# Claudio Vinegoni, Ph.D.

# Center for System Biology MGH, Harvard University

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#### CITIZENSHIP

Dual Citizenship: **USA**, **Italy**.

#### **EDUCATION**

♦ **University of Geneva**, Geneva, Switzerland.

Ph.D. in Physics, in the group of Prof. N. Gisin (2002).

Thesis title: Nonlinear Effects in Optical Fibers.

University of Trento, Trento, Italy.
 M.Sc. in Physics, October 1996.

Thesis title: Structure and Vibrational Properties of Electrochromic Materials

### Present Appointment

- ♦ Assistant Professor at the *Center for Systems Biology* at MGH-Harvard University (Dir. Prof. R. Weissleder).
- Director of the In-vivo Microscopy Core at the Center for Systems Biology at MGH-Harvard University.
- Head Laboratory for Biooptics and Molecular Imaging at the Center for Molecular Imaging Research at MGH-Harvard University.

# PREVIOUS APPOINTMENTS

- ♦ 05/2008–12/2010 Instructor of Radiology at the Center for Systems Biology at MGH-Harvard University (prof. R. Weissleder)
- ⋄ 09/2007–04/2008 Post-Doc researcher at the Center for Systems Biology at MGH-Harvard University (prof. R. Weissleder)
- 09/2005–08/2007 Post-Doc researcher at the Center for Molecular Imaging Research CMIR at MGH-Harvard University in the Lab for Biooptics and Molecular Imaging (prof. V. Ntzi-achristos)
- ⋄ 07/2003–08/2005 Post-Doc at the Beckman Institute at the University of Illinois Urbana-Champaign, in the Biophotonics Imaging Laboratory.
- ♦ **05/2002–06/2003** Guest Research Fellow at Chalmers University (Sweden)- Photonics Laboratory.
- ♦ **05/2001–09/2001** Guest researcher at EXFO (Quebec, CAN)
- ♦ 03/1999-01/2002 Research Assistant at the University of Geneva, CH
- ♦ **06/1998–03/1999** Research Assistant at the University of Pittsburgh, PA.
- ♦ 03/1997–06/1998 Technical Supervisor of the Ultrafast Spectroscopy Univ. of Trento (Italy).
- ♦ 10/1996–03/1997 Technical Supervisor in the Raman Spectroscopy Laboratory Univ. of Trento (Italy).

# PERSONAL STATEMENT

Assistant Professor in Physics at Harvard Medical School and a faculty member of the Center for Systems Biology at Massachusetts General Hospital. 30 years of experience in optical imaging and the development of several novel optical microscopic and macroscopic

#### Claudio Vinegoni, Ph.D.

molecular imaging techniques for biomedical imaging. In particular, my work has been focused on cancer imaging, functional imaging of engineered tissue, neural imaging and cardiovascular imaging. Recent work involves the development of new imaging platforms and imaging processing techniques for motion compensation for in vivo heart imaging, development of high throughput high-resolution imaging systems for drug-target engagement, in vivo and in vitro studies of pharmacodynamics for different drugs, longitudinal microscopy imaging study of insulitis in mice, and the development of novel high content data analysis and visualization tool. The research background in the optical imaging field includes fluorescence, fluorescence polarization and time resolved measurements, multiphoton and confocal microscopy, Raman spectroscopy, Coherent anti-Stokes Raman Scattering (CARS) imaging, optical coherence microscopy and tomography, mesoscopic imaging, optical projection tomography, and fluorescence molecular tomography in diffusive regime for whole mouse imaging. My work focuses also on image processing and signal processing in combination with both machine learning and deep learning for image data analysis and segmentation, image data mining, and the design of software tools for microscopy image data collection and visualization.

# SCIENTIFIC CONTRIBUTIONS

Author and coauthor of 186 scientific contributions. Among them, 3 Invited Review Chapters, 1 Patent, 113 articles, published in peer-reviewed international scientific journals, 35 oral presentations and poster sessions at international conferences, and 34 proceedings.

