Dr Carola–Bibiane Schönlieb

Employment history

09/2016–	Alan Turing Institute Fellow, Alan Turing Institute, British Library, London, UK.
03/2016–	Co-Director of the EPSRC Centre for Mathematical and Statistical Analysis of Multimodal Clinical Imaging, Faculty of Mathematics, University of Cambridge, UK.
11/2015–	Director of the Cantab Capital Institute for Mathematics of Information, Faculty of Mathematics, University of Cambridge, UK.
10/2015–	Reader in Applied and Computational Analysis, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, UK.
10/2011–	Head of Cambridge Image Analysis, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, UK.
10/2011–	Fellow of Jesus College, Cambridge, UK.
09/2010–09/2015	Lecturer in Applied and Computational Analysis, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, UK.
09/2009–09/2010	Postdoctoral Research Fellow, Institute of Numerical and Applied Mathematics, Georg-August Universität Göttingen, Germany.
10/2008–09/2009	Research Associate, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, UK.
10/2005–10/2008	Research Associate, Faculty of Mathematics, University of Vienna, Austria.
09/2002–06/2004	Research Associate, Department of Mathematics, University of Salzburg, Austria.

Educational qualifications

07/2009	Doctor of Philosophy, Department of Applied Mathematics and Theoretical Physics, University of Cambridge (United Kingdom)
01/2004	Diploma in mathematics with distinction, University of Salzburg (Austria)

Selected honours and awards

IHP visiting professorship, 2019.

Philip Leverhulme Prize, 2017.

Whitehead prize of the London Mathematical Society, 2016.

Mary Bradburn Award, awarded from the BFWG (British Federation of Women Graduates) in 2008.

Key grant income

01/2017–12/2018	Global Alliance funding for *Mathematical and statistical theory of imaging*. PI: C.-B. Schönlieb. Size $\approx$ £ 140K.
03/2016–02/2020	EPSRC Centre for *Mathematical and Statistical Analysis of Multimodal Clinical Imaging*. PI: J. Aston. Co-Is: C.-B. Schönlieb (Co-Director), S. Bohndiek, E. Bullmore, N. Burnet, T. Fokas, F. Gilbert, A. Hansen, S. Reichelt, J. Rudd, R. Samworth, G. Treece, G. Williams. Size $\approx$ £ 1500K.
11/2015–10/2018	Leverhulme Trust project on *Breaking the non-convexity barrier*. PI: C.-B. Schönlieb. CoI: M. Benning, L. Gladden, M. Möller. Size $\approx$ £ 250K.
04/2015–12/2015	Isaac Newton Trust Grant on *Automated Contouring for Radiotherapy Treatment Planning*. PI: C.-B. Schönlieb. CoIs: N. Burnet, X. Cai, A. Parker. Size $\approx$ £ 30K.
12/2014–11/2017	EPSRC grant Nr. EP/M00483X/1 *Efficient computational tools for inverse imaging problems*. PI: C.-B. Schönlieb. CoI: T. Valkonen. Size $\approx$ £ 500K.
09/2014–09/2016	CCI Collaborative Fund on *Assessing the conservation quality of tropical forest unmanned aerial vehicles*. PIs: D. Coomes, J. Lindsell, C.-B. Schönlieb, T. Swinfield. Size $\approx$ £ 70K.

05/2014–04/2015	Wellcome Trust/ University of Cambridge Senior ISSF internship for the project *Development of Image Analysis Algorithms for Monitoring Forest Health from Aircraft.* PIs: X. Cai, D. Coomes, C.-B. Schönlieb. Size ≈ £ 15K.
07–09/2012	Mathworks Academic Support for *Development of MATLAB Tools for the Numerical Analysis Tripos.* PIs: S. Cowley, A. Iserles, C.-B. Schönlieb and A. Shadrin. Size ≈ £ 30K.
07/2012–07/2013	EPSRC / Isaac Newton Trust Small Grant *Non-smooth geometric reconstruction for high resolution MRI imaging of fluid transport in bed reactors.* PI: C.-B. Schönlieb. Size ≈ £ 50K.
05/2012–05/2014	EPSRC first grant Nr. EP/J009539/1 *Sparse & Higher-order Image Restoration.* PI: C.-B. Schönlieb. Size ≈ £ 120K.
01/2012–12/2013	Royal Society International Exchange Award Nr. IE110314 *High-order Compressed Sensing for Medical Imaging.* PIs: M. Burger & C.-B. Schönlieb. Size ≈ £ 12K.

