TALON CHANDLER

CURRICULUM VITÆ

Biographical Information

Born: June 24, 1993 in Calgary, Alberta

Citizenship: Canada

Address: 2N-1003 East 53rd Street

Chicago, Illinois

60615

Phone: (312) 978-1901

Email: talonchandler@uchicago.edu

Website: talonchandler.com

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.
- [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. [2] 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.
- [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., 2020/12/10 **Chandler, T.**, "Systems and methods for three-dimensional fluorescence polarization via multiview imaging", US#16616891.

Abstracts/Presentations

- [11] Chandler, T., Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., 09/2019 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.
- [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.
- [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.
- [8] Chandler, T., La Rivière, P.J., "Multipole spatio-angular fluorescence microscopy," 06/2019 Optics Society of America, Mathematics in Imaging, Munich, DE. 12 minute talk.

 Outstanding Student Presentation Award
- [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.
- [6] Chandler, T., Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., 04/2019 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.
- [5] Chandler, T., Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., Uza Rivière, P.J., "Spatio-angular imaging with a polarized light sheet dual-view fluorescence microscope," Advanced Imaging Methods, Berkeley, CA. Poster.
- [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.
- [3] Chandler, T., Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., Ua Rivière, P.J., "Spatio-angular restoration of fluorescence microscopy data,"

 Optics Society of America, Mathematics in Imaging, Orlando, FL. 12 minute talk.

[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
Mi	scellaneous 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
Re	search History	
[4]	La Rivière Lab , University of Chicago Advisor: Patrick La Rivière	09/2015-
[3]	Oldenbourg Lab, Marine Biological Laboratory Advisor: Rudolf Oldenbourg 09/2017	-09/2018
[2]	MRI Research Centre, University of British Columbia 04/2014 Advisors: Alex MacKay & Carl Michal	-09/2015
[1]	Centre For Operations Excellence, University of British Columbia 04/2013 Advisor: Steven Shechter	-09/2015

Em	ployment History		
[2]	Kardium Inc., Burnaby, BC Junior Engineer	09/2013-12	2/2013
[1]	SRK Consulting Inc., Vancouver, BC Junior Engineer	01/2012-04	4/2012
Tea	nching		
[3]	Introduction to Medical Physics, University of Chicago Teaching Assistant Topics: Medical imaging and radiation therapy Rating: 4.7/5.0 from 11 students		2019
[2]	Medical Imaging 1, University of Chicago Teaching Assistant Topics: X-ray imaging, MRI, image restoration Rating: 5.0/5.0 from 5 students		2017
[1]	Mathematics For Medical Physics, University of Chicago Teaching Assistant Topics: Linear systems theory, stochastic processes, image reconstruction Rating: 4.8/5.0 from 5 students		2016
Aw	rards		
[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
Pro	ofessional 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	
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2010 – 2016

Engineers & Geoscientists of British Columbia (EGBC)

[1]

Reviewing

[6]	European Biophysical Journal	2019
[5]	Optics Letters	2019
[4]	Nature Communications	2018 – 2019
[3]	Optica	2018
[2]	Optics Express	2018
[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 $12 \text{ races} \ge 26.2 \text{ miles}$

SCUBA diving 15 open water dives, ∼600 minutes underwater Apiculture