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CONTACT INFORMATION	Janelia Research Campus Advanced Imaging Center 19700 Helix Drive Ashburn, VA 20147 USA	Phone: +1 (202) 527-8121 E-mail: boehmu@janelia.hhmi.org Home: ulrikeboehm.org
SUMMARY	Physicist, microscope builder & data scientist with a passion for community building/engagement, outreach, and teaching: I have over ten years' experience in building and running advanced light microscopy systems, analysis of microscopy data, and development of image acquisition & analysis workflows. Furthermore, I am highly engaged in community building/engagement, outreach, and teaching activities focusing on community service, women/diversity in science, open science, and microscopy for more than 15 years.	
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Microscope design, development, and application across a wide range of biological models</li><li>• Development of image and data processing and analysis tools</li><li>• Machine learning and its application in microscopic image analysis</li><li>• Statistical methods for large datasets</li><li>• Open software and hardware tools for imaging and microscopy</li></ul>	
POSITIONS	<b>Research Specialist</b> Janelia Research Campus, Advanced Imaging Center, Ashburn, VA, USA	2019 - present
	<ul style="list-style-type: none"><li>• Handling and troubleshooting of advanced light microscopes (iPALM, Lattice Light Sheet Microscope, SiMView Light Sheet Microscope, Aberration Corrected Multifocal Microscope, MOSAIC, FIB-SEM, cryo-SIM, etc), sample preparation and image analysis</li><li>• Support of (inter)national visitors during technical consultations and their imaging sessions at the microscopes of Janelia's Advanced Imaging Center</li><li>• Development and implementation of new image and data analysis strategies for users from around the world</li><li>• Review of proposal drafts, proposals and grants submitted to the Advanced Imaging Center</li><li>• Design and realization of microscopy and data analysis workshops and conferences</li></ul>	
	<b>Postdoctoral Research Fellow</b> National Institutes of Health, National Cancer Institute, Bethesda, MD, USA	2017 - 2018
	<ul style="list-style-type: none"><li>• Design and construction a microscope for live-cell 5-color single-molecule transcription imaging in eukaryotic cells at high resolution in time and space to capture promoter-enhancer interactions</li><li>• Development of advanced fluorescence labeling strategies for the genome based on dCas9 (CAS-FISH)</li><li>• Computational modeling and data analysis of 4D genome data</li></ul>	
	<b>Ph.D. Student</b> Max Planck Institute for Biophysical Chemistry, Göttingen, Germany Department of NanoBiophotonics (Prof. Dr. Stefan W. Hell) <i>Dissertation title:</i> "4Pi-RESOLFT nanoscopy" <i>Advisor:</i> Prof. Dr. Stefan W. Hell	2010 - 2016
	<ul style="list-style-type: none"><li>• Design and construction of a 4Pi-RESOLFT nanoscope, including optical and acquisition system. Controlling software was also developed.</li><li>• System / sample testing and optimization</li></ul>	
	<b>Master Student</b> Max Planck Institute of Biochemistry, Martinsried/Munich, Germany Department of Molecular Structural Biology (Prof. Dr. Wolfgang Baumeister)	2009

*Dissertation title:* “Correlative microscopy at liquid nitrogen temperature”

*Advisors:* Dr. Jürgen M. Plitzko, Prof. Dr. Wolfgang Baumeister

- Development and testing of a cryo transfer shuttle (CryoStage<sup>2</sup>) for the reliable transfer of amorphous frozen-hydrated samples from a fluorescence to an electron microscope for correlative microscopy
- Further development and testing of the software based on scale-invariant feature transform (SIFT) for the correlative microscopy approach

**Undergraduate Researcher** - various research assistant positions 2005 - 2008

- Evaluation of the mechanical properties of actin filaments in combination with different actin binding proteins at the Physics Department of the Technical University of Munich, Germany - Prof Andreas Bausch (2008)
- Study of HEK cells with FLIC-microscopy at the Max Planck Institute of Biochemistry, Martinsried, Germany - Prof Peter Fromherz (2008)
- Analysis of Multi-SANS data (with MIRA) and data of Cytochrom C (with the Neutron Spin Echo RESEDA) at the Research Neutron Source Heinz Maier-Leibnitz (FRM II), Munich, Germany - Dr Robert Georgii and Prof Peter Böni (2007)
- Study of surfaces and DNA with an AFM at the Physics Department of the Technical University of Munich, Germany - Prof Thorsten Hugel (2006)
- Performance evaluation of an animal PET scanner at the university hospital ”rechts der Isar” , Munich, Germany - Prof Sibylle Ziegler (2006)
- Data analysis of water levels of the Baltic Sea at the Leibnitz Institute for Baltic Sea Research, Warnemünde, Germany - Dr Torsten Seifert (2005)

