Bettina Weigelin

Personal Data

Status/Function:	Group leader Multiscale Immunoimaging
Scientific focus:	Multiscale imaging of immune function
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Education and qualifications

2007 - 2015	**PhD in Medical Sciences** Dept. Dermatology, Julius-Maximilian's-University of Würzburg, Germany & Dept. Cell Biology, Radboud University Medical Center, Nijmegen, The Netherlands
2001 - 2007	**Diploma in Biology** Julius-Maximilian's-University, Würzburg, Germany

Work Experience

2016 – 2019	**Instructor (Research)** MD Anderson Cancer Center, Genitourinary Medical Oncology, Houston, TX, USA
2015 - 2016	**Post-doctoral researcher** Department of Cell Biology, RIMLS, Radboud University Medical Center, Nijmegen, The Netherlands

Teaching Experience

SUPERVISION

2017 - present	Copromotor of PhD students
2009 - present	Regular supervision of Bachelor and Master theses

LECTURES

2016	Radboud UMC, MMD Master class, Cell migration in health and disease
2013	Radboud UMC, MMD Master class, Immune cell migration and function
2012 - 2015	Radboud UMC, PhD Student introductory course 'In vivo Imaging'

INTERNATIONAL IMAGING WORKSHOPS

Organization and lecture

2019	EMIM 2019, Educational Session ‚Intravital microscopy'
2012	Imaging cancer: from models to patients, ENCITE, Nijmegen, Netherlands
2012	3D microscopy of cell-matrix interactions, T3Net, Nijmegen, Netherlands

Invited speaker

2016	Multiphoton microscopy, Cell Imaging Workshop, Liverpool, United Kingdom
2013	6th WORKSHOP Visualization of Cells and Tissues by Light Microscopy, Oulu, Finland
2013	Immune Recognition of Pathogens and Tumors, IRUN, Nijmegen, Netherlands
2012	Summer School on Actin Dynamics, Regensburg, Germany
2011	Technical Forum NCMLS, Nijmegen, Netherlands

SCIENCE COMMUNICATION

Presentation to the public

2015	Seeing is believing, Eureka Science Festival, Amsterdam, Netherlands
2015	On tour through a tumor, Radboud Science Night, Nijmegen, Netherlands
2013	The body's own cancer defense, 3D BEYOND Festival, Karlsruhe, Germany
2013	Visualizing the immune attack on cancer, GfBK Wiesbaden, Wiesbaden, Germany
2012	Perception and Knowledge Gain in Imaging Sciences, Denkerei, Berlin, Germany

Print and TV

2017	NET5, VIVA400, 'Women in Science'
2016	Omroep Gelderland, Trots Op Gelderland, 'In the Lab with Dr. Weigelin'
2016	Gezond Van Nu, "Cancer Research and Nutrition"
2015	NOS, News, 'Immune System at Work – Pacman style'
2015	NTR, De Kennis Van Nu, 'De tumor cellen von Dr. Weigelin'
2015	'Volkskrant, "On a Late Summer Evening- Scientific Discoveries in Oncology"

Additional Qualifications and Skills

Ad-hoc reviewer for international journals in the area of Cancer Research, Immunology and Microscopy
Regular session (co-)chair and panel reviewer for the European Molecular Imaging Meeting

