Outline Reading for MSc Precision Medicine, 2022

General programme reading

A wellness study of 108 individuals using personal, dense, dynamic data clouds. Price ND, Magis AT, Earls JC, Glusman G, Levy R, Lausted C, McDonald DT, Kusebauch U, Moss CL, Zhou Y, Qin S, Moritz RL, Brogaard K, Omenn GS, Lovejoy JC, Hood L. Nat Biotechnol. 2017;35(8):747-756.

Integrative omics for health and disease. Karczewski, K, Snyder, M. Nat Rev Genet 19, 299–310 (2018).

Pharmaco-Geno-Proteo-Metabolomics and Translational Research in Cancer. Fernández-Figueroa EA, Lino-Silva S, Peña-Velasco JE, Rangel-Escareño C. Adv Exp Med Biol. 2019;1168:1-7.

Genetics & Genomics Unit

Websites

National Human Genome Research Institute (NHGRI), Education pages: http://www.genome.gov/10001772
The Human Genome Project Fact sheets: https://www.genome.gov/about-genomics/fact-sheets

PHG Foundation: phgfoundation.org

Papers

Pharmacogenomics in the UK National Health Service: opportunities and challenges. Turner et al. Pharmacogenomics 2020. Nov;21(17):1237-1246.

Molecular profiling for precision cancer therapies. Malone et al. Genome Medicine (2020) 12(1):8

Integrative single-cell analysis. Stuart T, Satija R. Nat Rev Genet 20, 257–272 (2019).

Can Bottom-Up Synthetic Biology Generate Advanced Drug-Delivery Systems? Lussier F, Staufer O, Platzman I, Spatz JP. Trends in Biotechnology. 2021:39(5):445-459.

Books

Genetics and Genomics in Medicine
Author(s):Tom Strachan, Anneke Lucassen ISBN: 9780367490812
Published 22 July 2022, 2nd edition

Proteomics & Metabolomics Unit

ebooks

The Functions of Proteins Are Determined by Their Three-Dimensional Structures. Nature. Primer (http://www.nature.com/scitable/ebooks/essentials-of-cell-biology-14749010/122996920#bookContentViewAreaDivID).

Proteins Are Responsible for a Diverse Range of Structural and Catalytic Functions in Cells. Nature. Primer (http://www.nature.com/scitable/ebooks/essentials-of-cell-biology-14749010/122996980#bookContentViewAreaDivID).

Papers

Personal omics profiling reveals dynamic molecular and medical phenotypes. Chen et al. (2012). Cell 148:1293-1307.

The role of metabolites and metabolomics in clinically-applicable biomarkers of disease. Mamas M, Dunn WB, Neyses L & Goodacre R. (2011). Archives of Toxicology 85, 5-17.

Exhaled breath analysis: a review of 'breath-taking' methods for off-line analysis. Lawal O, Ahmed WM, Nijsen TME, Goodacre R, Fowler SJ. Metabolomics 2017;13:110.

Proteomics in Systems Biology. Aizat WM, Hassan M. Advances in experimental medicine and biology. 2018;1102:31-49.

Spatial proteomics: a powerful discovery tool for cell biology. Lundberg E, Borner GHH. Nature reviews Molecular cell biology. 2019;20(5):285-302.

Imaging the future: the emerging era of single-cell spatial proteomics. Paul I, White C, Turcinovic I, Emili A. FEBS journal 2021;288(24):6990-7001.

An atlas of genetic influences on human blood metabolites. Shin et al. (2014). Nature Genetics 46(6):543-550.

Research Methods Unit

Heaslip and Lindsay (2019) "Research and Evidence-Based Practice: For nursing, health and social care students" Particularly, the following sections in Part One:

1. Identifying the research aim
2. Reviewing the literature
3. Designing a study
7. What do we know now? Communicating research findings

Laboratory Skills Unit

Helgason, C.D. and Miller, C.L. (2013). Basic Cell Culture Protocols. 4th ed. 2013. C. D. Helgason & C. L. Miller, eds. Totowa, NJ: Humana Press.

McPherson, M.J. and Møller, S.G. (2006). PCR. 2nd ed. New York; Taylor & Francis.

Rosenberg, I.M. (2005). Protein Analysis and Purification : Benchtop Techniques. Second Edition. Boston, MA: Birkhäuser Boston.

Matsumoto, B. (2002). Cell biological applications of confocal microscopy. 2nd ed. San Diego; Academic Press.

The Biomedical & Life Sciences Collection. The Collection contains over 3100 lectures, covering the fundamentals as well as the latest advancements in the fields of Life Sciences, Medicine and Pharmacology. All talks were specially commissioned by leading world experts, including a number of Nobel laureates.

University of Manchester has full and unlimited access to all the lectures via hstalks.com/biosci