EDITORIAL, REVIEW & SCIENTIFIC ADVISORY ACTIVITIES

Editorial activities: associate editor for *EJAM* 2017–; associate editor for *Journal of Mathematical Imaging and Vision* 2017–; associate editor for *IMA Numerical Analysis* 2017–, section editor for *SIAM Review* 2017–, editor for *ESAIM Proceedings* 2012–; Member of International Advisory Panel for *Inverse Problems* 2015–.

Member of review panel of international institutes and funding agencies: *Wellcome/EPSRC representative* for iFIND project, 2017–; *Weierstrass Institute for Applied Analysis and Stochastics (WIAS)*, Berlin, Germany, 2017; EPSRC review panels, 2017–.

Member of scientific committees: *SIAM Conference for Imaging Sciences 2018, Mathematics and Image Analysis Conference 2016 & 2018, Applied Inverse Problems Conference 2015.*

Member of programme committees: *International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition 2015, Scale Space and Variational Methods Conference 2013, 2015 & 2017.*

ACADEMIC SUPERVISION

I am currently supervising nine PhD students and five Postdoctoral Researchers. Since 2010 I have supervised five PhD students to completion, and three Postdoctoral Researchers of which two hold permanent Faculty positions now.

SELECTED PUBLICATIONS SINCE 2010

M. J. Ehrhardt, P. Markiewicz, A. Chambolle, P. Richtárik, J. Schott, C.-B. Schönlieb, Faster PET Reconstruction with a Stochastic Primal-Dual Hybrid Gradient Method, *Proceedings of SPIE* 2017.

M. Burger, H. Dirks and C.-B. Schönlieb, A Variational Model for Joint Motion Estimation and Image Reconstruction, to appear in *SIAM Imaging Sciences* 2017.

J. Grah, J. Harrington, S. Boon Koh, J. Pike, A. Schreiner, M. Burger, C.-B. Schönlieb, S. Reichelt, ăMathematical Imaging Methods for Mitosis Analysis in Live-Cell Phase Contrast Microscopy, *Methods*, 115, 15 February 2017, Pages 91-99.ă

L. Calatroni, Y. van Gennip, H. Rowland, C.-B. Schönlieb, A. Flenner, Graph clustering, variational image segmentation methods and Hough transform scale detection for object measurement in images, *J Math Imaging Vis* (2017) 57: 269.

C.-B. Schönlieb, ăPartial Differential Equation Methods for Image Inpainting, Cambridge Monographs on Applied and Computational Mathematics (No. 29), *Cambridge University Press* 2015.

J. Lee, X. Cai, C.-B. Schönlieb, and D. Coomes, Non-parametric Image Registration of Airborne LiDAR, Hyperspectral and Photographic Imagery of Wooded Landscapes, *Geoscience and Remote Sensing, IEEE Transactions on*, 53(11), 6073-6084, 2015.

M. Burger, J. Müller, E. Papoutsellis, and C.-B. Schönlieb, Total Variation Regularisation in Measurement and Image space for PET Reconstruction, *Inverse Problems* 30 (10), 105003.

JE. Scaife, K. Harrison, A. Drew, X. Cai, J. Lee, CB. Schönlieb, M. Sutcliffe, MA. Parker, S. Freeman, M. Romanchikova, S. Thomas, R. Jena, A. Bates, N. Burnet, ăAccuracy of manual and automated rectal contours using helical tomotherapy image guidance scans during prostate radiotherapy, 2015 Genitourinary Cancers Symposium, *Journal of Clinical Oncology* 33, 2015 (suppl 7; abstr 94).

M. Benning, L. Gladden, D. Holland, C.-B. Schönlieb, and T. Valkonen, Phase reconstruction from velocity-encoded MRI measurements - a survey of sparsity-promoting variational approaches, *Journal of Magnetic Resonance* 238, pp. 26 - 43, January 2014.

Cambridge, UK. April 6, 2018