

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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Website: talonchandler.com





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
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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. 03/2019
Carl J. Vyborny Award for Best Journal Club Presentation
 - [5] “Are lenses necessary?” Graduate Program on Medical Physics Journal Club. 30 minute talk. 03/2018
Carl J. Vyborny Award for Best Journal Club Presentation
 - [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. 04/2017
Carl J. Vyborny Award for Best Journal Club Presentation
 - [1] “Digital holography for radiation dosimetry,” Graduate Program on Medical Physics Journal Club. 30 minute talk. 04/2016
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Research History

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|-----|--|-----------------|
| [5] | Leslie Lab , University of British Columbia
Advisor: Sabrina Leslie | 01/2021– |
| [4] | La Rivière Lab , University of Chicago
Advisor: Patrick La Rivière | 09/2015–12/2020 |
| [3] | Oldenbourg Lab , Marine Biological Laboratory
Advisor: Rudolf Oldenbourg | 09/2017–09/2018 |
| [2] | MRI Research Centre , University of British Columbia
Advisors: Alex MacKay & Carl Michal | 04/2014–09/2015 |
| [1] | Centre For Operations Excellence , University of British Columbia
Advisor: Steven Shechter | 04/2013–09/2015 |
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Employment History

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|-----|---|-----------------|
| [2] | Kardium Inc. , Burnaby, BC
Junior Engineer | 09/2013–12/2013 |
| [1] | SRK Consulting Inc. , Vancouver, BC
Junior Engineer | 01/2012–04/2012 |
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Teaching

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| [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 |
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Awards

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| [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, L ^A T _E X, git, VTK, ImageJ

Other Activities

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