

# 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

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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

- [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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### In Review

- [2] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., *Spatio-angular fluorescence microscopy II. Paraxial 4f imaging*, Journal of the Optical Society of America A.  PDF
- [1] **Chandler, T.**, Shroff, H., Oldenbourg, R., La Rivière, P. J., *Spatio-angular fluorescence microscopy I. Basic theory*, Journal of the Optical Society of America A.  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.
- [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] | <b>Introduction to Medical Physics</b> , University of Chicago            | 2019 |
|     | Teaching Assistant  |      |
|     | Topics: Medical imaging and radiation therapy                             |      |
|     | Rating: In progress   |      |
| [2] | <b>Medical Imaging 1</b> , University of Chicago                          | 2017 |
|     | Teaching Assistant  |      |
|     | Topics: X-ray imaging, MRI, image restoration                             |      |
|     | Rating: 5.0/5.0 from 5 students   |      |
| [1] | <b>Mathematics For Medical Physics</b> , 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

<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

<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>	