# COMMITTEE SERVICES AND ACTIVITIES

- ♦ Editorial Board Member "Discovery Imaging" Springer Nature.
- ♦ Editorial Board "Scientific Reports" in the category Electronics, Photonics and Device Physics
- Associate Editor "Frontiers in Physics" in the category Medical Physics and Imaging
- ⋄ Reviewer for the following journals: Advanced Science, Applied Physics Letters Photonics, Biomedical Optics Express, Biotechnology Journal, Circulation: Cardiovascular Imaging, ACS Chemical and Biomedical Imaging, Cytometry, eLife, F1000research, Frontiers in Physics, Frontiers in Immunology, IEEE Access, IEEE Advances, IEEE Transactions on Information Technology in BioMedicine, IEEE Transaction on Biomedical Engineering, IEEE Transactions of Instrument and Measurements, IEEE Transactions on Med. Imaging, IEEE Journal of Biomedical and Health Informatics, Int. J. of Biochemistry, Int. J. of Biomedical Imaging, JACC: Cardiovascular Imaging, Journal of Biophotonics, J. Lightwave Technology, Journal of Mathematical Imaging and Vision, Journal of Microscopy, Journal of Molecular Imaging, Journal Nuclear Medicine, JOVE, Methods and Applications in Fluorescence, Micromachines, Molecular Imaging, Molecular Imaging and Biology, Nature Communications, Nature Methods, Nature Protocols, Optica, Optics Communications, Optics Express, Optics Letters, Photoacoustics, Photonics and Technology Letters, PhotoniX, Physical Review A, Physical Review E, PlosOne, Review of Scientific Instruments, Scientific Reports, SLAS Discovery.
- Chair of the "Molecular Infrared and other novel imaging modalities" session at IEEE Engineering Medicine and Biology, Boston USA (2011).
- ♦ Technical Program Committee of the *IEEE Biomedical and Health Informatics*, Hong Kong (2012).
- ♦ Associate Editor, Biomedical Imaging and Image Processing, *IEEE Engineering Medicine and Biology* (2012-2023).

#### WEBPAGE

A copy of this curriculum vitae, a short resume, and a complete dowloadable bibliography with all the published articles and conference contributions, can be found at the following address:

https://cvinegoni.github.io

LAST UPDATED

December 19, 2024

- fequal contribution
- # corresponding author

#### **PUBLICATIONS: BOOKS**

1. Porous silicon microcavities.

C. Vinegoni<sup>#</sup>, M. Cazzanelli and L. Pavesi

in "Silicon-based Material and Devices", Vol. 2 (2001) pp. 123-92.

Academic Press

2. Novel fluorescent probes for intraoperative cholangiography.

**C. Vinegoni**<sup>#</sup>, C. Siegel, A. Mlynarchik, B.F. Sena, L.C. DeAbreu, J.L. Lima, J.L. Figueiredo. in "Fluorescent Imaging", Frontiers of gastrointestinal research. Vol. 31 (2013) pp. 106–112. Karger

3. Image processing technologies for motion compensation.

**C.** Vinegoni<sup>#</sup>, S. Lee, and R. Weissleder.

in "Imaging and visualization in the modern operating room", (2015) pp. 181–91.

Springer

#### **PUBLICATIONS: ARTICLES**

1. FAP-Targeted Fluorescent Imaging Agents to Study Cancer-Associated Fibroblasts In Vivo

Deutsch-Williams, R.J. and Schleyer, K.A. and Das, R. and Carrothers, J.E. and Kohler, R.H. and Vinegoni, C. and Weissleder<sup>#</sup>, R.

"Bioconjug. Chem." Vol. NA (2024) pp. NA

DOI: 10.1021/acs.bioconjchem.4c00426 PMID: 39667730 PMCID: NA

2. Virus-Induced Acute Respiratory Distress Syndrome Causes Cardiomyopathy Through Eliciting Inflammatory Responses in the Heart

Grune, J. and Bajpai, G. and Ocak, P.T. and Kaufmann, E. and Mentkowksi, K. and Pabel, S. and Kumowski, N. and Pulous, F.E. and Tran, K.A. and Rohde, D. and Zhang, S. and Iwamoto, Y. and Wojtkiewicz, G.R. and Vinegoni, C. and Green, U. and Swirski, F.K. and Stone, J.R. and Lennerz, J.K. and Divangahi, M. and Hulsmans, M. and Nahrendorf<sup>#</sup>, M.

