Ted Cybulski

Personal Information

Student, Medical Scientist Training Program
Northwestern University,
Feinberg School of Medicine
Chicago, IL

mobile: 248.961.0897
e-mail: cyb@northwestern.edu
www: http://tedc.cc

Summary

I am a data-focused scientist

Education

Northwestern University, Chicago, IL

Ph.D. Candidate, Neuroscience — **August 2012 - Current**

- Advisor: Konrad Körding
- Anticipated Year of Graduation: 2017

Medical Student, Feinberg School of Medicine — **June 2010 - Current**

- USMLE Step 1: 247, MCAT: 36Q
- Anticipated Year of Graduation: 2019

Massachusetts Institute of Technology, Cambridge, MA — **June 2010**

S.B., Biological Engineering

- Minors in Economics, Biology
- GPA: 4.7 / 5.0, Major GPA: 4.7 / 5.0

Cranbrook Kingswood Upper School, West Bloomfield, MI — **June 2006**

Refereed Publications

[1] Cybulski TR, Glaser JI, Marblestone AH, Zamft BM, Boyden ES, Church GM, Kording KP. "Spatial Information in Large-Scale Neural Recordings." *Frontiers in Computational Neuroscience*. 8(172). 2014. doi:10.3389/fncom.2014.00172

[2] Zhang W, Chen Y, Cybulski TR, Fabbri D, Gunter C, Lawlor P, Liebovitz D, Malin B. "Decide Now or Decide Later? Quantifying the Tradeoff between Prospective and Retrospective Access Decisions." *Proceedings of the 2014 ACM SIGSAC Conference on Computer & Communications Cecurity*. Paper presented at ACM SIGSAC Conference on Computer & Communications Security, Scottsdale, AZ, USA. 2014. doi:10.1145/2660267.2660341

[3] Marblestone AM, Zamft BM, Maguire YG, Shapiro MG, Cybulski TR, Glaser JI, Amodei D, Stranges PB, Kalhor R, Dalrymple DA, Seo D, Alon E, Maharbiz MM, Carmena JM, Rabaey JM, Boyden ES, Church GM, Kording KP. "Physical Principles for Scalable Neural Recording." *Frontiers in Computational Neuroscience*. 7(137). 2013. doi:10.3389/fncom.2013.00137

[4] Cybulski TR, Kording KP. Nucleotide-time Alignment for Molecular Ticker Tapes. *In preparation.*

Research Abstracts and Presentations

[5] Cybulski TR, Boyden ES, Church GM, Tyo KEJ, Kording KP. (October 2015) *Inference of neural signals from a proposed dual-polymerase error-encoded recording system*. Poster presented at SfN Annual Meeting, Chicago, IL.

[6] Cybulski TR, Kording KP. (June 2014). *Nucleotide-time Alignment for Molecular Ticker Tapes*. Poster presented at GRC Bioanalytical Sensors, Newport, RI.

[7] Cybulski TR, Glaser JI, Kording KP. (July 2013). *Spatial Information in Large-Scale Neural Recordings*. Poster presented at NU MSTP Retreat, Chicago, IL.

Other Presentations

[8] Cybulski TR. (November 2015). "PRISM: A Longitudinal Science and Medicine Mentoring Program." Talk presented at Learn, Serve, Lead: AAMC National Meeting 2015, Baltimore MD.

Research Experience

Northwestern University, Chicago, IL

Körding Laboratory, *PhD Student* **March 2011 - Current**

- Investigating algorithms to rectify asynchronous clocks for use in molecular recording of whole-brain neural activity
- Developing techniques to detect illegitimate access of electronic health records in conjunction with Northwestern Memorial Hospital
- Quantifying performance of next-generation neural imaging techniques using information theory

Harris Laboratory, *Rotation Student* **July 2011 - August 2011**

- Investigated predicted transcription factor binding activity at open chromatin sites using bioinformatic techniques

Morimoto Laboratory, *Rotation Student* **June 2010 - August 2010**

- Determined potential developmental targets of HSP1 in *C. elegans* using informatic and molecular biology methods

Massachusetts Institute of Technology, Cambridge, MA

Sharp Laboratory, *Research Assistant* **October 2008 - June 2010**

- Designed computational tools for analysis of a high-throughput miRNA extraction experiment.
- Investigated knockdown of genes by Ago2 as a function of motif content in target 3'UTRs.
- Investigated regulatory potential of cleaved tRNA and potential interactions with Ago2 using computational techniques.

Hammond Laboratory, *Research Assistant* **October 2007 - May 2008**

- Investigated performance of gene delivery *via* dendrimeric block copolymers using high-throughput flow cytometry

Poggio Laboratory, *Research Assistant* **October 2006 - May 2007**

- Designed and implemented a database of extensible, copyright-free algorithm-training video data

Michigan State University, East Lansing, MI

Shiu Laboratory, *Research Assistant* **May 2008 - August 2008**

- Investigated cold-responsive motifs in the *A. Thaliana* genome using ontological analyses

Mentoring & Teaching Experience

Northwestern University, Chicago, IL

Instructor, CPS Toyota Workshop **September 2015**

- Created neuroscience-based curriculum and experiments for one-day teaching workshop
- Lead didactic and small-group sessions with middle-school science teachers from Chicago Public Schools

Teaching Assistant, Histology **August 2012 - September 2015**

- Taught first- and second-year medical students, provided grading assistance for exams

Director, PRISM **April 2012 - June 2015**

(Promoting Inner-City Youth in Science and Medicine)

- Constructed medical- and science-centric curriculum for after-school program at the Chicago McCormick Boys and Girls Club
- Organized and ran bi-weekly mentoring sessions for 15 students and 10 mentors
- Provided mentorship for high school students

Mentor, Feinberg Connections **September 2011 - May 2014**

- Provided continuing career mentorship for two Northwestern University freshmen regarding medical studies

Service

Northwestern University, Chicago, IL

MSTP Admissions Comittee **August 2013 - May 2015**

- Reviewed applicant admissions materials, interviewed applicants
- Matched applicants to relevant faculty interviews

MSTP Student Council **November 2013 - May 2015**

Illinois Institute of Technology, Chicago, IL

Judge, FIRST Tech Challenge **February 2012**

Skills

Computer Programming:

- Python: Frequently use Biopython, PyMC, Keras, ScikitLearn packages
- Matlab: Frequently use GPU, parallel toolkits
- Mathematica

Bioinformatics:

- MEME/FIMO suite
- Emboss suite
- Have written custom analysis package for next-generation sequencing

Awards

Selected Poster, *GRC Bioanalytical Sensors, Newport, RI*	**2014**
Herbert H. and Barbara C. Dow Scholar, *MIT*	**2009**
National Merit Scholar	**2006**
AP Scholar with Distinction	**2006**
Alumni Science Award, *Cranbrook Kingswood Upper School*	**2006**
Prize Program Award, *Cranbrook Kingswood Upper School*	**2004, 2005, 2006**

Memberships

Society for Neuroscience, Member	**2015 - Current**
American Physician Scientist Association (APSA), Member	**2010 - Current**
Tau Beta Pi Engineering Honor Society, Member	**2010 - Current**

Activities

Assistant Music Director, DJ, *Chicago Independent Radio Project*	**2011 - Current**
Show Coordinator, Choreographer, *MIT Dance Troupe*	**2008 - 2010**
Captain, Choreographer, *MIT Ridonkulous*	**2007 - 2009**