, Assistant Professor** at the Medical university of South Carolina.
- **1997-1999 Research Fellowship *Fondation pour le Recherche Medicale***, Institute Pasteur, Paris (12 months).
- **1996-1997 Research Fellowship** EU Fifth Framework Program, Institute Pasteur, Paris (16 months).
- **1995-1996 Post-doctoral Research Fellow** EU 'Human Capital & Mobility' Scheme, Hôpital de Port Royal, Paris, France (*8 months*).
- **1988-1992 Research Assistant Technician** Department of Biochemistry, University of Bristol. *Wellcome Trust* (London)

### Honors /Awards

- **2005** Laureate « *Prix des ingénieurs de l'année 2005* »
- **2015** Laureate “*prix Thérèse Lebrasseur* “ *Fondation de France*
- **2010-2016** Founding President of CTLS (Core Technologies for Life Sciences) European Association
- **2008-current** Fellow of the Royal Microscopical Society

## Selected Patents

- Rogers K, Dragavon J, Blazquez S & **Shorte S** (2010). Method to increase the number of detectable photons during imaging of a biological marker **European patent** EP10290158.4 (DI 2010-05); 26 March 2010.
- **Shorte, S**, Müller, T., Schnell, T. DI 200243, Invention: Method and device for 3 dimensional imaging of suspended micro-objects providing high-resolution microscopy. **Patent Number; EP 1 413 911 B1 (Extension October 2005)** (EP 02 292 658.8; PCT/EP2003/011818 filed 25 October 2002)
- Dragavon J, Holland A, Debarbieux L, Rekiki A, Tournebize A & **Shorte S** (2014). Enzyme independent photon emission. **European patent filed No. 14305509.3** (DI 2013-45); 07 Avril 2014; PCT extension 2015
- Rogers, K., **Shorte, S.**, Dragavon, J. and Blazquez, S., Institut Pasteur, 2016. Method to increase the number of detectable photons during the imaging of a biological marker. **U.S. Patent 9,329,132.**