EDUCATION **MicroMasters in Statistics and Data Science** 2020 - 2021  
Massachusetts Institute of Technology / MITx, Cambridge, MA, USA

**Ph.D. in Physics** 2010 - 2015  
Heidelberg University, Heidelberg, Germany

**Diploma in Physics** 2004 - 2009  
Technical University of Munich, Munich, Germany

HONORS & AWARDS **Helmsley Fellowship**, Helmsley Charitable Trust 2017  
**66th Lindau Nobel Laureate Meeting**, Participant 2016  
**Excellence Award**, Max Planck Society 2010  
**Oskar Karl Forster Scholarship**, Technical University of Munich 2009  
**Study Career Scholarship**, Technical University of Munich 2008

PUBLICATIONS 13. Huisman M., Hammer M., Rigano A., **Boehm U.** et al., *A perspective on Microscopy Metadata: data provenance and quality control*. arXiv, p1-15 (2021). doi:<https://arxiv.org/abs/1910.11370>

12. Hammer M., Huisman M., Rigano A., **Boehm U.** et al., *Towards community-driven metadata standards for light microscopy: tiered specifications extending the OME model*. bioRxiv, p1-27 (2021). doi:<https://doi.org/10.1101/2021.04.25.441198>

11. Nelson G.\*, **Boehm U.\*** et al., *QUAREP-LiMi: A community-driven initiative to establish guidelines for quality assessment and reproducibility for instruments and images in light microscopy*. arXiv, p1-17 (2021). doi:<https://arxiv.org/abs/2101.09153>

10. Galbraith J., Aaron J., **Boehm U.**, Chew T.-L. and Galbraith C., *Resolving the 3D Nano-architecture of the Actin Cytoskeleton*. Microscopy and Microanalysis, p1 (2020). doi:10.1017/S1431927620016736

9. Brown-Harding H., Cordelieres F., Poujol C., **Boehm U.**, Collinson L., *A 'lockdown post' from facility managers across the world.* FocalPlane, p1 (2020). doi:10.1242/focalplane.1244
8. **Boehm U.**, Hell S.W., Schmidt, R., *4Pi-RESOLFT nanoscopy.* Nature Comm. 7 (10504), p1-8 (2016). doi:10.1038/ncomms10504
7. **Boehm U.**, *4Pi-RESOLFT nanoscopy.* PhD Thesis, Heidelberg University (2016) doi: 10.11588/HEIDOK.00020200
6. **Boehm U.**, Schmidt R., Hell S.W., *Live cell 4pi nanoscopy.* European Biophysics Journal with Biophysics Letters 2015 Jul 1 (Vol. 44, pp. S75-S75). 233 SPRING ST, NEW YORK, NY 10013 USA: SPRINGER.
5. Ullal C.K., Primpke S., Schmidt R., **Boehm, U.**, Egner A., Vana P, Hell S.W., *Flexible Microdomain Specific Staining of Block Copolymers for 3D Optical Nanoscopy.* Macromolecules, 44, p7508–7510 (2011). doi: 10.1021/ma201504f
4. Ullal C., Schmidt R., **Boehm U.**, Primpke S., Vana P, Hell W.S., *STED Microscopy as a Characterization Tool for Three Dimensionally Nanostructured Block Copolymer Thin Films.* APS. 2011 Mar;2011:A43-002.
3. Rigort A., Bäuerlein F.J., Leis A., Gruska M., Hoffmann C., Laugks T., **Boehm U.**, Eibauer M., Gnaegi H., Baumeister W. and Pitzko J.M., *Micromachining tools and correlative approaches for cellular cryo-electron tomography.* J. Struct. Biol. 172, p169–179 (2010). doi: 10.1016/j.jsb.2010.02.011
2. Rigort A., Mathisen C., **Boehm U.**, Leis A., Lich B., Hayles M., Laugks T., Baumeister W. and Pitzko J.M., *Integrative Cryo-Correlative Microscopy Approaches.* Microscopy and Microanalysis. Vol 16(S2), p186–187 (2010). doi: 10.1017/S1431927610058216
1. **Boehm U.**, *Korrelative Mikroskopie bei Flüssigstickstoff-Temperatur.* Diploma Thesis, Technical University of Munich (2010)

