

# TALON CHANDLER

## CURRICULUM VITÆ

### Biographical Information

Born: June 24, 1993 in Calgary, Alberta  
Citizenship: Canada  
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Chicago, Illinois  
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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,” *arXiv preprint*, 2019.  PDF
- [4] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., “Spatio-angular fluorescence microscopy II. Paraxial  $4f$  imaging,” *arXiv preprint*, 2019.  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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## Presentations

- [9] “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
- [8] “Spatio-angular restoration of fluorescence microscopy data” Optics Society of America, Mathematics in Imaging, Orlando, FL. 12 minute talk. 6/2018
- [7] “Spatio-angular restoration of fluorescence microscopy data” Gordon Image Science Conference, Easton, MA. 15 minute talk and poster. 6/2018
- [6] “Single-fluorophore orientation determination with multiview polarized illumination microscope” IEEE International Symposium on Biomedical Imaging (ISBI), Washington, DC. Poster. 4/2018
- [5] “Are lenses necessary?” Graduate Program on Medical Physics Journal Club. 1 hour talk. 3/2018  
**Carl J. Vyborny Award for Outstanding 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 Outstanding 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

- [5] **La Rivière Lab**, University of Chicago 05/2016–  
Advisors: Dr. Patrick La Rivière & Dr. Rudolph 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

- [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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|-----|------------------------------------------------------------------------|--------|------|
| [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

- [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] | Optica                                      | 2018 |
| [3] | Nature Communications                       | 2018 |
| [2] | Optics Express                              | 2018 |
| [1] | Journal of the Optical Society of America A | 2017 |

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## Computing

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|-----------------------------|-----------------------------------------------------------------|
| <b>Top Language:</b>        | Python                                                          |
| <b>Competent Languages:</b> | C, C++, Bash, MATLAB                                            |
| <b>Familiar Languages:</b>  | R, Mathematica, HTML/CSS                                        |
| <b>Tools:</b>               | GNU Emacs, L <sup>A</sup> T <sub>E</sub> X, git, OpenGL, ImageJ |

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## Other Activities

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|------------------------------|----------------------------------------------------|
| <b>Ultramarathon running</b> | 12 races $\geq$ 26.2 miles                         |
| <b>SCUBA diving</b>          | 15 open water dives, $\sim$ 600 minutes underwater |
| <b>Apiculture</b>            |                                                    |