

# Daniel Chan

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## Education

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**University of Chicago** **Chicago, IL, USA**  
*MS (admitted as a PhD student), Microbiology (Infectious disease focused department)* *2011–2016*

**University of Waterloo** **Waterloo, ON, Canada**  
*BS, Honours Microbiology and English (Rhetoric) Minor* *2006–2011*

**Certificate programs:** Business of Life Sciences, Elements of Successful Teaching in the Sciences, Elements of Successful Writing in the Sciences, Data Analysis in R, Software Carpentry (R)

## Work/Research Experience

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**Intouch Solutions, Editorial** **New York, NY, USA**  
*Senior Medical Analyst, Manager: Jaii Phillips-Beckley* *September 2018–present*

- checked claims in a pharmaceutical advertisements for accuracy as per FDA guidances and scientific literature
- solicited consensus in diverse teams to direct edits to creative material
- communicated through reports and presentations the medical/scientific aspects of pharmaceuticals
- conducted competitive analyses of marketed and pipeline pharmaceuticals/medical devices
- enforced and trained team members in evolving business processes

**Intouch Solutions, Creative Services** **New York, NY, USA**  
*Scientific Analyst, Manager: Jaii Phillips-Beckley* *January 2017–September 2018*

**University of Chicago, Department of Microbiology** **Chicago, IL, USA**  
*Graduate Student, PI: Dr. Julianne Bubeck Wardenburg* *September 2011–December 2016*

- managed an independent scientific research project in a BSL2+ laboratory
- supervised and trained a visiting MD student to complete a small research project
- cultured 3D organotypic tissue equivalents using primary human keratinocytes
- generated and complemented bacterial mutants of *Staphylococcus aureus*
- prepared and imaged specimens for immunofluorescent microscopy and scanning electron microscopy

**University of Waterloo, Department of Biology** **Waterloo, ON, Canada**  
*Senior Thesis Student, Supervisor/PI: Dr. John J Heikkila* *September 2010–June 2011*

- took previous molecular biology skills and applied them to a new scientific context
- cloned and purified two heat shock proteins
- performed assays to assess molecular chaperone function of the recombinant protein

**Yale University, Department of Neurobiology** **New Haven, CT, USA**  
*Research Assistant, PI: Dr. Nenad Šestan* *January 2010–September 2010*

- developed a polysome purification protocol using gradient centrifugation
- measured promoter strength in a neuroblastoma cell line using luciferase reporters
- assisted in management of a transgenic mouse colony
- cloned and prepared large amounts of plasmid DNA for *in utero* electroporation

**University Health Network, Cancer Genomics and Proteomics** **Toronto, ON, Canada**  
*Research Technician, PI: Dr. Nickolay Chirgadze* *Fall 2008, Summer 2009*

- optimized insect cell protein expression for fragment-based drug discovery
- cloned a variety of cancer stem cell protein targets to improve solubility
- small scale protein purification

## **logen Corporation, Fermentation R&D**

*Research Assistant, Senior Scientist: Dr. Jan-Maarten Geertman*

- modelled small scale bioreactor data using Excel Solver to improve upstream process
- processed samples using HPLC SOPs to determine the progress of fermentations
- conducted a small study on the nutritional requirements of different yeast species

**Ottawa, ON, Canada**

*January 2008–April 2008*

## **Outreach**

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### **Genspace, OpenPlant project**

*Community Lab Member*

- attend and contribute to meetings designed to move the project forward
- set up the initial Trello and Zotero accounts for coordinating the team
- built a plant incubator for liverworts and published the plans online

**Brooklyn, NY, USA**

*April 2018–present*

### **Analytics Lounge, Community Lab**

*Microscope Section Lead*

- staffed monthly open house sessions to engage the public
- developed and executed a microscope based booth activities for "hackerspace" events
- managed the chemical supplies and chemical safety

**Chicago, IL, USA**

*March 2017–September 2017*

### **Groks Science**

*Radio and Podcast Host*

- read non-fiction books from publicists, screening for interesting ideas
- acquired and conducted interviews with science authors
- edited interviews into 10 podcasts for the internet

[www.groks.net](http://www.groks.net)

*March 2016–January 2017*

### **Microbiology Twitter Journal Club**

*Attendee and Moderator*

- contributed to public discussions of open access microbiology journal papers to increase scientific engagement
- fostered discussions among members using a hashtag on Twitter

[microtwjc.wordpress.com](http://microtwjc.wordpress.com)

*April 2014–January 2016*

## **Teaching and Mentorship**

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### **University of Chicago, iGEM Team**

*Graduate Advisor*

- mentored 3 teams (1/year) to complete 3 separate projects
- exercised patience with troubleshooting tasks to create a comfortable learning atmosphere
- encouraged goal setting and critical thinking to perform rigorous and timely research
- jointly assisted in improving team assessment from bronze to silver