\* these authors contributed equally to this work

PRESENTATIONS	<p><b>Junior Scientist Workshop on Biological Optical Microscopy</b> (<i>invited</i>), Janelia Research Campus, Ashburn, United States of America</p> <p><b>Transcription Seminar</b> (<i>invited</i>), Albert Einstein College of Medicine New York, United States of America</p> <p><b>Microscopy Seminar</b> (<i>invited</i>), Havard Medical School Boston, United States of America</p> <p><b>Microscopy Lunch Seminar</b> (<i>invited</i>), UMass Medical School Worcester, United States of America</p> <p><b>Single Biomolecules Meeting</b>, Cold Spring Harbor Laboratories Cold Spring Harbor, United States of America</p> <p><b>NIH Light Microscopy Interest Group Seminar</b> (<i>invited</i>), Bethesda, United States of America</p> <p><b>Chan Zuckerberg Initiative Imaging Workshop</b> (<i>invited</i>), CZ Biohub San Francisco, United States of America</p> <p><b>Chesapeake Bay Area Single Molecule Biology Meeting</b>,</p>	<p>2019</p> <p>2019</p> <p>2019</p> <p>2019</p> <p>2018</p> <p>2018</p> <p>2017</p> <p>2017</p>
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Baltimore, United States of America	
<b>Frontiers in Imaging Science Conference</b> , Ashburn, United States of America	2017
<b>Single Molecule Biophysics Conference</b> , Aspen, United States of America	2017
<b>Labeling and Nanoscopy Conference</b> , Heidelberg, Germany	2016
<b>MPIbpc Campus Seminar</b> ( <i>invited</i> ), Göttingen, Germany	2016
<b>NCI Departmental Seminar</b> ( <i>invited</i> ), Bethesda, United States of America	2016
<b>Departmental Seminar</b> ( <i>invited</i> ), Wyss Institute at Harvard University, Boston, United States of America	2016
<b>Lunch Talk</b> ( <i>invited</i> ), Harvard, Cambridge, United States of America	2016
<b>Biophysical Society Annual Meeting</b> , Los Angeles, United States of America	2016
<b>Seeing Is Believing Symposium</b> , Heidelberg, Germany	2015
<b>Deutsche Physikerinnen Tagung</b> ( <i>invited</i> ), Göttingen, Germany	2015
<b>Annual meeting of the European Light Microscopy Initiative (ELMI)</b> , Sitges, Spain	2015
<b>Focus On Microscopy (FOM)</b> , Göttingen, Germany	2015
<b>PROSPECTS. First Plenary Meeting</b> , Punta Negra, Majorca/Spain	2010
<b>TEACHING</b>	
<b>Fiji Image Processing and Analysis Workshop</b> (virtual workshop) Co-instructor, Turku Bioscience Centre, Turku, Finland	2021
<b>NIH FAES Image Processing and Analysis Workshop</b> (virtual workshop) Co-instructor, National Institutes of Health, Bethesda, United States of America	2021
<b>NIH FAES Super Resolution Workshop</b> (virtual workshop) Co-instructor, Foundation for Advanced Education in the Sciences (FAES) Bethesda, United States of America	2021
<b>Fiji Macros Programming</b> (virtual workshop) Co-lead instructor, Janelia Research Campus, Ashburn, United States of America	2020
<b>DECODE for Single Molecule Localization Microscopy</b> (virtual workshop) at the <i>From Image to Knowledge with ImageJ &amp; Friends</i> conference Co-instructor, Janelia Research Campus, Ashburn, United States of America	2020
<b>NIH FAES Image Processing and Analysis workshop</b> (virtual workshop) Teaching assistant, National Institutes of Health, Bethesda, United States of America	2020
<b>Open Science in Imaging and Microscopy</b> (breakout session during a workshop) Lead instructor, Janelia Research Campus, Ashburn, United States of America	2019
<b>Advanced Imaging Techniques in Biomedical Sciences</b> (summer intern journal club) Lead instructor, National Institutes of Health, Bethesda, United States of America	2018
<b>Introduction to microscopy</b> (graduate course) Teaching assistant, University of Massachusetts Medical School, Worcester, United States of America	2017
<b>Optical Microscopy &amp; Imaging in the Biomedical Sciences</b> (summer intern journal club) Lead instructor, National Institutes of Health, Bethesda, United States of America	2017
<b>Advanced physics laboratory course for physics students</b> (undergraduate course) Teaching assistant, Heidelberg University, Germany	2011
<b>Experimental Physics III: Optics</b> (undergraduate course) Teaching assistant, University of Göttingen, Germany	2011