"Cardiology" Vol. 150 (2024) pp. 49

DOI: 10.1161/CIRCULATIONAHA.123.0664336 PMID: 38506045 PMCID: PMC11216864

3. Recruited macrophages elicit atrial fibrillation

Hulsmans, M. and Schloss, M.J. and Lee, I.H. and Bapat, A. and Iwamoto, Y. and Vinegoni, C. and Paccalet, A. and M., Yamazoe and Grune, J. and Pabel, S. and Momin, N. and Seung, H. and Kumowski, N. and Pulous, F.E. and Keller, D., C. and Bening, B. and Green, U. and Lennerz, J.K. and Mitchell, R.N. and Lewis, A. and Casadei, B. and Iborra-Egea, O. and Bayes-Genis, A. and Sossalla, S. and Ong, C.S. and Pierson, R.N. and Aster, J.C. and Rohde, D. and Wojtkiewicz, G.R. and Weissleder, R. and Swirski, F.K. and Tellides, G. and Tolis, G. and Melnitchouk, S. and Milan, D.J. and Ellinor, P.T. and Naxerova, K. and Nahrendorf#, M.

"Science" Vol. 381 (2023) pp. 231-239.

DOI: 10.1126/science.abq3061 PMID: 37440641 PMCID: PMC10448807

4. Neutrophils incite and macrophages avert electrical storm after myocardial infarction

Grune, J. and Lewis, A.J.M. and Yamazoe, M. and Hulsmans, M. and Rohde, D. and Xiao, L. and Zhang, S. and Ott, C. and Calcagno, D.M. and Zhou, Y. and Timm, K. and Shanmuganathan, M. and Pulous, F.E. and Schloss, M.J. and Foy, B.H. and Capen, D. and Vinegoni, C. and Wojtkiewicz, G.R. and Iwamoto, I. and Grune, T. and Brown, D. and Higgins, J. and Ferreira, V.M. and Herring, N. and Channon, K.M. and Neubauer, S. and Oxford Acute Myocardial Infarction (OxAMI) Study and Sosnovik, D.E. and Milan, D.J. and Swirski, F.K. and King, K.R. and Aguirre, A.D. and Ellinor, P.T. and Nahrendorf<sup>#</sup>, M.

"Nature Cardiovascular Research" Vol. 1 (2022) pp. 649-664.

DOI: 10.1038/s44161-022-00094-w PMID: 36034743 PMCID: PMC9410341

5. Spatiotemporal multiplexed immunofluorescence imaging of living cells and tissues with bioorthogonal cycling of fluorescent probes

Ko, J. A. and Wilkovitsch, M. and Oh, J. and Kohler, R. H. and Bolli, E. and Pittet, M. J. and Vinegoni, C. and Sykes, D. B. and Mikula, H. and Weissleder<sup>#</sup>, R. and Carlson<sup>#</sup>, J. C. T.

"Nature Biotechnology" Vol. N/A (2022) pp. 16.

DOI: 10.1038/s41587-022-01339-6 PMID: 35654978 PMCID: PMC9669087

6. Cerebrospinal fluid can exit into the skull bone marrow and instruct cranial hematopoiesis in mice with bacterial meningitis

Pulous, F. E. and Cruz-Hernandez, J. C. and Yang, C. B. and Kaya, Z. and Paccalet, A. and Wojtkiewicz, G. and Capen, D. and Brown, D. and Wu, J. W. and Schloss, M. J. and **Vinegoni, C.** and Richter, D. and Yamazoe, M. and Hulsmans, M. and Momin, N. and Grune, J. and Rohde, D. and McAlpine, C. S. and Panizzi, P. and Weissleder, R. and Kim, D. E. and Swirski, F. K. and Lin, C. P. and Moskowitz, M. A. and Nahrendorf<sup>#</sup>, M.

"Nature Neuroscience" Vol. 25 (2022) pp. 567-+.