Publications

1. Huda S, Weigelin B, Wolf K, Tretiakov KV, Polev K, Wilk G, Iwasa Masatomo, Emami FS, Narojczyk JW, Banaszak MS, Soh S, Pilans D, Vahid A, Makurath M, Friedl P, Borisy GG, Kandere-Grzybowska K, Grzybowski BA. Lévy-like movement patterns of metastatic cancer cells revealed in microfabricated systems and implicated in vivo. Nature Communications, 2018. 9(1), 4539.
2. Fruhwirth GO, Kneilling M, de Vries IJM, Weigelin B, Srinivas M, Aarntzen EHJG. The Potential of in vivo imaging for optimization of molecular and cellular anti-cancer immunotherapies. Mol Imaging Biol, 2018. PMID: 30030697.
3. Denais CM, Gilbert RM, Isermann P, McGregor A, te Lindert M, Weigelin B, Davidson P, Friedl P, Wolf K and Lammerding J. Nuclear envelope rupture and repair during cancer cell migration. Science, 2016. 352(6283):353-8.
4. Weigelin B, Bakker GJ & Friedl P. Third harmonic generation microscopy for label-free imaging of tissue organization. J Cell Sci, 2016; 129(2): 245-55.
5. Weigelin B, Friedl P. Cancer cells: Stemness shaped by curvature. Nat Mater, 2016. 22;15(8):827-8.
6. Weigelin B, Bolaños-Mateo E, Rodriguez-Ruiz ME, Martinez-Forero I, Friedl P and Melero I. Anti-CD137 monoclonal antibodies and adoptive T cell therapy: a perfect marriage? Cancer Immunol Immunother, 2016. 65(5):493-7.
7. Weigelin B*, Bolaños-Mateo E*, Teijeira A, Martinez-Forero I, Labiano S, Azpilicueta A, Morales-Kastresana A, Quetglas JI, Wagena E, Rodríguez A, Chen L, Friedl P+ & Melero I+. Focussing and sustaining the antitumor CTL effector killer response by agonist anti-CD137 mAb. (* & +, contributed equally). Proc Natl Acad Sci USA 2015; 112(24): 7551–7556.
8. Cruz LJ, Tacken PJ, Zeelenberg IS, Srinivas M, Bonetto F, Weigelin B, Eich C, de Vries IJ, Figdor CG. Tracking targeted bimodal nanovaccines: immune responses and routing in cells, tissue, and whole organism. Mol Pharm, 2014. 11(12): 4299-313.
9. Friedl P, Weigelin B. A swiss army knife for CTL. Immunity, 2014. 41: 873-5.
10. Alexander S, Weigelin B, Winkler F and Friedl P. Preclinical intravital microscopy of the tumour-stroma interface: invasion, metastasis, and therapy response. Curr Opin Cell Bio, 2013. 25(5):659-71.
11. Weigelin B, Bakker GJ and Friedl P. Intravital third harmonic generation microscopy of collective melanoma cell invasion: Principles of interface guidance and microvesicle dynamics. IntraVital, 2012. 1(1):32-43.
12. Bonetto F, Srinivas M, Weigelin B, Cruz LJ, Heerschap A, Friedl P, Figdor CG and de Vries IJ. A large-scale (19) F MRI-based cell migration assay to optimize cell therapy. NMR Biomedicine, 2012. 25(9):1095-103.

13. Hagemann C, Weigelin B, Schommer S, Schulze M, Al-Jomah N, et.al. The cohesin-interacting protein, precocious dissociation of sisters 5A/sister chromatid cohesion protein 112, is up-regulated in human astrocytic tumors. International Journal of Molecular Medicine, 2011. 27(1):39-51.
14. Weigelin B, Krause M and Friedl P. Cytotoxic T lymphocyte migration and effector function in the tumor microenvironment. Immunology Letters, 2011. 138(1):19-21.
15. Weigelin B and Friedl P. A three-dimensional organotypic assay to measure target cell killing by cytotoxic T lymphocytes. Biochemical Pharmacology, 2010. 15;80(12):2087-91.
16. Friedl P and Weigelin B. Interstitial leukocyte trafficking and immune function. Nature Immunology, 2008. 9:839-848.