	<b>Experimental Physics IV: Quantum, atomic and molecular physics</b> (undergraduate course), Teaching assistant, University of Göttingen, Germany	2010
	<b>Theoretical Physics I: Theoretical Mechanics</b> (undergraduate course) Teaching assistant, Technical University of Munich, Germany	2009
	<b>Theoretical Physics II: Electrodynamics</b> (undergraduate course) Teaching assistant, Technical University of Munich, Germany	2008
MENTORING	<b>Janelia Buddy Program for International Scientists</b> Focus: Facilitating the transition of international scientists to Janelia in partnership with Janelia's Human Resource Department Janelia Research Campus, Ashburn, United States of America	2020-present
	<b>Mentoring of Postbac Students</b> Focus: Navigating a scientific career Janelia Research Campus, Ashburn, United States of America	2020-present
	<b>Mentoring of PhD, College and Highschool Students</b> Focus: Navigating a scientific career, how to work in an optics laboratory & in-depth support with individual research projects National Institutes of Health, Bethesda, United States of America	2017-2018
	<b>Mentoring of PhD students and Master Students</b> Focus: Navigating a scientific career, how to work in an optics laboratory & in-depth support with individual research projects Max Planck Institute for Biophysical Chemistry, Göttingen, Germany	2010-2016
CONFERENCE ORGANIZATION	<b>Microscopy Club for North America</b> , Co-organizer Ashburn, United States of America	2021 - present
	<b>OIG-ABG Educational Lectures</b> , Co-organizer Ashburn, United States of America	2021 - present
	<b>OIG-MOIA Seminar Series</b> , Co-organizer Ashburn, United States of America	2020 - present
	<b>Virtual Optical Interest Group (OIG) Seminar Series</b> , Co-organizer Virtual seminar series with external speakers via Zoom during the COVID-19 lockdown Ashburn, United States of America	2020
	<b>Imaging Africa Microscopy Club</b> , Webinar support Ashburn, United States of America	2020
	<b>Frontiers in Imaging Science Conference</b> , Member of the local support team Ashburn, United States of America	2019
	<b>Labeling and Nanoscopy Conference 2018</b> , Website and social media support Heidelberg, Germany	2018
	<b>Division of International Services (DIS) Immigration Symposium</b> , Co-organizer National Institutes of Health, Bethesda, United States of America	2018
	<b>International Opportunities EXPO</b> , Co-organizer National Institutes of Health, Bethesda, United States of America	2018
	<b>Division of International Services (DIS) Immigration Symposium</b> , Co-organizer National Institutes of Health, Bethesda, United States of America	2017
	<b>I, Scientist Conference</b> , Co-organizer Berlin, Germany	2017

	<b>Labeling and Nanoscopy Conference 2016</b> , Co-organizer Heidelberg, Germany	2016
	<b>Focus On Microscopy (FOM)</b> , Social media support	2015 - present
	<b>PhDnet General Meeting</b> , Co-organizer Bonn, Germany	2011
PEER REVIEW	<b>Angewandte Chemie (International ed.), Biophysical Journal, Journal of Microscopy, Review Commons</b>	
PROFESSIONAL SERVICES	<b>QUAREP-LiMi</b> , Chair of the "White Paper" working group Freiburg, Germany	2020 - present
	<b>Frontiers in Bioinformatics</b> , Review Editor for Computational BioImaging Lausanne, Switzerland	2020 - present
	<b>CZI Imaging Scientists Round 2</b> , Grant reviewer San Francisco, United States of America	2020
	<b>QUAREP-LiMi</b> , Vice-chair of the "Image Quality" working group Freiburg, Germany	2020 - present
	<b>German BioImaging</b> , Committee member of the working groups for (1) Training and Knowledge Transfer and (2) Image Data Analysis & Management	2020 - present
	<b>BioImaging North America (BINA)</b> , Committee member of the "Quality Control and Data Management" working group	2020 - present
	<b>Janelia's Optical Interest Group (OIG)</b> , Co-coordinator Ashburn, Virginia, United States of America	2020 - present
	<b>GSO German Scholars Organization e.V.</b> , Coordinator for Local Chapter of German Scientists, Ashburn	2020 - present
	<b>Accelerating Science and Publication in Biology (ASAPbio)</b> , Ambassador	2018 - present
	<b>eLife Early-Career Advisory Group</b> , Ambassador	2017 - 2019
	<b>NIH Laser Safety Advisory Committee</b> , Committee member for the NCI National Institutes of Health, Bethesda, United States of America	2018
	<b>NIH Visiting Fellows Committee</b> , Co-chair National Institutes of Health, Bethesda, United States of America	2017 - 2018
	<b>NIH Light Microscopy Interest Group</b> , Co-coordinator National Institutes of Health, Bethesda, United States of America	2016 - present
	<b>DPG Arbeitskreis für Challengleichheit</b> , Board member Bad Honnef, Germany	2016 - present
	<b>Lindau Nobel Laureate Meeting</b> , Freelance writer Lindau, Germany	2016 - present
	<b>66th Lindau Nobel Laureate Meeting</b> , "Women in Science"-correspondent Lindau, Germany	2016
	<b>Lise Meitner Gesellschaft e.V.</b> , Co-founder and board member Berlin, Germany	2011
	<b>Max Planck PhDnet</b> , Steering group 2011 member & deputy spokesperson Max Planck Society, Munich, Germany	2011
	<b>PhD/Postdoc Community</b> , PhD/Postdoc representative Max Planck Institute for Biophysical Chemistry, Göttingen, Germany	2011 - 2014

