

Carter J. Wilson

Computational Biomolecular Dynamics Research Group (CBDRG), MPI-NAT
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Personal

Education

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|---|----------------------------------|-------------|
| Ph.D., IMPRS-PBCS (i.e., Biophysics) | University of Göttingen, Germany | 2023 – |
| M.Sc., Applied Mathematics | Western University, Canada | 2021 – 2023 |
| Thesis: <i>A Highly Charged Topic: Intrinsically Disordered Proteins and Protein pK_a Values</i> | | |
| B.MSc., Computational Biochemistry; and B.Sc., Applied Mathematics (distinction) | Western University, Canada | 2016 – 2021 |
| Thesis: <i>KEAP1 Cancer Mutants: A Large-Scale Molecular Dynamics Study of Protein Stability</i> | | |

Experience

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| Ph.D. student researcher | CBDRG (at MPI-NAT) | 2023 – |
| Visting M.Sc. student | CBDRG | 2022 – 2023 |
| Graduate research assistant | SoftSimu group (at Western University) | 2021 – 2023 |
| COVID-19 transition intern | Biostatistics Department (at UWO) | 2020 – 2021 |
| Undergraduate research assistant | Choy Lab (at Western University) | 2019 – 2021 |
| Lifeguard and swim instructor | Private | 2014 – 2018 |

Awards and funding

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|---------------------------------------|-----------------------|-------------|
| Western Graduate Research Scholarship | UWO | 2021 – 2023 |
| Michael Smith Foreign Study Award | NSERC | 2022 |
| Betty Spencer Scholarship | UWO | 2022 |
| Ontario Graduate Scholarship | Government of Ontario | 2022 |
| Canadian Graduate Scholarship | NSERC | 2021 |
| Western Gold Medal | UWO | 2021 |
| Western Scholar | UWO | 2021 |
| Western Scholarship of Excellence | UWO | 2016 |

Students supervised

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|-------------------|-------------------|-------------|
| Megan Ratcliffe | Mitacs Internship | 2022 |
| Chery Ma | B.Sc. thesis | 2021 – 2022 |
| Sakshi Alegaonkar | Mitacs Internship | 2021 |
| Janvi Shah | Volunteer | 2021 |
| Lisa Hong | B.Sc. thesis | 2020 – 2021 |

Courses supervised

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|------------|--------------------|------|
| MATH 1225B | Calculus Methods | 2023 |
| MATH 1228B | Finite Mathematics | 2023 |
| MATH 1229B | Matrix Algebra | 2023 |
| NMM 1414B | Calculus II | 2022 |
| NMM 1412A | Calculus I | 2021 |
| PHYS 3926F | Computer Physics | 2021 |

Publications

- WILSON, C. J., DE GROOT, B. L., AND GAPSYS, V. Resolving coupled pH titrations using alchemical free-energy calculations. *Submitted* (2023)
- WILSON, C. J., DE GROOT, B. L., KARTTUNEN, M., AND GAPSYS, V. Accurately predicting protein pKa values using non-equilibrium alchemy. *Accepted in J. Chem. Theory. Comput.* (2023)
- WILSON, C. J., CHOY, W.-Y., AND KARTTUNEN, M. AlphaFold2: A role for disordered protein/region prediction? *Int. J. Mol. Sci.* 23, 9 (2022), 4591
- *SALEM, A., *WILSON, C. J., RUTLEDGE, B. S., DILLIOTT, A., FARHAN, S., CHOY, W.-Y., AND DUEN-
NWALD, M. L. Matrin3: Disorder and ALS pathogenesis. *Front. Mol. Biosci.* 8 (2022)
- WILSON, C. J., CHANG, M., KARTTUNEN, M., AND CHOY, W.-Y. KEAP1 cancer mutants: A large-scale molecular dynamics study of protein stability. *Int. J. Mol. Sci.* 22, 10 (2021), 5408
- *CHANG, M., *WILSON, C. J., KARUNATILLEKE, N. C., MOSELHY, M. H., KARTTUNEN, M., AND CHOY, W.-Y. Exploring the conformational landscape of the Neh4 and Neh5 domains of Nrf2 using two different force fields and circular dichroism. *J. Chem. Theory. Comput.* 17, 5 (2021), 3145–3156

Reviewer

Journal of Molecular Modeling

2022

References

Prof. Bert L. de Groot, Ph.D.

Ph.D. supervisor (2023 –)

bgroot@gwdg.de

Prof. Mikko Karttunen, Ph.D.

M.Sc. supervisor (2021 – 2023)

mkarttu@uwo.ca

Prof. James (Wing-Yiu) Choy, Ph.D.

B.Sc./M.Sc. supervisor (2019 – 2023)

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