DOI: 10.1038/s41593-022-01060-2 PMID: 35501382 PMCID: PMC9081225

7. Bone marrow endothelial dysfunction promotes myeloid cell expansion in cardiovascular disease

Rohde, D. and Vandoorne, K. and Lee, I. H. and Grune, J. and Zhang, S. and McAlpine, C. S. and Schloss, M. J. and Nayar, R. and Courties, G. and Frodermann, V. and Wojtkiewicz, G. and Honold, L. and Chen, Q. and Schmidt, S. and Iwamoto, Y. and Sun, Y. and Cremer, S. and Hoyer, F. F. and Iborra-Egea, O. and Muñoz-Guijosa, C. and Ji, F. and Zhou, G. and Adams, R. H. and Wythe, J. D. and Hidalgo, J. and Watanabe, H. and Jung, Y. and van der Laan, A. M. and Piek, J. J. and Kfoury, Y. and Désogère, P. A. and Vinegoni, C. and Dutta, P. and Sadreyev, R. I. and Caravan, P. and Bayes-Genis, A. and Libby, P. and Scadden, D. T. and Lin, C. P. and Naxerova, K. and Swirski, F. K. and Nahrendorf\*, M.

"Nature Cardiovascular Research" Vol. 1 (2022) pp. 28-44.

DOI: 10.1038/s44161-021-00002-8 PMID: 35747128 PMCID: PMC9216333

8. Astrocytic interleukin-3 programs microglia and limits Alzheimer's disease

McAlpine, C. S. and Park, J. and Griciuc, A. and Kim, E. and Choi, S. H. and Iwamoto, Y. and Kiss, M. G. and Christie, K. A. and **Vinegoni, C.** and Poller, W. C. and Mindur, J. E. and Chan, C. T. and He, S. and Janssen, H. and Wong, L. P. and Downey, J. and Singh, S. and Anzai, A. and Kahles, F. and Jorfi, M. and Feruglio, P. F. and Sadreyev, R. I. and Weissleder, R. and Kleinstiver, B. P. and Nahrendorf, M. and Tanzi, R. E. and Swirski<sup>#</sup>, F. K. "Nature" Vol. 595 (2021) pp. 701-+.

DOI: 10.1038/s41586-021-03734-6 PMID: 34262178 PMCID: PMC8934148

9. CytoPAN-Portable cellular analyses for rapid point-of-care cancer diagnosis

Min, J. and Chin, L. K. and Oh, J. and Landeros, C. and Vinegoni, C. and Lee, J. and Lee, S. J. and Park, J. Y. and Liu, A. Q. and Castro, C. M. and Lee, H. and Im, H. and Weissleder<sup>#</sup>, R.

"Science Translational Medicine" Vol. 12 (2020) pp. 14.

DOI: 10.1126/scitranslmed.aaz9746 PMID: 32759277 PMCID: PMC8217912

10. Fluorescence microscopy tensor imaging representations for large-scale dataset analysis

**Vinegoni**<sup>†#</sup>, **C.** and Feruglio<sup>†</sup>, P. F. and Courties, G. and Schmidt, S. and Hulsmans, M. and Lee, S. and Wang, R. and Sosnovik, D. and Nahrendorf, M. and Weissleder, R.

"Scientific Reports" Vol. 10 (2020) pp. 15.

DOI: 10.1038/s41598-020-62233-2 PMID: 32221334 PMCID: PMC7101442

11. Extended dynamic range imaging for noise mitigation in fluorescence anisotropy imaging

Feruglio<sup>†</sup>, P. F. and **Vinegoni**<sup>†#</sup>, **C.** and Weissleder, R.

"Journal of Biomedical Optics" Vol. 25 (2020) pp. 13.

DOI: 10.1117/1.Jbo.25.8.086003 PMID: 32820624 PMCID: PMC7439791

12. Diminished Reactive Hematopoiesis and Cardiac Inflammation in a Mouse Model of Recurrent Myocardial Infarction

Cremer, S. and Schloss, M. J. and Vinegoni, C. and Foy, B. H. and Zhang, S. and Rohde, D. and Hulsmans, M. and Feruglio, P. F. and Schmidt, S. and Wojtkiewicz, G. and Higgins, J. M. and Weissleder, R. and Swirski, F. K. and Nahrendorf<sup>#</sup>, M.

