Ryan M Harrison

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Education

University of Oxford (Oxford, UK) — Expected Sept 2014
DPhil in Computational Biophysics
Thesis: Coarse-grained modelling of extreme DNA bending

- Managed trans-atlantic scientific collaboration between the US and UK.

Johns Hopkins University (Baltimore, MD) — Dec 2009
Bachelor of Science in Biomedical Engineering; **Minor in Economics**. GPA: 3.26/4.00
Capstone project: Econometrics on alternate GDP measures.

Danish Institute for Study Abroad (Copenhagen, Denmark) — Aug – Dec 2009
International Business Program.

- Cultural immersion through homestay and language training (15 hrs/wk).

Extracurricular

Demonstrated interest in the Business
Familiarity with corporate financial reporting (e.g. can read an SEC 10-Q/K)
Econometrics, corporate finance and strategy coursework.

- Oxford Student Consultancy Project — Jan–Mar 2013
- Saïd Business School Building a Business Course — 2012–2013
- Mid-Atlantic Biotech Conference (Volunteer) — Sept 2012
- Mid-Atlantic Venture Association Capital Connection (Volunteer) — May 2012

Facebook London Hackathon — Apr 2013

- Team of 3 developed distributed computing app in 24 hours. Honorable mention.

Executive Treasurer, JHU Engineers without Borders — 2006-2009

- 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.

Experience

Technical

NaturalMotion (Oxford, UK) — Summer 2013
Game Engine R&D

- Took the initiative to communicate highly technical improvements in procedural character animation through intuitive, non-technical live-demos.
- Presented work to areas as diverse as production, sales and analytics.

Ginkgo BioWorks (Boston, MA) — Jan – May 2010
Bioengineering Platform Engineering

- Exceeded milestone payment requirements worth ≈ 6 months of operations.
- **Led** software integration effort, resulting in the world's first high-throughput DNA assembly pipeline for prototyping engineered biological systems.

Ion Torrent Systems (Guilford, CT) — Summer 2009
Genomics Instrumentation Optimization

- Delivered on system optimization milestones for a next-gen sequencing prototype.
- Streamlined team workflow by building software to track system performance.
- Eased communication burden, encouraged collaboration through data sharing, avoided repeats, and helped the team design more effective experiments.

National Institute for Materials Science (Tsukuba, Japan) — 2008
Organic Polymer Chemistry

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

Johns Hopkins University (Baltimore, MD) 2003 – 2007
Proteomics Research Developer

- Built a novel model of pH-sensitive regions within proteins. 1 publication (DOI).
- **Mentored** high school student with interest in protein structure prediction.

Policy
Maryland General Assembly (Annapolis, MD) Spring 2009
Legislative Aide

- Shepherded 3 bills from conception to passage by coordinating with stakeholders to amend legislation, including the occasional assuaging of angry constituents.
- Succinctly communicated actionable concerns to state delegate through talking points, testimony digests, policy memos and briefings.

Baltimore City Health Department (Baltimore, MD) Fall 2007
Health Policy Intern

- 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

Harrison RM, Romano F, Ouldridge TE, Louis AA, Doye JP. Coarse-grain modelling of extreme DNA bending I: Molecular-vice. In preparation.

Harrison RM, Romano F, Ouldridge TE, Louis AA, Doye JP. Coarse-grain modelling of extreme DNA bending II: Cyclization. In preparation.

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.

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.

Software contributions

Kilambi KP, Gray JJ. Rapid Calculation of Protein pKa Values Using Rosetta. Biophysical Journal 2012 Aug;103(3):587–595.

Recent Scientific Communication

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

Honors

Scientific Communication

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

Fellowships & Prizes

- NIH-Oxford Scholar <10% 2010
- National Science Foundation Graduate Research Fellow <10% 2010
- Inductee, National Gallery for America's Young Inventors <1% 2006
- 5th Place, Intel Science Talent Search <1% 2005
  - Dubbed the 'junior nobel prize.' First from Baltimore City in 50 years.

Hobby

Bow tie maker • Allotment gardener • Theater light tech