



JUNIOR RESEARCHER MENTORING PROGRAMME 2022

Code:	JRMP2022_11
School / Department:	Department of Biomedical Engineering
Name of Research Leader:	Prof. Yong-Ping Zheng, Chair Professor
Research Topic:	Evaluation of Spine Using Three-dimensional (3D) Ultrasound
Short Description of the Research Project:	<p>Spine radiography is still the gold standard to evaluate spinal curvature and detect scoliosis. However, radiation exposure is still a big concern of patients with idiopathic scoliosis, especially to those who are undergoing growth spurt during their puberty. Ultrasound imaging is radiation-free, comparatively more accessible and cheaper than other imaging modalities. Therefore, the use of ultrasound could eliminate radiation exposure to patients and provide an alternative option to patients with scoliosis for more frequent evaluation. A customized three-dimensional ultrasound system and a compatible software for 3D analysis of spine with good reliability and accuracy have been developed for spine curvature evaluation in different types of postures.</p> <p>In the research project, participating students could:</p> <ol style="list-style-type: none"> 1) learn how to conduct free-hand scanning using the ultrasound system; 2) understand the mechanism of this novel technology; and

	3) learn about the anatomy of spine and what features can be observed during posterior-anterior ultrasound scanning; and 4) evaluate spinal curvature in 3D planes.
No. of Places Offered:	2
Frequency of Meetings:	Bi-weekly
Special Requirement(s):	Preferred subjects taken: Biology / Physics

** The information presented above is subject to change.*