CERTIFICATES &  
TRAINING

<b>Data Analysis for Social Scientists</b> A 11-week course by MITx to learn methods for harnessing and analyzing data to answer questions of cultural, social, economic, and policy interest.	2020
<b>Probability - The Science of Uncertainty and Data</b> A 16-week course by MITx to build foundational knowledge of data science with an introduction to probabilistic models, including random processes and the basic elements of statistical inference.	2020
<b>Fierce Conversations program</b> A 6-week course offered by Howard Hughes Medical Institute about Feedback, Confrontation, Team, Delegation, Coaching and Accountability.	2020
<b>LabVIEW Core 2</b> A certificate course offered by National Instruments about the LabVIEW basics.	2020
<b>LabVIEW Core 1</b> A certificate course offered by National Instruments about the LabVIEW basics.	2020
<b>HBS Entrepreneurship Essentials</b> Entrepreneurship Essentials is a 4-week, 30-hour online certificate program from Harvard Business School. Entrepreneurship Essentials introduces participants to the entrepreneurial journey from finding an idea to gaining traction in the marketplace to raising capital for a venture. Participants learn an overarching framework - People, Opportunity, Context, Deal - to evaluate opportunities, manage start-ups, and finance ventures.	2020
<b>HBS Management Essentials</b> Management Essentials is an 8-week, 35-hour online certificate program from Harvard Business School. Management Essentials takes a distinctive, hands-on approach to management. Participants in this course learn to identify, understand, design, and shape critical organizational and managerial processes as a means of getting the work done.	2019
<b>HBS CORE (Credential of Readiness)</b> CORE (Credential of Readiness) is a 150-hour certificate program on the fundamentals of business from Harvard Business School. CORE is comprised of three courses - Business Analytics, Economics for Managers, and Financial Accounting - developed by leading Harvard Business School faculty and delivered in an active learning environment based on the HBS signature case-based learning model.	2019
<b>Scientists Teaching Science</b> at the Office of Intramural Training and Education (OITE) at the National Institutes of Health, Bethesda, United States of America (9-week online pedagogy course)	2018
<b>Research Mentor Training</b> at the Office of Intramural Training and Education (OITE) at the National Institutes of Health, Bethesda, United States of America	2018
<b>Business of Science for Scientists</b> by SciPhD at the National Cancer Institute in Shady Grove, United States of America	2018
<b>Chromatin, Epigenetics and Gene Expression Course</b> at the Cold Spring Harbor Laboratory (CSHL) in Cold Spring Harbor, NY, United States of America, Course instructors: Prof Karen Adelman, Dr Luciano Di Croce, Prof Geeta Narlikar, Prof Ali Shilatifard	2018
<b>BioTech2: Recombinant DNA Methodology</b> at the Foundation for Advanced Education in the Sciences at the NIH (FAES), Bethesda, United States of America	2017
<b>Management Bootcamp for Postdocs</b> at the Office of Intramural Training and Education (OITE) at the National Institutes of	2017

Health, Bethesda, United States of America

**Ethics in Research Training for Postdocs**

at the Office of Intramural Training and Education (OITE) at the National Institutes of Health, Bethesda, United States of America

2017

**Workplace Dynamic Series**

about Self-Awareness, Conflict & Feedback, Team Skills, Diversity In A Multicultural Society at the Office of Intramural Training and Education (OITE) at the National Institutes of Health, Bethesda, United States of America

2016

COMPUTER SKILLS Languages: Python, MATLAB, LabVIEW, C++, R  
Software: Inventor (CAD)

PROFESSIONAL AFFILIATION American Physical Society, German Physical Society, BioImaging North America (BINA), German BioImaging Society, Network of European BioImage Analyst (NEUBIAS), Quantitative BioImaging Society

LANGUAGES German - native language  
English - fluent, spoken and written  
French - basic knowledge  
Swedish - basic knowledge  
Spanish - basic knowledge

REFERENCES Available upon request

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