

# Stefano Martiniani

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## Academic Positions

Assistant Professor	<b>New York University</b> Dept. of Physics, Center for Soft Matter Research Dept. of Chemistry, Simons Center for Computational Physical Chemistry Courant Institute of Mathematical Sciences	2022 – present
Assistant Professor	<b>University of Minnesota - Twin Cities</b> Dept. of Chemical Engineering and Materials Science	2019 – 2021

## Education

BSc Chemistry with First Class Honors	<b>Imperial College London</b>	2012
MPhil Scientific Computing with Distinction	<b>University of Cambridge</b>	2013
PhD Chemistry (Outstanding Thesis Award)	<b>University of Cambridge</b>	2017
Postdoctoral – Physics	<b>New York University</b>	2017 – 2019

## Academic summary

<b>Publications</b>	22 research articles (8 lead author, 13 corresp. author), 1 commentary, 1 peer-reviewed conference abstract.
<b>Media</b>	Research highlighted on <a href="#">PRL cover</a> , <a href="#">PCCP cover</a> , <a href="#">Nature</a> , <a href="#">Nature Materials</a> , <a href="#">Physics</a> , <a href="#">Physics Today (1)</a> , <a href="#">Physics Today (2)</a> , <a href="#">New Scientist</a> , <a href="#">Science &amp; Vie</a> , <a href="#">Sky News</a> , <a href="#">ANSA</a> .
<b>Presentations</b>	49 past talks (33 invited), 3 upcoming invited talks, 9 posters.
<b>Teaching Innovation</b>	Developed graduate course “Physics of Neural Systems” at NYU, and UMN’s first ML course outside the CS/Stats departments, CHEN 5802 “Machine Learning for Chemical Sciences and Engineering”.
<b>Funding</b>	NSF III <a href="#">2132995</a> (PI), NSF CESER <a href="#">2039575</a> (Co-PI), NIH R01 GM146372 (Co-I).
<b>Leadership</b>	Co-PI and Machine Learning Lead of <a href="#">ColabFit</a> project. Co-founder and member of organizing committee for <a href="#">KIMReview</a> journal.
<b>Mentorship</b>	Currently leading a group of 6 graduate students, 3 postdocs, 2 research staff, 2 undergraduates, 2 high-school students. <b>Past trainees:</b> 1 PhD student in ChEn, 1 master, 12 undergraduate (3 published), 2 high-school students (1 published), 3 Colabfit interns (2 published).

## Awards

<b>Simons Foundation Faculty Fellowship</b>	New York University	2022 – 2025
<b>Outstanding Thesis Prize</b>	Dept. of Chemistry, University of Cambridge	2017
<b>Gates Cambridge Scholarship</b>	University of Cambridge	2013 – 2017

Curriculum Vitae - Stefano Martiniani - Aug 2023

<b>Benefactors Scholarship</b>	St. John's College, University of Cambridge	2013 – 2017
<b>Prize for Best Physical Chemistry Research Project (BS/MS Thesis)</b>	Dept. of Chemistry, Imperial College London	2012
<b>Undergraduate Research Fellowship</b>	Dept. of Chemistry, Imperial College London	2012

## Funding

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- Role:** PI; **Title:** “EAGER: Quantifying the error landscape of deep neural networks”; **Program:** NSF III; **Funds:** \$149,225 ; **Duration:** 2 years (Oct 2021 - Sept 2023); **Award number:** 2132995.
- Role:** co-PI; **Title:** “Data CI Pilot: CI-Based Collaborative Development of Data-Driven Interatomic Potentials for Predictive Molecular Simulations”; **Program:** NSF CESER, DMR; **Funds:** \$1,127,993; **Duration:** 2 years (Oct 2020 - Sept 2022); **Award number:** 2039575.
- Role:** co-I; **Title:** “Engineering Protein Developability”; **Program:** NIH GM R01; **Funds:** \$1,815,456; **Duration:** 4 years (Oct 2022-2026); **Award number:** GM146372.

