TALON CHANDLER
CURRICULUM VITÆ

Biographical Information

Born:	June 24, 1993 in Calgary, Alberta
Citizenship:	Canada
Address:	302–2045 Dunbar Street Vancouver, British Columbia V6R 3M5
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Current Position

Postdoctoral Scholar 2021–
Advisor: Sabrina Leslie
University of British Columbia

Education

[2] **Ph.D. Medical Physics** 2020
Dissertation: "Spatio-angular fluorescence microscopy"
Advisor: Patrick La Rivière
University of Chicago

[1] **B.A.Sc. Engineering Physics** 2015
with Electrical Engineering Specialization, with Distinction
GPA: 3.93/4.00
University of British Columbia

Publications

[6] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., "Spatio-angular fluorescence microscopy III. Constrained angular diffusion, polarized excitation, and high-NA imaging," *Journal of the Optical Society of America A*, vol. 37, no. 9, pp. 1465–1479, Sep. 2020, ISSN: 1520-8532. DOI: 10.1364/JOSAA.389217. PDF

[5] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., "Spatio-angular fluorescence microscopy II. Paraxial $4f$ imaging," *J. Opt. Soc. Am. A*, vol. 36, no. 8, pp. 1346–1360, Aug. 2019. DOI: 10.1364/JOSAA.36.001346. PDF

[4] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., "Spatio-angular fluorescence microscopy I. Basic theory," *J. Opt. Soc. Am. A*, vol. 36, no. 8, pp. 1334–1345, Aug. 2019. DOI: 10.1364/JOSAA.36.001334. PDF

[3] **Chandler, T.**, Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P. J., "Single-fluorophore orientation determination with multiview polarized illumination: Modeling and microscope design," *Optics Express*, vol. 25, no. 25, 2017. DOI: 10.1364/OE.25.031309. PDF

[2] Day, K. J., La Rivière, P. J., **Chandler, T.**, Bindokas, V. P., Ferrier, N. J., Glick, B. S., "Improved deconvolution of very weak confocal signals," *F1000Research*, vol. 6, no. 787, 2017. DOI: 10.12688/f1000research.11773.1. PDF

[1] Shechter, S. M., **Chandler, T.**, Skandari, M., Zalunardo, N., "Cost-effectiveness analysis of vascular access referral policies in CKD," *American Journal of Kidney Diseases*, vol. 70, no. 3, pp. 368–376, 2017. DOI: 10.1053/j.ajkd.2017.04.020. PDF

Patent

[1] Shroff, H., Kumar, A., Mehta, S., La Rivière, P.J., Oldenbourg, R., Wu, Y., **Chandler, T.**, "Systems and methods for three-dimensional fluorescence polarization via multiview imaging", US#16616891. 2020/12/10

Abstracts/Presentations

[11] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J.,"3D and 4D computational imaging of molecular orientation with multiview polarized fluorescence microscopy," Electronic Imaging Conference, Burlingame, CA. 20 minute invited talk presented by La Rivière, P.J. 09/2019

[10] Oldenbourg, R., **Chandler, T.**, Tran, M., Guo, M., Shroff, H., La Rivière, P.J., "Fast and comprehensive mapping of molecular orientation using multi-view polarized fluorescence microscopy," EMBL Seeing is Believing, Heidelberg, DE. Poster presented by Oldenbourg, R. 10/2019

[9] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J.,"Spatio-angular fluorescence imaging with a polarized illumination light-sheet dual-view microscope," Junior Scientist Workshop on Biological Optical Microscopy, Janelia Research Campus, VA. 20 minute talk. 09/2019

[8] **Chandler, T.**, La Rivière, P.J.,"Multipole spatio-angular fluorescence microscopy," Optics Society of America, Mathematics in Imaging, Munich, DE. 12 minute talk. **Outstanding Student Presentation Award** 06/2019

[7] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J.,"Spatio-angular fluorescence imaging with a polarized illumination light-sheet dual-view microscope," Frontiers in Imaging Science, Janelia Research Campus, VA. Poster. 05/2019

[6] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Spatio-angular fluorescence imaging with a polarized illumination light-sheet dual-view microscope," Focus on Microscopy, London, UK. 20 minute talk. 04/2019

[5] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Spatio-angular imaging with a polarized light sheet dual-view fluorescence microscope," Advanced Imaging Methods, Berkeley, CA. Poster. 02/2019

[4] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Spatio-angular imaging with a polarized light sheet dual-view fluorescence microscope," NSF Workshop on Enabling Biological Discovery through Innovations in Imaging and Computation, Woods Hole, MA. Poster. 11/2018

[3] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Spatio-angular restoration of fluorescence microscopy data," Optics Society of America, Mathematics in Imaging, Orlando, FL. 12 minute talk. 06/2018

[2] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Spatio-angular restoration of fluorescence microscopy data," Gordon Image Science Conference, Easton, MA. 15 minute talk and poster. 06/2018