Invited Talks

INVITED PRESENTATIONS AT NATIONAL AND INTERNATIONAL CONFERENCES

7/2019 Protease-independent, guided migration along tissue highways, 2nd Symposium on Proteases in TiME, Prato, Italy

5/2019 Intravital Microscopy for visualizing immunotherapy in solid tumors, 4th Nordic Meeting on Tumor Microenvironment in Lymphoma, Aarhus, Denmark

9/2018 Cytotoxic T cell function in solid tumors: implications for immunotherapy, Good Bye Flat Biology, EACR, Berlin, Germany

5/2018 Intravital microscopy to visualize cytotoxic T cell function in solid tumors, Advanced Imaging of cellular processes in vitro and in vivo, Stockholm, Sweden

5/2018 Intravital Imaging for visualizing immunotherapy in solid tumors, 3rd Nordic Meeting on Tumor Microenvironment in Lymphoma, Aarhus, Denmark

3/2018 Introductory talk: Novel microscopic imaging techniques, EMIM, European Molecular Imaging Meeting, San Sebastian, Spain

10/2017 Activating serial killers – hyperthermia as supporting strategy for immunotherapy of cancer, PTHO, Warsaw, Poland

5/2017 Visualizing adoptive T cell transfer in solid tumors, TSS Annual Conference, Victoria, Canada

4/2017 Introductory talk: Optical Imaging, EMIM European Molecular Imaging Meeting, Cologne, Germany

10/2016 Guided cancer cell invasion along tissue highways, International symposium of skin cancers, Nice, France,

9/2016 Activating serial killers: Hyperthermia as supporting strategy for cancer immunotherapy, Annual Hyperthermia Congress, Berlin, Germany

3/2016 Visualizing cytotoxic T cell function and immunotherapy in solid tumors, EMIM, Utrecht, Netherlands

11/2015 Activating serial killers – hyperthermia as supporting strategy for immunotherapy of cancer, Hyperthermia Symposium, Krakau, Poland

11/2014 Dynamic imaging of immunotherapy, Immunology Symposium, Krakau, Poland

3/2014 Seriall killing of cancer cells by CTL: Detecting and overcoming tumor resistance niches, Immunotherapy Symposium, Pamplona, Spain

11/2013 Dynamic imaging of hyperthermia effects on tumor invasion and anti-tumor immune reaction, Hyperthermia Symposium, Krakau, Poland

9/2013 Intravital tissue imaging of collective tumor cell invasion: interface guidance and resistance niches, Physics of Cancer, Leipzig, Germany

9/2013 Intravital microscopy of tumor invasion and CTL effector function: mapping and targeting niches of the tumor microenvironment, ECCO, Amsterdam, Netherlands

9/2013 In vivo Imaging der Wirkung von Hyperthermie auf Tumorinvasion und die Funktion zytotoxischer T Zellen, DGHT Hyperthermie Symposium, Köln, Germany

3/2013 Infrared multiphoton- and higher harmonic generation microscopy for visualizing dynamic processes in deep tissues, ADF Annual Meeting 2013, Dessau, Germany

11/2012 Intravital imaging of tumor invasion and CTL effector function: the impact of the tumor microenvironment, ENCITE Cell Imaging and Tracking - Imaging plays a central role in tomorrow's medicine, Leiden Netherlands,

9/2012 Visualisierung der Effektorfunktion zytotoxischer T Zellen und die Bedeutung von Temperatur auf dynamische Prozesse der anti-Tumor Immunreaktion., III Hyperthermie Symposium, Cologne, Germany

10/2011 Dynamic In Vivo Imaging: Die Rolle des Tumormikromilieus auf anti-Tumor Immunreaktion und Tumorinvasion, Medizinische Woche Baden-Baden, Baden-Baden, Germany

5/2011 The Role of The Tumor Microenvironment In Immunotherapy, Biokrebs Kongress, Heidelberg, Germany

5/2011 Infrared multiphoton microscopy to monitor tumor invasion and experimental therapy in vivo, Light for Health Event, Barcelona, Spain

4/2011 Dynamic imaging of the tumor microenvironment: impact on invasion and CTL effector function, Society for Endocrinology BES 2011 meeting, Birmingham, United Kingdom

11/2010 Dynamic In Vivo Imaging: Die Rolle des Tumormikromilieus auf anti-Tumor Immunreaktion und Tumorinvasion, Medizinische Woche Baden-Baden, Baden-Baden, Germany

6/2010 Cooption of preexisting vessels conveys collective invasion and radioresistance in fibrosarcoma, 12th European Workshop on Cytogenetics and Molecular Genetics of Solid Tumors, Nijmegen, Netherlands