## Publications (\*trainee, †contributed equally)

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### Preprints

- S Anand\*, X Ma, S Guo, **S. Martiniani**, X. Cheng, "Bacteria Through Obstacles: Unifying Fluxes, Entropy Production, and Extractable Work in Living Active Matter", arXiv preprint arXiv:2308.08421 (2023)
- J. A. Vita\*, E. G. Fuemmeler\*, A. Gupta\*, G.P. Wolfe\*, A. Q. Tao\*, R. S. Elliott, **S. Martiniani**, E. B. Tadmor, “ColabFit Exchange: open-access datasets for data-driven interatomic potentials”, arXiv preprint arXiv:2306.11071 (2023)
- S. Rawat\*, **S. Martiniani**, “Explicit rational function solutions for the power spectral density of stochastic linear time-invariant systems”, *arXiv preprint* submit/4927391 (2023)
- A. Shih\*, M. Casiulis\*, **S. Martiniani**, “Fast Generation of Spectrally-Shaped Disorder”, *arXiv preprint* arXiv:2305.15693 (2023)
- A. W. Golinski\*, Z. D. Schmitz\*, G. H. Nielsen, B. Johnson\*, D. Saha\*, S. Appiah\*, B. J. Hackel, **S. Martiniani**, “Predicting and Interpreting Protein Developability via Transfer of Convolutional Sequence Representation”, *bioRxiv preprint* 2022.11.21.517400 (2022) — accepted in ACS Synth. Biol.

### Peer-reviewed articles

- M. Casiulis\*, **S. Martiniani**, “When you can’t count sample! Computable entropies beyond equilibrium from basin volumes”, *Papers in Physics*, 15, 150001 (2023).  
- Invited perspective in “Focus Series on Challenges in Granular Matter”, Editors: K. Daniels, L. Pugnaloni, J. Zhao.
- C. Anzivino, M. Casiulis\*, T. Zhang\*, A. S. Moussa, **S. Martiniani**, A. Zaccone, “Estimating random close packing in polydisperse and bidisperse hard spheres via an equilibrium model of crowding”, *J. Chem. Phys.*, 158, 044901 (2023)

