

**PRACTICAL CLASS PROGRAM:**

- Weekly Quiz + revision (10 minutes)
- Completion of surveys (10 minutes)
- Practical class activities (40 minutes)
- Guest Lecture by A/Prof Stuart Fraser (45 minutes)
- Practical Class Revision (15 minutes)

**PRACTICAL CLASS ACTIVITIES (40 minutes):**

1. Cell lineage activity
2. Investigate the chicken embryo skeletal preps

**LEARNING OBJECTIVES:**

- Understanding organogenesis
- Understanding the developmental paths of cell types/structures
- Understand the developmental basis of human disease
- Understanding skeletal development
- Understanding blood cell development
- Understanding research into blood cell development

## PRACTICAL CLASS ACTIVITY

In this practical class we will work in small groups of 2-3 students. Each group will be assigned an adult cell type or structure.

Each group will have to present to the group:

- the cell type/structure
- what it does in our body
- explain the developmental path of this cell/structure until adulthood
- a disease or (developmental) abnormality that is associated with this cell type/structure (if available)

You will have 10 minutes to investigate and prepare our presentation, and each group will have 2 minutes to present to the group. You can use the white board, or you can make a quick PowerPoint, whichever preferred.

The cell types/structures to be discussed by the groups are:

1. Podocyte
2. Leydig cell
3. Gastric muscularis mucosal cell
4. Myosatellite cell of the erector spinae muscle
5. Purkinje cell
6. Herring bodies
7. Auerbach's plexus
8. Odontoblast
9. Islet of Langerhans
10. Type II pneumocyte

### Example: keratinocyte.

A keratinocyte is an epithelial cell located in the epidermis of our skin. It serves to establish an effective barrier with the external environment. Eczema will develop if the keratinocytes cannot establish an effective barrier

Developmental path: zygote -> blastomere -> inner cell mass -> epiblast -> ectoderm -> lateral ectoderm -> surface ectoderm -> basal epidermal cell -> keratinocyte.

## GUEST LECTURE BY A/PROF STUART FRASER

[A/Prof Stuart Fraser](#) is an internationally renowned researcher at the University of Sydney and he teaches developmental biology to undergraduate students there. His main research interest focuses upon the mechanisms controlling the formation of the blood, or hematopoietic lineages, in the embryo and how these processes can go awry in the adult.

## REVISE PRACTICAL CLASS ACTIVITIES

In the last 15 minutes we will collectively revise the activities with the entire class to wrap up this prac.