



Project Title: Curating the World's Knowledge of Skeletal Dysplasias		Code: CHW13
Host School / Institute: Children's Hospital at Westmead Clinical School		Address: The Children's Hospital at Westmead
Certificates & Clearances required: Yes *Working with children clearance <i>Information on how to obtain certificates, where necessary, will be given to successful applicants.</i>		
Primary Supervisor: Prof Andreas Zankl		
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Co-Supervisor/team: Kristina Hanspers and Alex Pico, University of California, San Francisco (WikiPathways Team)		
Project Type: Data Analysis; Literature Review; Design		
Project Category: Molecular biology; Bone		
Skills / Attributes of a successful student: Student should have a basic understanding of cell and molecular biology and an interest in bone and cartilage and skeletal development. Bioinformatics skills would be desirable but not essential.		
Project Keywords: network analysis; pathway analysis; systems biology; skeletal dysplasias; genomics		
<p>Project Description: Skeletal Dysplasias are rare genetic disorders affecting skeletal development. Patients with skeletal dysplasias have bones that are short, malformed or break easily. The Children's Hospital Westmead is world renowned for its role in diagnosis and management of these rare disorders.</p> <p>There are over 400 different types of skeletal dysplasias, caused by mutations in over 300 different genes. Studying how a defect in a single gene causes the clinical abnormalities of a skeletal dysplasia has taught us a lot about how bones function at the molecular level. However, this knowledge is fragmented and hidden away in scientific publications.</p> <p>WikiPathways (www.wikipathways.org) is a database of biological pathways maintained by the scientific community. Wikipathways allows anyone to create and publish models of biological pathways to benefit biomedical research. Thanks to its crowd-sourcing approach, Wikipathways has quickly become the largest biological pathway database worldwide and an indispensable resource for biomedical research.</p> <p>This project aims to create and publish models of biological pathways that cause skeletal dysplasias in Wikipathways. This would be a tremendously valuable resource for research on skeletal dysplasias and other bone related disorders.</p> <p>This project is suitable for students with a background and interest in molecular and cell biology. Students will learn how to create biological pathways using the pathway editing tools provided by Wikipathways. Students will work together with experts on skeletal dysplasia pathways and the Wikipathways Team. Completed pathways will be listed on the Wikipathways website with the student being listed as the author or co-author.</p>		