4/2010 Dynamic imaging of the tumor microenvironment: impact on invasion and CTL effector function, 1st Translational School of Science, Sao Paulo, Brazil

SEMINAR INVITATIONS

Seminar presentations on intravital microscopy of cancer invasion and immunotherapy

9/2018 Humanitas University, Milano, Italy

7/2017 University of Tubingen, Werner-von-Siemens Imaging Center, Tubingen, Germany

6/2016 Technical University Munich, Walter Brendel Centre of Experimental Medicine, Munich, Germany

4/2014 MD Anderson Cancer Center, Houston, TX, USA

Conferences and Courses attended

ORAL PRESENTATIONS

5/2018 Activating serial killers – hyperthermia as supporting strategy for immunotherapy of cancer, STM Annual Conference, Tuscon, AZ

4/2017 Activating serial killers – hyperthermia as supporting strategy for immunotherapy of cancer, STM Annual Conference, Cancun, Mexico

4/2017 Illuminating the hiding niche – targeting cancer bone metastasis, EMIM, European Molecular Imaging Meeting, Cologne, Germany

2/2017 Cancer cell elimination requires cytotoxic T cell cooperation, Young Investigator Workshop, MD Anderson Cancer Center, Houston, TX

1/2015 Guided cancer cell invasion along tissue highways, Gordon conference on Cell Migration, Galveston, TX, USA

1/2013 Intravital imaging of tumor invasion and CTL effector function: the impact of the tumor microenvironment. TOPIM, ESMI Winter Conference, Les Houches, France

6/2011 Improved infrared multiphoton microscopy and fluorescence lifetime imaging (FLIM) to monitor tumor invasion and experimental therapy in vitro and in vivo. EMIM. Leiden, The Netherlands

6/2010 CXCL12 modulates T cell - target cell interactions and serial killing. Dutch Tumor Immunology Meeting. Breukelen, The Netherlands

12/2009 CXCL12 modulates T cell - target cell interactions and serial killing. 1st Intercity Young Scientist Meeting (IYSM). Heemskerk, The Netherlands

6/2008 The tumor microenvironment modulates T cell - target cell interaction dynamics and serial killing. Dutch Tumor Immunology Meeting. Breukelen, The Netherlands

POSTER PRESENTATIONS

6/2014 Cancer cell elimination requires cytotoxic T cell cooperation. Gordon conference on Immunochemistry and Immunobiology, Newry, ME, USA

10/2012 Serial killing of cancer cells by CTL: Detecting And Overcoming Tumor Resistance Niches, Hallmarks of Cancer Cell Symposia, San Fancisco, CA

5/2011 Dynamic imaging of the tumor microenvironment: impact on invasion and CTL effector function, Cell Adhesion and Migration in Inflammation and Cancer, 5th Amsterdam Zoo Meeting, Amsterdam, Netherlands

6/2009 The tumor microenvironment modulates T cell - target cell interaction dynamics and serial killing, Adhesion Meeting, Nijmegen, Netherlands

Professional Memberships

ESMI, European Society for Molecular Imaging
Elected Board Member, 2018-2020

STM, Society for Thermal Medicine

ESHO, European Society for Hyperthermic Oncology

EACR, European Association for Cancer Research

GWUP, German Skeptics Society

Research Grants and Fellowships

2019 German National Excellence Strategy, Cluster of Excellence “iFIT” (Associate Investigator)

2017 - 2019 Rubicon Young Investigator Scholarship Award, Netherlands Organization for Scientific Research (NWO)

Awards and Honors

NITA, Young Investigator Award, Society for Thermal Medicine, 2017

Best Talk Young Investigator Workshop, MD Anderson Cancer Center, 2017

Nomination ‘VIVA 400’, Women in Science, 2017

Rubicon Young Investigator Scholarship Award, Netherlands Organization for Scientific Research (NWO), 2017-2019

Radboud University Internationalization Fund, Travel Award, Radboud University, 2014