"Journal of the American College of Cardiology" Vol. 75 (2020) pp. 901-915.

DOI: 10.1016/j.jacc.2019.12.056 PMID: 32130926 PMCID: PMC7254576

13. Characterization of single microvesicles in plasma from glioblastoma patients

Fraser, K. and Jo, A. and Giedt, J. and **Vinegoni, C.** and Yang, K. S. and Peruzzi, P. and Chiocca, E. A. and Breakefield, X. O. and Lee, H. and Weissleder<sup>#</sup>, R.

"Neuro-Oncology" Vol. 21 (2019) pp. 606-615.

DOI: 10.1093/neuonc/noy187 PMID: 30561734 PMCID: 6502493

14. High Dynamic Range Fluorescence Imaging

**Vinegoni**<sup>#</sup>, **C.** and Feruglio, P. F. and Weissleder, R.

"Ieee Journal of Selected Topics in Quantum Electronics" Vol. 25 (2019) pp. 7.

DOI: 10.1109/jstqe.2018.2881608 PMID: 31598059 PMCID: PMC6785194

15. Fluorescence anisotropy imaging in drug discovery

Vinegoni<sup>#</sup>, C. and Feruglio, P. F. and Gryczynski, I. and Mazitschek, R. and Weissleder, R.

"Advanced Drug Delivery Reviews" Vol. 151 (2019) pp. 262-288. DOI: 10.1016/j.addr.2018.01.019 PMID: 29410158 PMCID: 6072632

# 16. The anti-tumor diterpene oridonin is a direct inhibitor of Nucleolin in cancer cells

Vasaturo, M. and Cotugno, R. and Fiengo, L. and Vinegoni, C. and Dal Piaz, F. and De Tommasi<sup>#</sup>, N. "Scientific Reports" Vol. 8 (2018) pp. 13.

DOI: 10.1038/s41598-018-35088-x PMID: 30425290 PMCID: 6233161

### 17. Direct vascular channels connect skull bone marrow and the brain surface enabling myeloid cell migration

Herisson, F. and Frodermann, V. and Courties, G. and Rohde, D. and Sun, Y. and Vandoorne, K. and Wojtkiewicz, G. R. and Masson, G. S. and **Vinegoni, C.** and Kim, J. and Kim, D. E. and Weissleder, R. and Swirski, F. K. and Moskowitz, M. A. and Nahrendorf<sup>#</sup>, M.

"Nature Neuroscience" Vol. 21 (2018) pp. 1209-+.

DOI: 10.1038/s41593-018-0213-2 PMID: 30150661 PMCID: PMC6148759

## 18. Cardiac macrophages promote diastolic dysfunction

Hulsmans, M. and Sager, H. B. and Roh, J. D. and Valero-Munoz, M. and Houstis, N. E. and Iwamoto, Y. and Sun, Y. and Wilson, R. M. and Wojtkiewicz, G. and Tricot, B. and Osborne, M. T. and Hung, J. and Vinegoni, C. and Naxerova, K. and Sosnovik, D. E. and Zile, M. R. and Bradshaw, A. D. and Liao, R. and Tawakol, A. and Weissleder, R. and Rosenzweig, A. and Swirski, F. K. and Sam, F. and Nahrendorf<sup>#</sup>, M.

"Journal of Experimental Medicine" Vol. 215 (2018) pp. 423-440.

DOI: 10.1084/jem.20171274 PMID: 29339450 PMCID: PMC3366498

#### 19. Imaging the Vascular Bone Marrow Niche During Inflammatory Stress

Vandoorne, K. and Rohde, D. and Kim, H. Y. and Courties, G. and Wojtkiewicz, G. and Honold, L. and Hoyer, F. F. and Frodermann, V. and Nayar, R. and Herisson, F. and Jung, Y. and Desogere, P. A. and Vinegoni, C. and Caravan, P. and Weissleder, R. and Sosnovik, D. E. and Lin, C. P. and Swirski, F. K. and Nahrendorf<sup>#</sup>, M. "Circulation Research" Vol. 123 (2018) pp. 415-427.

