Professor James Whisstock

NHRMC Senior Principal Research Fellow

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Monash Biomedicine Discovery Institute
Infection and Immunity Program

OTHER PROGRAM AFFILIATIONS

Cancer

Neuroscience

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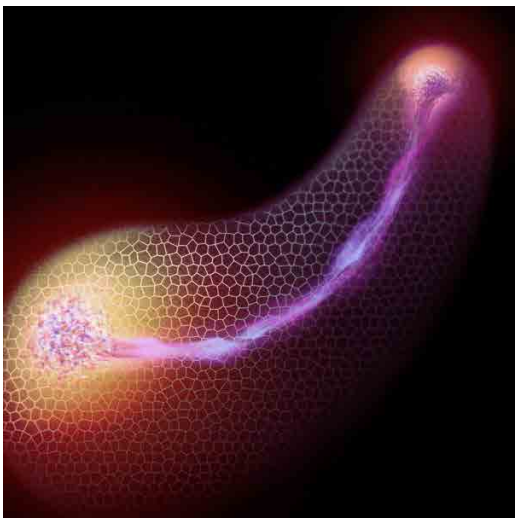
We use structural and molecular biology to investigate protein function and dysfunction in immunity, haemostasis, cell signaling and developmental biology. Support for the laboratory includes an ARC Federation Fellowship, NHMRC and ARC grants, an ARC Centre of Excellence in Advanced Molecular Imaging together with funding from the Wellcome Trust. Generally projects involve any or all of the following techniques: X-ray crystallography, small angle x-ray scattering, electron microscopy, bioinformatics, molecular and cell biology, enzymology and protein chemistry.

Research Projects:

1. **Perforin in immunity & cancer (Collaboration with Professor Joe Trapani, Peter MacCallum Cancer Centre; Professor Ray Norton, MIPS)**
2. **Fibrinolysis in diabetes (Collaboration with Professor J Shaw, Bakers IDI)**
3. **GABA functions in disease (Collaboration with Dr K Tuck, Chemistry Department, Monash University)**
4. **Understanding the structural basis for bacterial conjugation (Collaboration with Professor J Rood, Microbiology Department, Monash University)**



"Polar Aurora" by Paul Martin (Research Media); A stylised depiction of signalling induced by the localized secretion of Trunk at the Drosophila embryo poles.

Selected significant publications:

1. Johnson TK, Henstridge MA, Warr CG, **Whisstock JC**. 2015. Torso-like mediates extracellular accumulation of Furin-clevaed Trunk to pattern the Drosophila embryo termini. *Nat Commun.* 6: 8759.
2. Henstridge MA, Johnson TK, Warr CG, **Whisstock JC**. 2013. Trunk cleavage is essential for Drosophila terminal patterning and can occur independently of Torso-like. *Nat Commun* 5:3419.
3. Law RH, Caradoc-Davies T, Cowieson N, Horvath AJ, Quek AJ, Encarnacao JA, Steer D, Cowan A, Zhang Q, Lu BG, Pike RN, Smith AI, Coughlin PB, **Whisstock JC**. 2012. The X-ray crystal structure of full-length human plasminogen. *Cell Rep*.1(3):185-90.
4. Law RH, Lukoyanova N, Voskoboinik I, Caradoc-Davies TT, Baran K, Dunstone MA, D'Angelo ME, Orlova EV, Coulibaly F, Verschoor S, Browne KA, Ciccone A, Kuiper MJ, Bird PI, Trapani JA, Saibil HR, **Whisstock JC**. 2010. The structural basis for membrane binding and pore formation by lymphocyte perforin. *Nature* 468(7322):447-51.
5. Rosado CJ, Buckle AM, Law RH, Butcher RE, Kan WT, Bird CH, Ung K, Browne KA, Baran K, Bashtannyk-Puhalovich TA, Faux NG, Wong W, Porter CJ, Pike RN, Ellisdon AM, Pearce MC, Bottomley SP, Emsley J, Smith AI, Rossjohn J, Hartland EL, Voskoboinik I, Trapani JA, Bird PI, Dunstone MA, **Whisstock JC**. 2007. A common fold mediates vertebrate defense and bacterial attack. *Science* 317(5844):1548-51.