15. S. Ro, B. Guo, A. Shih\*, T.V. Phan, R.H. Austin, D. Levine, P.M. Chaikin, **S. Martiniani**, “Model-Free Measurement of Local Entropy Production and Extractable Work in Active Matter”, *Phys. Rev. Lett.* 129, 220601 (2022).  
 - Cover article for *Phys. Rev. Lett.*  
 - Highlighted as **Editor’s Suggestion** in *Phys. Rev. Lett.*  
 - Highlighted in “Measuring Entropy in Active-Matter Systems”, *Physics* 15, 179 (2022)
14. A. W. Golinski\*, K. M. Mischler, S. Laxminarayan, N. Neurock, M. Fossing, H. Pichman, **S. Martiniani**, B. J. Hackel, “High-Throughput Developability Assays Enable Library-Scale Identification of Producing Protein Scaffold Variants”, *Proc. Natl. Acad. Sci.*, 118, 23 (2021)
13. A. Cavagna, P. M. Chaikin, D. Levine, **S. Martiniani**, A. Puglisi, M. Viale, “Vicsek Model by Time-Interlaced Compression: a Dynamical Computable Information Density”, *Phys. Rev. E* 103, 062141 (2021)
12. **S. Martiniani**, Y. Lemberg, P. M. Chaikin, D. Levine, “Correlation lengths in the language of computable information”, *Phys. Rev. Lett.*, 125, 170601 (2020)
11. **S. Martiniani**, P. M. Chaikin, D. Levine, “Quantifying hidden order out of equilibrium”, *Phys. Rev. X*, 9, 011031 (2019)  
 - Highlighted in “File compression uncovers hidden order”, *Physics Today* (2019).
10. **S. Martiniani**, K. J. Schrenk, K. Ramola, B. Chakraborty, D. Frenkel, “Numerical test of the Edwards conjecture shows that all packings become equally probable at jamming”, *Nature Physics*, 13, 848–851 (2017)  
 - Highlighted in “Intuition harnessed in the name of particle packing”, *Nature*, 546, 575 (2017).  
 - Highlighted in “A thermodynamic theory of granular materials endures”, *Physics Today* 70, 9 (2017).  
 - Highlighted in “Material Witness: A jammy guess?”, *Nature Materials*, 15, 1227 (2016).
9. D. Frenkel, K. J. Schrenk, **S. Martiniani** “Monte Carlo sampling for stochastic weight functions”, *Proc. Natl. Acad. Sci.*, 114, 27 (2017)
8. A. J. Ballard, R. Das, **S. Martiniani**, D. Mehta, L. Sagun, J. D. Stevenson, D. J. Wales, “Energy Landscapes for Machine Learning”, *Phys. Chem. Chem. Phys.*, 19, 12585 (2017)  
 - Cover article for *Phys. Chem. Chem. Phys.*
7. **S. Martiniani**, K. J. Schrenk, J. D. Stevenson, D. J. Wales, D. Frenkel, “Structural analysis of high dimensional basins of attraction”, *Phys. Rev. E* 94, 031301 (2016)
6. **S. Martiniani**, K. J. Schrenk, J. D. Stevenson, D. J. Wales, D. Frenkel, “Turning intractable counting into sampling: computing the configurational entropy of three-dimensional jammed packings”, *Phys. Rev. E* 93, 012906 (2016)
5. A. J. Ballard, **S. Martiniani**, J. D. Stevenson, S. Somani, D. J. Wales, “Exploiting the potential energy landscape to sample free energy”, *WIREs Comput. Mol. Sci.* 5, 273 (2015)
4. **S. Martiniani**, J. D. Stevenson, D. J. Wales, D. Frenkel, “Superposition Enhanced Nested Sampling”, *Phys. Rev. X* 4, 031034 (2014)

3. C. Magistris†, **S. Martiniani**†, N. Barbero, J. Park, C. Benzi, A. Anderson, C. H. Law, C. Barolo, B. C. O'Regan, "Near-infrared absorbing squaraine dye with extended  $\pi$  conjugation for dye-sensitized solar cells", *Renewable Energy* 60, 672 (2013)
2. C. E. Richards, A. Y. Anderson, **S. Martiniani**, C. Law, B. C. O'Regan, "The Mechanism of Iodine Reduction by TiO<sub>2</sub> Electrons and the Kinetics of Recombination in Dye-Sensitized Solar Cells", *J. Phys. Chem. Lett.* **3**, 1980 (2012)
1. **S. Martiniani**, A. Y. Anderson, C. Law, B. C. O'Regan and C. Barolo, "New insight into the regeneration kinetics of dye sensitised solar cells", *Chem. Commun.* 48, 2406 (2012)

### Peer-reviewed conference abstracts

1. R. Rawat\*, D. Heeger, **S. Martiniani**, "Coherence influences the dimensionality of communication subspaces". Cosyne Abstracts (2023).

### Commentaries

1. **S. Martiniani**, "Bit-propelled Active Matter". Journal Club for Condensed Matter Physics (2023).

### Ph.D. thesis

**S. Martiniani**, "On the complexity of energy landscapes: algorithms and a direct test of the Edwards conjecture", *University of Cambridge* (2017)

- Awarded "Outstanding Thesis Prize", Dept. of Chemistry, University of Cambridge

### Conference presentations and seminars

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#### Talks (\*invited)

##### Upcoming

1. \* Center for Computational Neuroscience, Flatiron Institute, Nov 2023
2. \* Society for Neuroscience, Minisymposium on "Suppression and Variability in Visual Cortex", Nov 2023
3. \* Condensed Matter Seminar, Dept. of Physics, UMass Amherst, Dec 2023