DOI: 10.1161/circresaha.118.313302 PMID: 29980569 PMCID: 6202141

# 20. Design and Development of Fluorescent Vemurafenib Analogs for In Vivo Imaging

Mikula, H. and Stapleton, S. and Kohler, R. H. and Vinegoni, C. and Weissleder#, R.

"Theranostics" Vol. 7 (2017) pp. 1257-1265.

DOI: 10.7150/thno.18238 PMID: 28435463 PMCID: PMC5399591

#### 21. Measurement of drug-target engagement in live cells by two-photon fluorescence anisotropy imaging

**Vinegoni**<sup>#</sup>, **C.** and Fumene Feruglio, P. and Brand, C. and Lee, S. and Nibbs, A. E. and Stapleton, S. and Shah, S. and Gryczynski, I. and Reiner, T. and Mazitschek, R. and Weissleder, R.

"Nature Protocols" Vol. 12 (2017) pp. 1472-1497.

DOI: 10.1038/nprot.2017.043 PMID: 28686582 PMCID: PMC5928516

#### 22. Quantitating drug-target engagement in single cells in vitro and in vivo

Dubach, J. M. and Kim, E. and Yang, K. and Cuccarese, M. and Giedt, R. J. and Meirnetis, L. G. and Vinegoni<sup>#</sup>, C. and Weissleder<sup>#</sup>, R.

"Nature Chemical Biology" Vol. 13 (2017) pp. 168-173.

DOI: 10.1038/nchembio.2248 PMID: 27918558 PMCID: PMC5630128

## 23. Motion characterization scheme to minimize motion artifacts in intravital microscopy

Lee, S. and Courties, G. and Nahrendorf, M. and Weissleder, R. and Vinegoni<sup>#</sup>, C.

"Journal of Biomedical Optics" Vol. 22 (2017) pp. 7.

DOI: 10.1117/1.Jbo.22.3.036005 PMID: 28253383 PMCID: PMC5333764

# 24. Macrophages Facilitate Electrical Conduction in the Heart

Hulsmans, M. and Clauss, S. and Xiao, L. and Aguirre, A. D. and King, K. R. and Hanley, A. and Hucker, W. J. and Wulfers, E. M. and Seemann, G. and Courties, G. and Iwamoto, Y. and Sun, Y. and Savol, A. J. and Sager, H. B. and Lavine, K. J. and Fishbein, G. A. and Capen, D. E. and Da Silva, N. and Miquerol, L. and Wakimoto, H. and Seidman, C. E. and Seidman, J. G. and Sadreyev, R. I. and Naxerova, K. and Mitchell, R. N. and Brown, D. and Libby, P. and Weissleder, R. and Swirski, F. K. and Kohl, P. and Vinegoni, C. and Milan, D. J. and Ellinor, P. T. and Nahrendorf<sup>#</sup>, M. "Cell" Vol. 169 (2017) pp. 510-+.

DOI: 10.1016/j.cell.2017.03.050 PMID: 28431249 PMCID: PMC5474950

# 25. Transparent Electrophysiology Microelectrodes and Interconnects from Meta Nanomesh

Seo, K. J. and Qiang, Y. and Bilgin, I. and Kar, S. and Vinegoni, C. and Weissleder, R. and Fang<sup>#</sup>, H.

"Acs Nano" Vol. 11 (2017) pp. 4365-4372.

DOI: 10.1021/acsnano.7b01995 PMID: 28391679 PMCID: N/A

## 26. Two-photon imaging of pancreatic beta cells in real time in vivo

Clardy, S. M. and Kohler, R. and Vinegoni, C. and Iwamoto, Y. and Keliher, E. and Weissleder<sup>#</sup>, R.

"Technology" Vol. 4 (2016) pp. 130-34.

