

TALON CHANDLER

CURRICULUM VITÆ

Biographical Information

Born: June 24, 1993 in Calgary, Alberta
Citizenship: Canada
Address: 2N-1003 East 53rd Street
Chicago, Illinois
60615
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Education

- [2] **(In Progress) Ph.D. Medical Physics** 2015–2020
Thesis: “Spatio-angular fluorescence microscopy”
Advisor: Dr. Patrick La Rivière
University of Chicago
- [1] **B.A.Sc. Engineering Physics** 2010–2015
with Electrical Engineering Minor, with Distinction
GPA: 3.93/4.00
University of British Columbia
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Publications

- [5] **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
- [4] **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
- [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
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Abstracts/Presentations

- [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., 05/2019
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.
 - [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., 02/2019
La 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., 11/2018
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., 06/2018
La 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., 06/2018
La Rivière, P.J., “Spatio-angular restoration of fluorescence microscopy data,”
Gordon Image Science Conference, Easton, MA. 15 minute talk and poster.
 - [1] **Chandler, T.**, Guo, M., Kumar, A., Mehta, S., Shroff, H., Oldenbourg, R., 04/2018
La Rivière, P.J., “Single-fluorophore orientation determination with multiview
polarized illumination microscope,” IEEE International Symposium on Biomedical
Imaging (ISBI), Washington, DC. Poster.
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Miscellaneous Presentations

- [8] “Spatio-angular fluorescence microscopy,” 04/2019
Graduate Program on Medical Physics Colloquium, Chicago, IL. 1 hour talk.
- [7] “Spatio-angular inverse problems in fluorescence microscopy,” 03/2019
Inverse Problems in Imaging Seminar, Chicago, IL. 1 hour talk.
- [6] “DNA microscopy,” 03/2019
Graduate Program on Medical Physics Journal Club. 1 hour talk.
- [5] “Are lenses necessary?” 03/2018
Graduate Program on Medical Physics Journal Club. 1 hour talk.
Carl J. Vyborny Award for Outstanding Journal Club Presentation

- [4] “Mapping molecular order in living organisms using polarized light microscopy,” 10/2017
with Rudolf Oldenbourg, University of California, Berkeley. 1 hour talk.
 - [3] “Mapping molecular order in living organisms using polarized light microscopy,” 10/2017
with Rudolf Oldenbourg, SCIEN Colloquium, Stanford University. 1 hour talk.
 - [2] “Evaluating gambles using dynamics,” 04/2017
Graduate Program on Medical Physics Journal Club. 30 minute talk.
Carl J. Vyborny Award for Outstanding Journal Club Presentation
 - [1] “Digital holography for radiation dosimetry,” 04/2016
Graduate Program on Medical Physics Journal Club. 30 minute talk.
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Research History

- [5] **La Rivière Lab**, University of Chicago 05/2016–
Advisors: Dr. Patrick La Rivière & Dr. Rudolf Oldenbourg
Topics: Polarized light microscopy, 3D reconstruction
 - [4] **Kao Lab**, University of Chicago 01/2016–04/2016
Advisor: Dr. Chien-Min Kao
Topics: PET detectors, statistical signal processing
 - [3] **MRI Research Centre**, University of British Columbia 04/2014–09/2015
Advisors: Dr. Alex MacKay & Dr. Carl Michal
Topics: NMR, MRI, inhomogeneous magnetization transfer
 - [2] **Haas Lab**, University of British Columbia 01/2014–04/2014
Advisor: Dr. Kelly Sakaki
Topics: Single cell electroporation, two-photon microscopy
 - [1] **Centre For Operations Excellence**, University of British Columbia 04/2013–09/2015
Advisor: Dr. Steven Shechter
Topics: Health care optimization, Monte Carlo simulation
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Employment History

- [2] **Kardium Inc.**, Burnaby, BC 09/2013–12/2013
Junior Engineer
Topics: Cardiac ablation, tissue conductivity, image analysis
 - [1] **SRK Consulting Inc.**, Vancouver, BC 01/2012–04/2012
Junior Engineer
Topics: Waste water management, Monte Carlo simulation
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Teaching

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| [3] | Introduction to Medical Physics , University of Chicago | 2019 |
| | Teaching Assistant | |
| | Topics: Medical imaging and radiation therapy | |
| | Rating: In progress | |
| [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 | |
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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 |
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Professional Membership

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| [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– |
| [1] | Engineers & Geoscientists of British Columbia (EGBC) | 2010– |
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Reviewing

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| [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 |
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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, OpenGL, ImageJ

Other Activities

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