##### Past

1. \*Machine Learning Potentials - StAtus and FuturE (MLP-SAFE), Virtual Workshop, Jul 2023  
Title: "ColabFit: An Integrated Platform for Designing, Training, Sharing, and Deploying Machine Learning Interatomic Potentials at Scale."
2. \* Conclave on Complexity in Physical Interacting Systems, Computation, and Thermodynamics, Los Alamos National Laboratory, Santa Fe (NM), Jul 2023  
Title: "*Play. Pause. Rewind. Linking local entropy production, fluxes, and extractable work in active matter.*"
3. Energy Landscapes Workshop (Long talk, 1h), Porquerolles (France), Jun 2023  
Title: "*From Slices to Volumes: Unveiling the Geometry of High-Dimensional Energy Landscapes.*"
4. \* Complex Systems Seminar, Dept. of Physics, Northwestern University, May 2023  
Title: "*Cortical circuit theory of interareal communication*"

5. \* Symposium: Systems for Fitting, Uncertainty Quantification, Selection and Use of Interatomic Models, Mach Conference, April 2023  
Title: *“Colabfit: An integrated Platform for Designing, Training, Sharing, and Deploying Machine Learning Interatomic Potentials at Scale”*
6. \* Webinar, Scientific Machine Learning Webinar Series, CMU Arpa-E, March 2023  
Title: *“Colabfit: An integrated Platform for Designing, Training, Sharing, and Deploying Machine Learning Interatomic Potentials at Scale”*
7. \* Levich Institute Seminar, CUNY, March 2023  
Title: *“The other side of entropy”*
8. \* Invited talk, Focus session: “Information theory and Physics”, APS March meeting 2023  
Title: *“The other side of entropy”*
9. \* Invited tutorial, Short Course “Computational modeling and information theory: from grains to bits”, APS March meeting 2023  
Title: *“The other side of entropy”*
10. \* Computations in Science Seminar, Dept. of Physics, University of Chicago, Jan 2023  
Title: *“The other side of entropy”*
11. \* 123rd Statistical Mechanics Conference, Rutgers University, Dec 2022  
Title: *“Play. Pause. Rewind. Model Free Measurement of Local Entropy Production and Extractable Work in Active Matter.”*
12. \* Colloquium, Center for Computational Mathematics, Flatiron Institute, Dec 2022  
Title: *“The other side of entropy”*
13. \* Research Seminar, Santa Fe Institute, Nov 2022  
Title: *“The other side of entropy”*
14. \* Research Seminar, Center for Nonlinear Studies, Los Alamos National Laboratory, Nov 2022  
Title: *“Play. Pause. Rewind. Model Free Measurement of Local Entropy Production and Extractable Work in Active Matter.”*
15. \* Research Seminar (remote), Dept. of Chemistry, UT Austin, Host: Devarajan Thirumalai, Oct 2022  
Title: *“The other side of entropy”*
16. Frontiers in Computational Chemistry: The NYU Simons Center Inaugural Symposium, Oct 2022  
Title: *“Play. Pause. Rewind. Model Free Measurement of Local Entropy Production and Extractable Work in Active Matter.”*
17. \* Theoretical Chemistry Seminar, Dept. of Chemistry, University of Cambridge, Aug 2022  
Title: *“The Other Side of Entropy”*
18. Physics of Information workshop, Dept. of Physics, New York University, May 2022  
Title: *“The Other Side of Entropy”*
19. \* Research Seminar (remote), Condensed Matter Theory group, Dept. of Physics, University of Oxford, Host: Shivaji Sondhi, Apr 2022  
Title: *“The other Side of entropy”*
20. APS March meeting, Session D20: Active Matter in Complex Environments II, Chicago, Mar 2022  
Title: *“Play. Pause. Rewind. Measuring local entropy production and extractable work in active matter”*

