20. Signal Transduction and Cell Death During Inflammation

1 unit, Alexander Gitlin, February 27. 2026

- Molecular mechanisms of inflammatory and innate immune signal transduction
- Molecular mechanisms of inflammatory cell death and coordination with signaling
- Human genetic diseases affecting inflammatory signaling and cell death components

Discussion papers – all students should read and be prepared to present

Lalaoui N, Boyden SE, Oda H, Wood GM, Stone DL, Chau D, Liu L, Stoffels M, Kratina T, Lawlor KE, Zaal KJM, Hoffmann PM, Etemadi N, Shield-Artin K, Biben C, Tsai WL, Blake MD, Kuehn HS, Yang D, Anderton H, Silke N, Wachsmuth L, Zheng L, Moura NS, Beck DB, Gutierrez-Cruz G, Ombrello AK, Pinto-Patarroyo GP, Kueh AJ, Herold MJ, Hall C, Wang H, Chae JJ, Dmitrieva NI, McKenzie M, Light A, Barham BK, Jones A, Romeo TM, Zhou Q, Aksentijevich I, Mullikin JC, Gross AJ, Shum AK, Hawkins ED, Masters SL, Lenardo MJ, Boehm M, Rosenzweig SD, Pasparakis M, Voss AK, Gadina M, Kastner DL, Silke J. Mutations that prevent caspase cleavage of RIPK1 cause autoinflammatory disease. Nature. 2020 Jan;577(7788):103-108. doi: 10.1038/s41586-019-1828-5. Epub 2019 Dec 11. PMID: 31827281; PMCID: PMC6930849.

Gerlach B, Cordier SM, Schmukle AC, Emmerich CH, Rieser E, Haas TL, Webb AI, Rickard JA, Anderton H, Wong WW, Nachbur U, Gangoda L, Warnken U, Purcell AW, Silke J, Walczak H. Linear ubiquitination prevents inflammation and regulates immune signalling. Nature. 2011 Mar 31;471(7340):591-6. doi: 10.1038/nature09816. PMID: 21455173.