Ryan M Harrison

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Education

Sept 2014 (Expected)	University of Oxford (Oxford, UK) **DPhil in Computational Biophysics** Thesis: Coarse-grained modelling of extreme DNA bending
Dec 2009	Johns Hopkins University (Baltimore, MD) Bachelor of Science in Biomedical Engineering; **Minor in Economics**. GPA: 3.26/4.00 Capstone: Econometrics study on alternate GDP measures.
Aug – Dec 2009	Danish Institute for Study Abroad (Copenhagen, Denmark) International Business Program.

Technical Experience

2010 – Present — Graduate Research Assistant at University of Oxford (Oxford, UK)

- Initiated and managed scientific **trans-atlantic collaboration**.
- Spearheaded software integration testing and automated documentation efforts.
- Resulted in a dramatic reduction in both scientific and build errors.

Summer 2013 — Game Animation Researcher at NaturalMotion (Oxford, UK)

- Improved character animation by applying themes from doctoral research.
- Communicated technical improvements through **non-technical live-demos**.
- Presented demos to areas as diverse as production, sales and analytics.

Jan – May 2010 — Software Bioengineer at Ginkgo BioWorks (Boston, MA)

- Developed software for grant milestone payments worth $\approx$ 6 months of operations.
- **Led** software integration effort for high-throughput DNA assembly pipeline.

Summer 2009 — Molecular Biologist at Ion Torrent Systems (Guilford, CT)

- Contributed to **team effort** to optimize a DNA sequencing prototype.
- Streamlined team workflow by building software to track system performance.
- Eased communication burden and encouraged collaboration through data sharing.

Summer 2008 — Polymer Chemist at National Institute for Materials Science (Tsukuba, Japan)

- Invented a total synthesize for a novel conducting polymer, resulting in a Japanese patent application and a highly-cited (40+) publication (DOI).

2003 – 2007 — Protein Structure Software Researcher at Johns Hopkins University (Baltimore, MD)

- Built a model of pH-sensitive regions within proteins.
- **Mentored** high school student with interest in protein structure prediction.

Non-technical Experience

2006-2009 — Executive Treasurer at JHU Engineers without Borders (Baltimore, MD)

- Created financial structure for engineering organization with \$100k/yr turnover.
- **Financial oversight** for teams operating in 3 developing countries.
- Drafted and presented annual report to Dean of Engineering for continued support.

Spring 2009	Legislative Aide at Maryland General Assembly (Annapolis, MD) • Shepherded 3 bills from conception to passage by coordinating with **diverse stakeholders** (e.g. constituents, doctors, hospitals, insurers) to amend legislation. • Supported state delegate through written testimony digests and oral briefings.
Fall 2007	Health Policy Analyst at Baltimore City Health Department (Baltimore, MD) • Liased across the department to compile and analyse data for the 2008 Baltimore City Health Status Report. • Wrote reports on drug decriminalization and teen-smoking abatement, including **reduction to practice** through a youth anti-smoking campaign.

Academic

Publications

In preparation	*Harrison RM*, Romano F, Ouldridge TE, Louis AA, Doye JP. Coarse-grain modelling of extreme DNA bending II: Cyclization.
In preparation	*Harrison RM*, Romano F, Ouldridge TE, Louis AA, Doye JP. Coarse-grain modelling of extreme DNA bending I: Molecular-vice.
2014	Doye JP, Ouldridge TE, Louis AA, Romano F, Šulc P, Matek C, Snodin BE, Rovigatti L, Schreck JS, *Harrison RM*, Smith WP. Coarse-graining DNA for simulations of DNA nanotechnology. Physical Chemistry Chemical Physics 2013;15(47):20395–20414.
2012	Kilambi KP, Gray JJ. Rapid Calculation of Protein pKa Values Using Rosetta. Biophysical Journal 2012 Aug;103(3):587–595. (Acknowledged for Software Contributions)
2010	Sugiyasu K, Honsho Y, *Harrison RM*, Sato A, Yasuda T, Seki S, Takeuchi M. A Self-Threading Polythiophene: Defect-Free Insulated Molecular Wires Endowed with Long Effective Conjugation Length. J. Am. Chem. Soc. 2010 Sep.

Recent Scientific Communication

30 Apr 2014	Theoretical Chemistry Group Graduate Student Meeting (London, UK)
10–12 Mar 2014	CECAM: Biological molecules under non-natural conditions (Stuttgart, DE)
17 Apr 2013	Softbio Day, Oxford Center for Soft and Biological Matter (Oxford, UK)
9–12 Oct 2012	National Institutes of Health Research Fesival (Bethesda, MD)

Extracurricular

Jan–Mar 2013	Oxford Student Consultancy Project • Team of 4 helped local non-profit identify root causes of membership decline.
2012–2013	Saïd Business School Building a Business Course
May/Sept 2012	Venture Capital and Biotech Conference Volunteer • Supported conference activities to gain exposure to biotech funding ecosystem.
Apr 2013	Facebook London Hackathon • Team of 3 developed distributed computing app in 24 hours. Honorable mention.

Awards

Scientific Communication

2012	oxTalent Infographic Award <10%
2011	NIH Graduate Research Award for Poster Presentation <10%

Fellowships & Prizes

2010	National Science Foundation Graduate Research Fellow <10%
2010	NIH-Oxford Scholar <10%
2006	Inductee, National Gallery for America's Young Inventors <1%
2005	5th Place, Intel Science Talent Search <1%

Hobby

Bow tie maker • Allotment gardener • Theater light tech