21. AIChE Annual Meeting, Session: Active Colloidal Systems, Boston, Nov 2021  
Title: *“Play. Pause. Rewind. Measuring local entropy production and extractable work in active matter”*
22. APS March Meeting (remote), Session Y06: Memory Formation in Matter: Encoding, Reading, and Design II, Mar 2021  
Title: *“Squeezing order out of disorder”*
23. \* Research Seminar, Dept. of Chemistry, New York University, Mar 2021  
Title: *“The other side of entropy”*
24. \* Machine Learning Seminar, University of Minnesota - Twin Cities, Dec 2020  
Title: *“Design and Discovery in the Protein Fitness Landscape”*
25. Applied Physics “Socioloquium” (remote), SEAS, Harvard University, Main speaker: P.M. Chaikin, Contributors: **S. Martiniani**, D. Frenkel, Host: Eric Mazur, Jun 2020  
Title: *“Information and Order”*
26. \* Seminar, Chemical Theory Center, Dept. of Chemistry, University of Minnesota - Twin Cities, May 2020  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture.”*
27. \* APS March Meeting, Denver (CO), Session J31: Workshop: Grand Challenges in Soft Matter and Opportunities for Microgravity Research, Mar 2020 (meeting cancelled for COVID-19 crisis)  
Title: *“Squeezing order out of disorder”*
28. \* Geomechanics Seminar, Dept. of Civil, Environmental and Geo- Engineering, University of Minnesota - Twin Cities, Feb 2020  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*
29. \* Condensed Matter Seminar, Dept. of Physics, University of Minnesota - Twin Cities, Dec 2019  
Title: *“Squeezing order out of disorder”*
30. \* Solid Mechanics Research Seminar, Dept. of Aerospace Engineering and Mechanics, University of Minnesota - Twin Cities, Nov 2019  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*
31. 17th Annual Northeastern Granular Materials Workshop, New York University, Jun 2018  
Title: *“Taking the numerical calculations of granular entropy forward”*
32. APS March Meeting, Boston, Mar 2019  
Title: *“Characterizing elusive correlation lengths by computable information density”*
33. \* Research Seminar, Centre for Theoretical Biological Physics, Rice University, Feb 2019  
Title: *“Quantifying hidden order out of equilibrium”*
34. \* Research Seminar, Dept. of Chemical Engineering and Material Science, University of Minnesota - Twin Cities, Feb 2019  
Title: *“Quantifying hidden order out of equilibrium”*
35. \* Research Seminar, Dept. of Chemistry, University of Illinois Urbana-Champaign, Jan 2019  
Title: *“Quantifying hidden order out of equilibrium”*
36. \* Research Seminar, Santa Fe Institute, Jan 2019  
Title: *“Quantifying hidden order out of equilibrium”*

37. \* Research Seminar, Dept. of Chemistry, University of Colorado Boulder, Dec 2018  
Title: *“Quantifying hidden order out of equilibrium”*
38. MRSEC Seminar, New York University, Oct 2018  
Title: *“Quantifying hidden order out of equilibrium”*
39. 16th Annual Northeastern Granular Materials Workshop, Yale University, Jun 2018  
Title: *“Quantifying hidden order out of equilibrium”*
40. \* DAMPT Statistical Physics and Soft Matter Seminar, University of Cambridge, May 2018  
Title: *“Quantifying hidden order out of equilibrium”*
41. \* Mach Conference, Annapolis (MD), Apr 2018  
Title: *“Taking the numerical calculation of granular entropy forward: a new look at the yielding transition”* - **session keynote**
42. \* Army Research Lab (ARL), Aberdeen Proving Ground (MD), Apr 2018  
Title: *“Quantifying hidden order out of equilibrium”*
43. APS March Meeting, Los Angeles (CA), Mar 2018  
Title: *“Quantifying hidden order out of equilibrium”*
44. Edwards Centre for Soft Matter Inaugural Meeting, University of Cambridge, Jan 2017  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*
45. Recent Advances on the Glass and Jamming Transition, CECAM Workshop, Lausanne, Switzerland, Jan 2017 - **poster prize talk**  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*
46. \* 3rd International Conference on Packing Problems, Shanghai, China, Sept 2016  
Title: *“Turning intractable counting into sampling: Computing the configurational entropy of three-dimensional jammed packings”*
47. StatPhys 26, Lyon, France, Jul 2016  
Title: *“Turning intractable counting into sampling: Computing the configurational entropy of three-dimensional jammed packings”*
48. \* Institute for Multiscale Simulations, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, Aug 2015  
Title: *Turning intractable counting into sampling: the mean basin volume method”*
49. Gordon Conference on Granular and Granular-Fluid Flow, Stonehill College, Easton (MA), Jul 2014  
Title: *“Numerical Calculation of Granular Entropy”*

