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Structural biochemistry of the pentraxins

Noone, D.P.

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geplaatst met de bredere literatuur, als aanvulling op de discussiesecties van elk hoofdstuk (**hoofdstuk 9: Algemene discussies**).

Curriculum Vitae

Dylan Paul Noone was born on the 6th of June 1994 in London, UK, where he completed both primary and secondary education. Later he studied biochemistry with a year in industry at the University of Bristol. He began studies in September 2013, spending a year doing a research project with a small biotech firm Oxitec™ (2015-2016) developing novel methods to sterilise various species of *Drosophila* for the purpose of agricultural pest control. He later completed a research project in the lab of Ian Collinson at the University of Bristol (2016-2017), where he helped develop a real-time luminescence assay to monitor protein transport. He went on to complete a year-long project as a research assistant helping two post-doctoral researchers study mitochondrial protein import via structural and biochemical methods (2017-2018) in the lab of Ian Collinson. Dylan then decided to do a PhD, joining the nascent group of Thom Sharp at the LUMC in the Netherlands (2018-2023). During his time at the LUMC Dylan honed his biochemical skills developed during his time in the UK, and gained proficiency in cryo-electron microscopy (cryoEM). Starting a project from scratch Dylan managed to complete several projects using both single particle analysis and cryo-tomography, giving him a well-rounded knowledge of cryoEM and resulting in several publications. During his PhD Dylan had the opportunity to present at the Dutch Biophysics conference in Eindhoven and attend several more throughout the Netherlands. In August 2023 Dylan went on to continue his academic career in the lab of Doryen Bubeck at Imperial College London interrogating internalised membrane attack complexes via correlated cryoEM and fluorescence microscopy.

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I would firstly like to thank my wife Alejandra who put up with quite a lot of stressed moments and late working days and nights. She really allowed me to get my job done and I think with a different partner I would have achieved far less during my PhD. Next, I would like to thank my family (Shannon, Mum and Dad), especially my parents; they supported me at every step of my journey to this point. Even things that at the time I thought were unfair or unkind I realise now were ways in which they were trying to make me a better person.

I would also like to thank Thom. He was a very enthusiastic and involved boss, always coming up with new ideas and always having a positive attitude towards hard problems, which I think is invaluable in science. He also allowed us to work in a very flexible manner, allowing us to work from home and take time off as we saw fit, which really helped me in my relationships outside of the lab. Moreover, my lab mates and friends Willem, Leoni, Sebastian, Gabriella, Mart and Göktuğ-Pasha-Aba, really helped me a lot. Everyone had their speciality and different way of looking at things, given the varied backgrounds of everyone. This really helped me raise my game by imitating you guys. Also, many of you became lifelong friends so

I am sure this won't be the end. To everyone else I made friends with at the LUMC like Alessandro, Margherita, David, Daniel, Martha, Fredrick, Nicolette, Nanda, Rishov and more, thanks for making my time here so great!

Also I would like to thank the Trouw group, especially Douwe. The collaboration was very fruitful and I wish you guys success going forward. I would also like to thank the LUMC and CCB more generally as the environment was really nice. People were extremely helpful, especially the EM section, and it was nice hearing about everyone else's research. Also, a big thank you to the Netherlands, the cycling infrastructure is second to none and I think the fact you pay a decent wage for a decent job is commendable. In my opinion the salary is the single largest factor that enabled me to collect all the data I did and write them up into this thesis and publications. In science it is often forgotten that this is a job and the money and conditions matter; we are humans that need to eat and are sensitive to stress. If I had done my PhD elsewhere, working a second job and not quite knowing how the month was going to financially turn out, I would have produced less than half of what I did. This is the biggest single factor that I think enabled me to do my job to the best of my ability without outside distractions and allowed me to maintain healthy social relationships with those around me.

List of publications

1. **Dylan P. Noone**, Marjolein Isendoorn, Mariska E. Keizer, Jip Wulfele, Tijn T. van der Velden, Douwe J. Dijkstra, Leendert A. Trouw, Dmitri V. Filippov, Thomas H. Sharp. Structural basis for surface activation of the classical complement cascade by the short pentraxin C-reactive protein. In preparation as a manuscript. 2024.
2. **Dylan P. Noone**, Douwe J. Dijkstra, Teun T. van der Klugt, Peter A. van Veelen, Arnoud H. de Ru, Paul J. Hensbergen, Leendert A. Trouw, and Thomas H. Sharp. PTX3 structure determination using a hybrid cryoelectron microscopy and AlphaFold approach offers insights into ligand binding and complement activation. PNAS. 2022. 119 (33) e2208144119. <https://doi.org/10.1073/pnas.2208144119>
3. **Dylan P Noone**, Tijn T van der Velden , Thomas H Sharp. Cryo-electron microscopy and biochemical analysis offer insights into the effects of Acidic pH, such as occur during acidosis, on the complement binding properties of C-reactive protein. Frontier in Immunology. 2021. 16;12:757633. doi: 10.3389/fimmu.2021.757633.
4. Gonçalo C Pereira, William J Allen , Daniel W Watkins, Lisa Buddrus, **Dylan Noone**, Xia Liu, Andrew P Richardson, Agnieszka Chacinska, Ian Collinson. A High-Resolution Luminescent Assay for Rapid and Continuous Monitoring of Protein Translocation across Biological Membranes. Journal Molecular Biology. 2019. 431 (8). <https://doi.org/10.1016/j.jmb.2019.03.007>.