## Selected Publications

- Tinevez JY, Arena ET, Anderson M, Nigro G, Injarabian L, André A, Ferrari M, Campbell-Valois FX, Devin A, **Shorte SL**, Sansonetti PJ, Marteyn BS. Shigella-mediated oxygen depletion is essential for intestinal mucosa colonization. **Nat Microbiol.** 2019 Aug 5. doi: 10.1038/s41564-019-0525-3. [Epub ahead of print]
- Aulner N, Danckaert A, Ihm J, Shum D, **Shorte SL**. Next-Generation Phenotypic Screening in Early Drug Discovery for Infectious Diseases. **Trends Parasitol.** 2019 Jul;35(7):559-570. Review.
- Sônego F, Bouccara S, Pons T, Lequeux N, Danckaert A, Tinevez JY, Alam IS, **Shorte SL**, Tournebize R. Imaging of Red-Shifted Light From Bioluminescent Tumors Using Fluorescence by Unbound Excitation From Luminescence. **Front Bioeng Biotechnol.** (2019) Apr 5;7:73.
- Charles-Orszag A, Tsai FC, Bonazzi D, Manriquez V, Sachse M, Mallet A, Salles A, Melican K, Staneva R, Bertin A, Millien C, Goussard S, Lafaye P, **Shorte S**, Piel M, Krijnse-Locker J, Brochard-Wyart F, Bassereau P, Duménil G. Adhesion to nanofibers drives cell membrane remodeling through one-dimensional wetting. **Nat Commun.** (2018) Oct 25;9(1):4450.
- Horvath P, Aulner N, Bickle M, Davies AM, Nery ED, Ebner D, Montoya MC, Östling P, Pietiäinen V, Price LS, **Shorte SL**, Turcatti G, von Schantz C, Carragher NO. (2016). Screening out irrelevant cell-based models of disease. **Nat Rev Drug Discov.** Nov;15(11):751-769. Epub 2016 Sep 12.
- Verdonk, F., Roux, P., Flamant, P., Fiette, L., Bozza, F.A., Simard, S., Lemaire, M., Plaud, B., **Shorte, S.L.**, Sharshar, T. and Chrétiens, F., Danckaert A. 2016. Phenotypic clustering: a novel method for microglial morphology analysis. **Journal of Neuroinflammation**, 13(1), p.1.
- Arena, E.T., Campbell-Valois, F.X., Tinevez, J.Y., Nigro, G., Sachse, M., Moya-Nilges, M., Nothelfer, K., Marteyn, B., **Shorte, S.L.** and Sansonetti, P.J., 2015. Bioimage analysis of Shigella infection reveals targeting of colonic crypts. **Proceedings of the National Academy of Sciences**, 112(25), pp.E3282-E3290.
- Ruckerl, F., Bellow, S., Berndt, D., Tinevez, J.Y., Heber, J., Wagner, M. and **Shorte, S.**, 2015, March. Spatio-angular light control in microscopes using micro mirror arrays. In SPIE BiOS (pp. 93052Y-93052Y). **International Society for Optics and Photonics.**
- Fallet, C., Caron, J., Oddos, S., Tinevez, J.Y., Moisan, L., Sirat, G.Y., Braitbart, P.O. and **Shorte, S.L.**, 2014, August. Conical diffraction as a versatile building block to implement new imaging modalities for superresolution in fluorescence microscopy. In SPIE NanoScience+ Engineering (pp. 916905-916905). **International Society for Optics and Photonics.**
- Ruckerl, F., Berndt, D., Heber, J. and **Shorte, S.**, 2014, May. Photoactivation and optogenetics with micro mirror enhanced illumination. In SPIE Photonics Europe (pp. 913017-913017). **International Society for Optics and Photonics.**
- Kesavan, S.V., Momey, F., Cioni, O., David-Watine, B., Dubrulle, N., **Shorte, S.**, Sulpice, E., Freida, D., Chalmond, B., Dinten, J.M. and Gidrol, X., 2014. High-throughput monitoring of major cell functions by means of lensfree video microscopy. **Scientific reports**, 4.
- Caron J, Fallet C, Tinevez JY, Moisan L, Braitbart LP, Sirat GY, **Shorte SL**. (2014) Conical diffraction illumination opens the way for low phototoxicity super-resolution imaging. **Cell Adh Migr.** 2014 Jun 6; 8(4)
- Kesavan SV, Navarro FP, Menneteau M, Mittler F, David-Watine B, Dubrulle N, **Shorte SL**, Chalmond B, Dinten JM, Allier CP. (2014) Real-time label-free detection of dividing cells by means of lensfree video-microscopy. **J Biomed Opt.** 2014 Mar;19(3):36004.
- Chenouard N, Smal I, de Chaumont F, Maška M, Sbalzarini IF, Gong Y, Cardinale J, Carthel C, Coraluppi S, Winter M, Cohen AR, Godinez WJ, Rohr K, Kalaidzidis Y, Liang L, Duncan J, Shen H, Xu Y, Magnusson KE, Jaldén J, Blau HM, Paul-Gilloteaux P, Roudot P, Kervrann C, Waharte F, Tinevez JY, **Shorte SL**, Willemse J, Celler K, van Wezel GP, Dan HW, Tsai YS, Ortiz de Solórzano C, Olivo-Marin JC, Meijering E. (2014) Objective comparison of particle tracking methods. **Nat Methods.** 2014 Mar;11(3):281-9.
- Dragavon J, Rekiki A, Theodorou I, Samson C, Blazquez S, Rogers KL, Tournebize R, **Shorte S**. (2014) In vitro and in vivo demonstrations of Fluorescence by Unbound Excitation from Luminescence (FUEL). **Methods Mol Biol.** 2014; 1098:259-70.
- Holland AD, Ruckerl F, Dragavon JM, Rekiki A, Tinevez JY, Tournebize R, **Shorte SL**. (2014) In vitro characterization of Fluorescence by Unbound Excitation from Luminescence: broadening the scope of energy transfer. **Methods.** 2014 Mar 15; 66(2):353-61.
- Dragavon J, Blazquez S, Rekiki A, Samson C, Theodorou I, Rogers KL, Tournebize R, **Shorte SL.**, (2012). In vivo excitation of nanoparticles using luminescent bacteria. **Proc Natl Acad Sci U S A.** 2012 Jun 5; 109(23):8890-5. Epub 2012 May 21.
- Tinevez JY, Dragavon J, Baba-Aissa L, Roux P, Perret E, Canivet A, Galy V, **Shorte S** (2012). A quantitative method for measuring phototoxicity of a live cell imaging microscope. **Methods Enzymol.** 2012;506:291-309.
- Yong Y, A Trouvé, B, Chalmond, O Renaud, & **S Shorte** (2011). Confocal bi-protocol: a new strategy for isotropic 3D live cell imaging. **J.Microscopy**, 242(1) : 70-85.
- Le Saux B, Chalmond B, Yu B, Trouvé A, Renaud O, **Shorte S**. (2009) Isotropic high resolution 3D confocal micro-rotation imaging for non-adherent living cells. **Journal of Microscopy**. 233(3), 404-416

- Arhel, N., A. Genovesio, K. A. Kim, S. Miko, E. Perret, J. C. Olivo-Marin, **S. Shorte**, and P. Charneau. (2006). Quantitative four-dimensional tracking of cytoplasmic and nuclear HIV-1 complexes. **Nature Methods** 3:817-24.
- Sáez-Cirión, A., Nicola, M.-A., Pancino, G., **Shorte, S.L.**, (2006). *Quantitative real-time analysis of HIV-1 gene expression dynamics in single living primary cells.* **Biotechnol.J.** 1 :682-689 *Cover*
- Munter S, Enninga J, Vazquez-Martinez R, Delbarre E, David-Watine B, Nehrbass U, **Shorte SL** (2006). Actin polymerisation at the cytoplasmic face of eukaryotic nuclei. **BMC Cell Biol** 7:23
- Amino R, Thiberge S, Martin B, Celli S, **Shorte S**, Frischknecht F, Menard R. (2006) Quantitative imaging of Plasmodium transmission from mosquito to mammal. **Nature Medicine**, 12:220-224.