[1] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., La Rivière, P.J., "Single-fluorophore orientation determination with multiview polarized illumination microscope," IEEE International Symposium on Biomedical Imaging (ISBI), Washington, DC. Poster. 04/2018

Miscellaneous Presentations

[9] "Anholonomy: falling cats, parallel parking, and polarized light," Graduate Program on Medical Physics Journal Club. 30 minute talk. 01/2020

[8] "Spatio-angular fluorescence microscopy," Graduate Program on Medical Physics Colloquium, Chicago, IL. 1 hour talk. 04/2019

[7] "Spatio-angular inverse problems in fluorescence microscopy," Inverse Problems in Imaging Seminar, Chicago, IL. 1 hour talk. 03/2019

[6] "DNA microscopy," Graduate Program on Medical Physics Journal Club. 30 minute talk. **Carl J. Vyborny Award for Best Journal Club Presentation** 03/2019

[5] "Are lenses necessary?" Graduate Program on Medical Physics Journal Club. 30 minute talk. **Carl J. Vyborny Award for Best Journal Club Presentation** 03/2018

[4] "Mapping molecular order in living organisms using polarized light microscopy," with Rudolf Oldenbourg, University of California, Berkeley. 1 hour talk. 10/2017

[3] "Mapping molecular order in living organisms using polarized light microscopy," with Rudolf Oldenbourg, SCIEN Colloquium, Stanford University. 1 hour talk. 10/2017

[2] "Evaluating gambles using dynamics," Graduate Program on Medical Physics Journal Club. 30 minute talk. **Carl J. Vyborny Award for Best Journal Club Presentation** 04/2017

[1] "Digital holography for radiation dosimetry," Graduate Program on Medical Physics Journal Club. 30 minute talk. 04/2016

Research History

[5] **Leslie Lab**, University of British Columbia — 01/2021–
Advisor: Sabrina Leslie

[4] **La Rivière Lab**, University of Chicago — 09/2015–12/2020
Advisor: Patrick La Rivière

[3] **Oldenbourg Lab**, Marine Biological Laboratory — 09/2017–09/2018
Advisor: Rudolf Oldenbourg

[2] **MRI Research Centre**, University of British Columbia — 04/2014–09/2015
Advisors: Alex MacKay & Carl Michal

[1] **Centre For Operations Excellence**, University of British Columbia — 04/2013–09/2015
Advisor: Steven Shechter

Employment History

[2] **Kardium Inc.**, Burnaby, BC — 09/2013–12/2013
Junior Engineer

[1] **SRK Consulting Inc.**, Vancouver, BC — 01/2012–04/2012
Junior Engineer

Teaching

[3] **Introduction to Medical Physics**, University of Chicago — 2019
Teaching Assistant
Topics: Medical imaging and radiation therapy
Rating: 4.7/5.0 from 11 students

[2] **Medical Imaging 1**, University of Chicago — 2017
Teaching Assistant
Topics: X-ray imaging, MRI, image restoration
Rating: 5.0/5.0 from 5 students

[1] **Mathematics For Medical Physics**, University of Chicago — 2016
Teaching Assistant
Topics: Linear systems theory, stochastic processes, image reconstruction
Rating: 4.8/5.0 from 5 students

Awards

[11]	O'Brien–Hasten Research Collaboration Award	$1.5k	2019
[10]	University of Chicago Graduate Council Travel Award	$600	2019
[9]	University of Chicago Biological Sciences Division Travel Award	$500	2019
[8]	University of Chicago Biological Sciences Division Graduate Fellowship	$30k	2016
[7]	Eastern Irrigation District Graduate Scholarship	$2k	2014

[6]	NSERC Undergraduate Research Award	$4k	2014
[5]	NSERC Industrial Undergraduate Research Award	$4k	2013
[4]	Interpipeline Discovery Scholarship	$2k	2011
[3]	UBC President's Entrance Scholarship	$1.5k	2010
[2]	Alexander Rutherford Scholarship	$2.5k	2010
[1]	Junior Citizen of the Year, City of Brooks	-	2010

Professional Membership

[4]	The Optical Society of America (OSA)	2017–
[3]	The International Society for Optics and Photonics (SPIE)	2016–
[2]	The American Association of Physicists in Medicine (AAPM)	2015–2017
[1]	Engineers & Geoscientists of British Columbia (EGBC)	2010–2016

Reviewing

[6]	European Biophysical Journal	2019
[5]	Optics Letters	2019–2021
[4]	Nature Communications	2018–2019
[3]	Optica	2018
[2]	Optics Express	2018–2020
[1]	Journal of the Optical Society of America A	2017

Computing

Top Language:	Python
Competent Languages:	C, C++, Bash, MATLAB
Familiar Languages:	R, Mathematica, HTML/CSS
Tools:	GNU Emacs, LaTeX, git, VTK, ImageJ

Other Activities

Ultramarathon running	12 races $\geq$ 26.2 miles
SCUBA diving	15 open water dives, $\sim$600 minutes underwater
Apiculture	