**Chicago, IL, USA**

*June 2014– September 2016*

### **University of Chicago, Freelance Work**

*Course Tutor, Molecular Basis of Bacterial Disease*

- designed test material to assess the progress of the student
- explained key concepts taking into account my knowledge of the course and the students perspective
- jointly achieved major improvements to course grades

**Chicago, IL, USA**

*January 2014–March 2014*

### **University of Chicago, Biological Sciences Division**

*Teaching Assistant*

- provided course support for two courses (Intro. to Virology, Molecular Basis of Bacterial Disease) of <30 students each
- led weekly discussions of scientific papers with an emphasis on conclusions' dependency on experimental techniques
- designed and graded exams; addressed concerns about grades
- prepared and delivered a total of 3 lectures

**Chicago, IL, USA**

*January 2013–June 2013*

### **University of Waterloo, Students Offering Support**

*Course Tutor*

- prepared sample exam test questions and review notes for a course (Intro. to Microbiology)
- led a review session with <20 people consisting of Q&A with a focus on key concepts

**Waterloo, ON, Canada**

*Fall 2008*

## Publications

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**Chan DW** and Wardenburg JB. Staphylococcal Smooth Biofilm Morphology on Organotypic Human Keratinocyte Culture is Dependent on *agrA*. *Manuscript in preparation*, 2018.

<https://mfr.osf.io/render?url=https://osf.io/ft7dw/?action=download%26mode=render>

Khamis I, **Chan DW**, Shirriff CS, Campbell JH, and Heikkila JJ. Expression and localization of the *Xenopus laevis* small heat shock protein, HSPB6 (HSP20), in A6 kidney epithelial cells. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology*, 201:12–21, November 2016.

Kwan K, Lam MS, Johnson M, Dube U, Shim S, Rašin MR, Sousa AM, Fertuzinhos S, Chen JG, Arellano J, **Chan DW**, Pletikos M, Vasung L, Rowitch D, Huang E, Schwartz M, Willemsen R, Oostra B, Rakic P, Heffer M, Kostović I, Judaš M, and Šestan N. Species-Dependent Posttranscriptional Regulation of NOS1 by FMRP in the Developing Cerebral Cortex. *Cell*, 149(4):899–911, May 2012.

## Posters

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**Staphylococcal Smooth Biofilm Morphology on Organotypic Human Keratinocyte Culture is Dependent on *agrA***

○ 23<sup>rd</sup> Annual Midwest Microbial Pathogenesis Conference

September 2016

**Interaction of *Staphylococcus aureus* with the *in vitro* human keratinized epithelium**

○ 13<sup>th</sup> Annual Chicago Biomedical Consortium Symposium, The Unseen Majority:  
*Microbes in Health and Disease*

October 2015

**Interaction of *S. aureus* USA300 with the human keratinized epithelium**

○ 6<sup>th</sup> Annual Northwestern University Skin Disease Research Center Retreat

June 2015

○ University of Chicago Biomedical Sciences Retreat

May 2015

**Interaction of *S. aureus* USA300 with the keratinized epithelium**

○ 16<sup>th</sup> International Symposium on Staphylococci and Staphylococcal Infections

August 2014

○ 21<sup>st</sup> Annual Midwest Microbial Pathogenesis Conference

September 2014

○ 5<sup>th</sup> Annual Northwestern University Skin Disease Research Center Retreat

June 2014

## Academic Service

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**University of Chicago, Biological Sciences Dept. Dean's Council**

**Chicago, IL, USA**

*Departmental Representative*

*September 2013–March 2016*

○ communicated constituents' concerns to a group of peers to make joint decisions

○ planned a recurrent graduate student social coffee hour

**PLOS ONE**

*Reviewer, Ad Hoc*

*May 2013*

## Awards

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**University of Waterloo Graduating Dean's Honours List**

2011

Recognition awarded for maintaining a cumulative average of >80% in an honours program

**WACE International Student Achievement Award**

2010

Recognition awarded by the World Association for Co-operative Education for obtaining an exceptional international work placement at Yale University

**NSERC Undergraduate Student Research Award**

2007

Funding awarded by the Natural Sciences and Engineering Research Council to pursue a research project in cellulosic ethanol R&D at Iogen Corporation

**Millennium Excellence Scholarship, Provincial Laureate**

2006–2010

Awarded for excellence in community involvement, leadership and academic achievement

**University of Waterloo President's Scholarship**

2006

Entrance scholarship awarded to individuals with an average of >90% graduating high school

## Computational Skills

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**Data analysis:** Microsoft Excel (base, macros, Solver), R (base, tidyverse, data.table, fitdistrplus, orddom, lme4, multcomp), SQL

**Data visualization/reporting:** Microsoft Powerpoint, R (grid, scales, ggplot2, knitr), LaTeX (beamer)

**Scripting/automation:** bash, GNU make, Python

**Version control:** git

**Graphics editing:** GIMP, Inkscape

**Document preparation:** LaTeX, Microsoft Word, Zotero

**Web publishing:** HTML/CSS, Django

## References and Documentation

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- References and documents pertaining to individual entries available on request