Top 10 – General Selection

1. Haas, R. and T.F. Meyer (1986). The repertoire of silent pilus genes in Neisseria gonorrhoeae: Evidence for gene conversion. Cell *44*, 107-115.

Comprehensive genetic dissection of the Neisseria gonorrhoeae pilin variation system and first evidence for the unidirectional transfer of sequence information from silent to expressed gene copies.

2. Stern, A., M. Brown, P. Nickel, and T.F. Meyer (1986). Opacity genes in Neisseria gonorrhoeae: Control of phase and antigenic variation. Cell *47*, 61-71.

First observation of a short (pentameric) variable nucleotide repeat sequence determining the reading frame and thereby phase variation of the Neisseria gonorrhoeae Opacity proteins.

3. Pohlner, J., R. Halter, K. Beyreuther, and T.F. Meyer (1987). Gene structure and extracellular secretion of Neisseria gonorrhoeae IgA protease. Nature *325*, 458-462.

First description and mechanistic understanding of IgA protease secretion which served as a paradigm for many gram-negative bacterial autotransporter proteins, encompassing major virulence determinants and adhesins.

4. Rudel, T., I. Scheuerpflug, and T. Meyer (1995). Neisseria PilC protein identified as type-4 pilus tip-located adhesin. Nature *373*, 357-359.

Demonstration of a phase-variable, yet relatively conserved, adhesin at the tip of the otherwise highly variable Neisseria gonorrhoeae type 4 pili.

5. Rudel, T., A. Schmid, R. Benz, H.A. Kolb, F. Lang, and T.F. Meyer (1996). Modulation of Neisseria porin (PorB) by cytosolic ATP/GTP of target cells: Parallels between pathogen accommodation and mitochondrial endosymbiosis. Cell *85*, 391-402.

Unexpected functional regulation of the major outer membrane porin of the pathogenic Neisseria species by ATP and GTP revealing striking similarities to the features of the voltage-dependent anion channels (VDACs) of mitochondria in eukaryotic cells.

6. Wunder, C., Y. Churin, F. Winau, D. Warnecke, M. Vieth, B. Lindner, U. Zähringer, H.J. Mollenkopf, E. Heinz, and T.F. Meyer (2006). Cholesterol glucosylation promotes immune evasion by Helicobacter pylori. Nature Medicine *12*, 1030-1038.

Identification and functional characterisation of a major pathogenic trait of Helicobacter pylori securing immune evasion which recent data reveal as the key for the pathogen's life-long ability to persist.

7. Karlas, A., N. MacHuy, Y. Shin, K.P. Pleissner, A. Artarini, D. Heuer, D. Becker, H. Khalil, L.A. Ogilvie, S. Hess, A.P. Mäurer, E. Müller, T. Wolff, T. Rudel, and T.F. Meyer (2010). Genome-wide RNAi screen identifies human host factors crucial for influenza virus replication. Nature *463*, 818-822.

One of the first comprehensive studies revealing host factors essential for influenza virus replication and providing a basis for options of host-directed antivial therapy.

8. Gonzalez E, Rother M, Kerr MC, Al-Zeer MA, Abu-Lubad M, Kessler M, Brinkmann V, Loewer A, Meyer TF (2014) Chlamydia infection depends on a functional MDM2-p53 axis. Nature Commun 5: 5201

Demonstration of a key regulatory feature of Chlamydia trachomatis on host cell function providing clues to the pathogen's anti-apoptotic features with implications on the host metabolism and genome stability.

9. Sigal M, Logan CY, Kapalczynska M, Mollenkopf H-J, Berger H, Wiedenmann B, Nusse R, Amieva MR, Meyer TF (2017). Stromal R-spondin orchestrates gastric epithelial stem cells and gland homeostasis. Nature 548: 451-455.

One of the first insightful studies placing gastric infections by Helicobacter pylori in the context of tissue homeostasis and stem cell function.

10. Rother M, Gonzalez E, Teixeira da Costa AR, Wask L, Gravenstein I, Pardo M, Pietzke M, Gurumurthy RK, Angermann J, Laudeley R, Glage S, Meyer M, Chumduri C, Kempa S, Dinkel K, Unger A, Klebl B, Klos A, Meyer TF (2018) Combined Human Genome-wide RNAi and Metabolite Analyses Identify IMPDH as a Host-Directed Target against Chlamydia Infection. Cell Host Microbe 23: 661-671 e8

One of the most comprehensive analyses of host cell factor involvement in intracellular bacterial pathogen replication including identification and preclinical testing of a suitable target for host-directed therapy.