DOI: 10.1142/S2339547816200028 PMID: N/A PMCID: N/A

27. RNAi targeting multiple cell adhesion molecules reduces immune cell recruitment and vascular inflammation after myocardial infarction

Sager, H. B. and Dutta, P. and Dahlman, J. E. and Hulsmans, M. and Courties, G. and Sun, Y. and Heidt, T. and Vinegoni, C. and Borodovsky, A. and Fitzgerald, K. and Wojtkiewicz, G. R. and Iwamoto, Y. and Tricot, B. and Khan, O. F. and Kauffman, K. J. and Xing, Y. P. and Shaw, T. E. and Libby, P. and Langer, R. and Weissleder, R. and Swirski, F. K. and Anderson, D. G. and Nahrendorf<sup>#</sup>, M.

"Science Translational Medicine" Vol. 8 (2016) pp. 11.

DOI: 10.1126/scitranslmed.aaf1435 PMID: 27280687 PMCID: PMC5125383

28. Computational imaging reveals mitochondrial morphology as a biomarker of cancer phenotype and drug response

Giedt, R. J. and Fumene Feruglio, P. and Pathania, D. and Yang, K. S. and Kilcoyne, A. and **Vinegoni, C.** and Mitchison, T. J. and Weissleder<sup>#</sup>, R.

"Scientific Reports" Vol. 6 (2016) pp. 10.

DOI: 10.1038/srep32985 PMID: 27609668 PMCID: PMC5017129

29. Real-time high dynamic range laser scanning microscopy

**Vinegoni**<sup>†</sup>, **C.** and Swisher<sup>†</sup>, **C.** L. and Fumene Feruglio<sup>†</sup>, P. and Giedt, R. J. and Rousso, D. L. and Stapleton, S. and Weissleder, R.

"Nature Communications" Vol. 7 (2016) pp. 13.

DOI: 10.1038/ncomms11077 PMID: 27032979 PMCID: PMC4821995

30. Tyrosine kinase-mediated axial motility of basal cells revealed by intravital imaging

Roy, J. and Kim, B. and Hill, E. and Visconti, P. and Krapf, D. and Vinegoni, C. and Weissleder, R. and Brown, D. and Breton<sup>#</sup>, S.

"Nature Communications" Vol. 7 (2016) pp. 11.

DOI: 10.1038/ncomms10666 PMID: 26868824 PMCID: PMC4754344

31. Two-Photon Fluorescence Anisotropy Microscopy for Imaging and Direct Measurement of Intracellular Drug Target Engagement

**Vinegoni**<sup>#</sup>, **C.** and Dubach, J. M. and Feruglio, P. F. and Weissleder, R.

"Ieee Journal of Selected Topics in Quantum Electronics" Vol. 22 (2016) pp. 7.

DOI: 10.1109/jstqe.2015.2501384 PMID: 27440991 PMCID: PMC4946648

32. Rapid, high efficiency isolation of pancreatic beta-cells

Clardy, S. M. and Mohan, J. F. and **Vinegoni, C.** and Keliher, E. J. and Iwamoto, Y. and Benoist, C. and Mathis, D. and Weissleder<sup>#</sup>, R.

"Scientific Reports" Vol. 5 (2015) pp. 9.

DOI: 10.1038/srep13681 PMID: 26330153 PMCID: PMC4557033

33. Imaging the beating heart in the mouse using intravital microscopy techniques

**Vinegoni**<sup>†#</sup>, **C.** and Aguirre<sup>†</sup>, A. D. and Lee, S. and Weissleder, R.

"Nature Protocols" Vol. 10 (2015) pp. 1802-1819.

DOI: 10.1038/nprot.2015.119 PMID: 26492138 PMCID: PMC5380003

34. New techniques for motion-artifact-free in vivo cardiac microscopy

**Vinegoni**<sup>†#</sup>, **C.** and Lee<sup>†</sup>, S. and Aguirre, A. D. and Weissleder, R.

"Frontiers in Physiology" Vol. 6 (2015) pp. 12.

DOI: 10.3389/fphys.2015.00147 PMID: 26029116 PMCID: PMC4428079

35. Advances in measuring single-cell pharmacology in vivo

**Vinegoni**<sup>#</sup>, **C.** and Dubach, J. M. and Thurber, G. M. and Miller, M. A. and Mazitschek, R. and Weissleder, R. "Drug Discovery Today" Vol. 20 (2015) pp. 1087-1092.

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