## Posters

1. GRC Neurobiology of Cognition: Neural Circuits Supporting Cognitive Function, Newry (ME), Jul 2022  
Title: *“Towards a unifying and analytically tractable framework for neural dynamics”*
2. IEEE European School of Information Theory, Bertinoro, Italy, May 2018  
Title: *“Quantifying hidden order out of equilibrium”*
3. Recent Advances on the Glass and Jamming Transition, CECAM Workshop, Lausanne, Switzerland, Jan 2017  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*

4. Soft Matter – Theoretical and Industrial Challenges, University of Cambridge, UK, Sept 2016  
Title: *“Are some packings more equal than others? A direct test of the Edwards conjecture”*
5. International Workshop on Jamming and Granular Matter, Queen Mary University of London, UK, Jul 2016  
Title: *“Turning intractable counting into sampling: Computing the configurational entropy of three-dimensional jammed packings”*
6. Machine Learning Summer School, Kyoto, Japan, Aug 2015  
Title: *“Computing extremely high-dimensional volumes”*
7. Italian Soft Days, Università la Sapienza, Rome, Italy, Sept 2014  
Title: *“Numerical Calculation of Granular Entropy”*
8. Advanced School in Soft Condensed Matter ‘Solutions in the Spring’, Homerton College, Cambridge, UK, Apr 2014  
Title: *“Superposition Enhanced Nested Sampling”*
9. International Soft Matter Conference, Università la Sapienza, Rome, Italy, Sept 2013  
Title: *“Superposition Enhanced Nested Sampling”*

## Organized workshops and conference sessions

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1. Working group: “Theory and circuits of cortical function and corticocortical communication”, Aspen Center for Physics, Jul 2023.
2. Workshop: *“Physics of Information”*, Dept. of Physics, New York University, May 2022
3. Focus Session: *“Machine Learning for Biomolecular Design and Simulation”*, APS March Meeting 2021

## Extended stays

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1. Aspen Center for Physics, “Theory and circuits of cortical function and corticocortical communication”, Jul 2023
2. Aspen Center for Physics, “Learning Dynamical Models from Biophysical Data”, Jun 2022

## Teaching

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<b>2019-present</b>	<b>PHYS-GA 2061</b> “Physics of Neural Systems” (Spring 2023)
	<b>CHEM-UA 652</b> “Thermodynamics & Kinetics” (Fall 2022)
	<b>CHEN 3201</b> “Numerical Methods for Chemical Engineering” (Spring 2020, co-instructor; Spring 2021, Fall 2021 lead instructor)
	<b>CHEN 8754</b> “Quantitative Analysis, Design and Synthesis of Biotechnological Systems.” Delivered 2.5h of content on “Information theory for biochemical signal pathways” (Spring 2021, contributing lecturer)
	<b>CHEN 5595</b> “Data Driven Discovery for the Chemical Sciences” (Fall 2020)
	<b>MATS 3001</b> “Thermodynamics of Materials” (Fall 2019, co-instructor)
	<b>Workshop</b> on Machine Learning for Chemical Engineering and Materials Science ( ~ 40 participants, year-long).



<b>2013 - 2015</b>	<b>Mathematics tutor</b> for natural sciences and computer science students in the Tripos IA (first year) at Magdalene College, Cambridge. Tutorials consisted of year-long 1 hour weekly meetings with 3 or 4 groups of 2 students each.
<b>2013</b>	<b>Laboratory demonstrator</b> for Tripos IA (first year) organic chemistry practicals (University of Cambridge).

