

Final project  
Developmental Biology 2XX  
50 points

Science for its own sake may be interesting, but in the long run fruitless if it does not promote understanding and discovery for society. Along with relevance, basic science requires the ability to demonstrate this relevance to society. In developmental biology this relevance is usually to a human defect or disorder in which study of the biological developmental origins can enhance the understanding and treatment of the disorder.

In order to better understand the link between basic science research and human disorders, students will:

1. Individually identify a human birth defect (you make pick from the list provided or a disorder of your choice)
2. Construct an article describing this defect and its developmental origin, medical treatments, and current research in this field.

The article must explain to a broad audience the biological process that resulted in this defect including:

- Background of this disorder including:
  - How the disorder is manifest in patients
  - Current medical treatments and options for the patients
- Background of development in relation to this disorder, including:
  - Normal development of appropriate/affected stages
  - Stage specific anomalies that arise in this disorder
  - Causes of this disorder (genetic, incomplete development of a stage, another disorder, etc.)
- Current research in the area of this disorder, including:
  - Research from three current journal articles (at least one primary article)

Refer to the rubric on the next page to guide you in the components included in a strong paper.

<b>Section</b>	<b>Weak paper</b>	<b>Intermediate</b>	<b>Strong paper</b>
Writing	Uses over simplified language or scientific jargon, sections deliver pertinent facts	Describes disorder and defines ideas, sections are coherent	Uses intelligent and understandable language, explains terms and ideas, sections flow with one voice
Background	Introduces the disorder and current medical treatments	Describes the disorder and current medical treatments in detail including aspects of managing the disorder	Explains the disorder and complications from it, lifestyle/ management issues, current medical treatments and untreated areas, giving a complete picture of the disorder
Developmental aspects	Identifies the developmental origin of the disorder including genetics and developmental stages	Description of the developmental origin of the disorder including progression from the initial anomaly to the adult disorder	Detailed explanation of how genotype and phenotype interact in the disorder integrating course material (such as field theory) and implications for the disorder
Current research	Identifies research in the scientific area of the disorder	Describe current research and how this connects to the disorder	Explain research progress as well as its implications (positive and negative) for this disorder