## Mentorship (\*current trainee)

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### 2019-present

<b>Postdoc</b>	*Mathias Casiulis, *Guanming Zhang, *Amit Gupta
<b>PhD</b>	<b>Physics:</b> *Praharsh Suryadevara. <b>Chemistry:</b> *Asit Pal. <b>Mathematics:</b> *Aaron Shih, *Shivang Rawat, *Satyam Anand. <b>Chemical Engineering:</b> Alexander Golinski (co-advised, NSF GRFP), *Zach Schmidt (co-advised).
<b>Research staff</b>	*Gregory Wolfe, *Eric Fuemeler.
<b>Master</b>	<b>Mathematics:</b> Zayyam Mohammed.
<b>Undergraduate</b>	<b>Physics:</b> Bryce Johnson. <b>Mathematics:</b> Kyrie Xie, Carmel Pe'er, *Orion Runjia Yang, *Charlie Chen. <b>Chemical Engineering:</b> Diya Saha, Sandya Appiah, Daniel Ribeiro, Jiwon Kim (Honors Thesis), Remi Bougie (Honors Thesis). <b>Materials Science:</b> Vijay Vallurupalli. <b>Statistics:</b> Kovic Odhiambo.
<b>High-school</b>	Tom Zhang (Westport, CT), Juhee Park (Fort Lee High School, NJ), *Gabriel Magnasco-Farinas (HSAS-Lehman, NY), *Milan Lustig (Cold Spring Harbor High School, NY).

### 2014-2019

<b>U. Cambridge</b>	<b>Day-to-day supervisor</b> for 2 Physics Part III final year project (one awarded Part III prize for best computational physics project); 1 exchange master student (awarded distinction from TU-Munich).
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## Service

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<b>Peer-review</b>	PRL, PRX, PRE, PNAS, Nat. Neuroscience, J. Chem. Phys., J. Stat. Phys, J. Comp. Phys.	
<b>Review panels</b>	NSF Molecular Foundations for Biotechnology	2022
<b>Other</b>	Gates Cambridge Junior Treasurer, University of Cambridge Responsible for planning and managing a £60k budget.	2016 – 2017

## Synergistic activities

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<b>Outreach</b>	<ol style="list-style-type: none"><li>1. <a href="#">NYU Proud to Be First Advocate</a> and Proud to Be First Mentor;</li><li>2. Host for high-school students seeking research experience (Summer 22, 23);</li><li>3. Jury member for “Science Court”, an interdisciplinary course in the University of Minnesota Honors Program designed to combat polarization in American society and strengthen democracy (Fall 2020);</li><li>4. Primary School PS-154 STEM Professionals Day, Brooklyn, NY (2019).</li></ol>
<b>Open Science</b>	Co-PI and Machine Learning lead of <a href="#">Colabfit project</a> . Advancing software infrastructure for Findable, Accessible, Interoperable and Reusable (FAIR) implementations of machine learning potentials, and for archiving, discovering, and accessing datasets.
<b>Dissemination</b>	<ol style="list-style-type: none"><li>1. My research has been broadly highlighted by scientific and news media worldwide, including in <a href="#">Nature</a>, <a href="#">Nature Materials</a>, <a href="#">Physics</a>, <a href="#">Physics Today (1)</a>, <a href="#">Physics Today (2)</a>, <a href="#">New Scientist</a>, <a href="#">Science &amp; Vie</a>, <a href="#">Sky News</a>, <a href="#">ANSA</a>.</li><li>2. Co-founder and member of organizing committee of <a href="#">KIMReview</a>, a journal publishing commentaries on important articles related to classical molecular simulations of hard and soft matter materials (first issue Jul 2023).</li><li>3. Submitted <a href="#">video entry</a> to APS-DSOFT Gallery 2022.</li></ol>

## Other professional experience

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<b>Cadet (active duty)</b>	Italian Army, “Scuola Military Teulié”, Milan	2005 – 2008
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