

**2011 IARU Global Internship Program**  
**Available opportunities from the National University of Singapore**

Internship 1	
<b>Host Faculty/ Department</b>	Department of Biological Sciences Faculty of Science
<b>Internship title*</b>	Genetic Variations Associated with Asthma & Atopic diseases
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	Asthma is a complex airway inflammatory disease. Although more than 200 genes have been associated with asthma in various populations, none have been found to be associated in all populations. There are evidences showing that the association of a gene to asthma is specific to a particular population or environmental conditions. We have performed a genome-wide association study for asthma. This study will analyze potential gene-gene and gene-environment interaction(s) associated with the development of asthma and allergic diseases in Singaporean Chinese.
<b>Learning outcomes</b> (what students can expect to gain from the internship)	The student will be involve in the epidemiological survey and ascertainment of the study population, and as such would have first-hand experience in handling such a project. Additionally, the student will learn how to process the samples e.g., DNA extraction, and design genotyping experiments. Overall, the student will pick up the skills necessary to understand genetic epidemiological techniques including the study designs and statistical methods, apart from basic laboratory competencies.
<b>Skills required</b> (e.g. languages, subject-specific skills)	Basic competency in molecular biology techniques - PCR, sequencing, genotyping, and basic computing biostatistical and bioinformatic skills.
<b>Supervisor/ Mentor</b>	Associate Professor Dr CHEW Fook Tim ( <a href="mailto:dbscft@nus.edu.sg">dbscft@nus.edu.sg</a> ) Dr ONG Tan Ching ( <a href="mailto:dbsotc@nus.edu.sg">dbsotc@nus.edu.sg</a> )
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Associate Professor Dr CHEW Fook Tim ( <a href="mailto:dbscft@nus.edu.sg">dbscft@nus.edu.sg</a> )
<b>Applications open / Anticipated “go-live” date for uploading on IARU website:</b>	1 December 2010
<b>Applications close date:</b>	1 March 2011
<b>Successful students to be notified by:</b> (host university to directly notify students with home university in the email cc)	11 March 2011
<b>Selected students to respond by:</b>	18 March 2011

Internship 2	
<b>Host Faculty/ Department</b>	Department of Biological Sciences Faculty of Science
<b>Internship title*</b>	Development of Genome-wide Microsatellite-based Linkage Map of the Oil Palm Genome for Quantitative Trait Loci (QTL) Identification
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	The project aims to develop a microsatellite (short simple repeats or SSR)-based marker system for oil palm research. It is envisaged that SSR markers will saturate existing genetic maps and help improve genome coverage. Their co-dominant nature will also allow integration of the different genetic maps and identification of genomic loci associated with important agricultural traits in oil palm.
<b>Learning outcomes</b> (what students can expect to gain from the internship)	The student will learn how to bring raw sequence data and thereafter identify microsatellites and identify the presence of polymorphisms in different populations. The candidate will also learn how to produce a genetic map based on these markers and how these (genetic maps and markers) are used to identify QTLs (Quantitative Trait Loci) controlling major complex genetic traits. Apart from basic molecular techniques, the student will also learn the experimental designs and statistical tools needed for such studies in general.
<b>Skills required</b>	Basic competency in molecular biology techniques - PCR, sequencing, genotyping, and basic computing biostatistical and bioinformatic skills.
<b>Supervisor/ Mentor</b>	Associate Professor Dr CHEW Fook Tim ( <a href="mailto:dbscft@nus.edu.sg">dbscft@nus.edu.sg</a> ) Mr Wong Kang Ning ( <a href="mailto:dbswkn@nus.edu.sg">dbswkn@nus.edu.sg</a> )
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Associate Professor Dr CHEW Fook Tim ( <a href="mailto:dbscft@nus.edu.sg">dbscft@nus.edu.sg</a> )
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Internship 3	
<b>Host Faculty/ Department</b>	Department of Mechanical Engineering Faculty of Engineering
<b>Internship title*</b>	Development of Brain-machine Interface using an EEG based Neuronal Source Localization Imaging System
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	A novel scalp EEG based neuronal source localization imaging system has been developed in the Neurosensors Lab, Department of Mechanical Engineering, National University of Singapore. One of the important applications of the system is to use it for Brain-Machine Interface, in which the system extract a person's attentions and intentions directly from the person's brain in a form of the neuronal source localization patterns for controlling a machine directly by the brain. In the current proposed project, the student will be working on developing the interface between the EEG based neuronal source localization system and a machine or robot, especially on digitizing a person's intentions or attentions presented by the sensed neuronal source localization patterns, for the direct control of a machine or robot.
<b>Learning outcomes</b> (what students can expect to gain from the internship)	Knowledge and skills in scalp EEG measurement, brain-machine interface and brain-computer interface.
<b>Skills required</b>	C programming
<b>Supervisor/ Mentor</b>	Prof Li Xiaoping (in collaboration with Prof Han Pingchou, Peking University)
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Prof Li Xiaoping ( <a href="mailto:mpelixp@nus.edu.sg">mpelixp@nus.edu.sg</a> )
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Internship 4	
<b>Host Faculty/ Department</b>	Department of Electrical and Computer Engineering Faculty of Engineering
<b>Internship title*</b>	Tele-rehabilitation and Wearable devices for Home Therapy in Strokes and Parkinson disease patients
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	The ability to monitor and measure accurately, comfortably, and continuously the progress of a patient undergoing rehabilitation, without injecting cumbersome wires or boxes into their activities, has the potential to revolutionize health therapies and services. In this work, we propose to develop affordable, wireless, lightweight and accessible home therapy system that will be well tolerated by stroke and PD patients, and can be performed over the duration needed to obtain results. The sensors will be developed with the direct and frequent involvement of doctors, therapists, and the patients themselves (the end-users), e.g. different types of sensors will be used for different exercises. The proposed therapy system allows patients to improve their motor control by providing them with real-time feedback using wireless sensors embedded in the wearable devices.
<b>Learning outcomes</b> (what students can expect to gain from the internship)	Knowledge on sensors and instrumentations. Development of low cost wearable wireless devices to monitor movement.
<b>Skills required</b>	Nil, willing to work and interact with post-stroke patients/ Parkinson disease patients.
<b>Supervisor/ Mentor</b>	A/Prof. Arthur TAY ( <a href="mailto:eletaya@nus.edu.sg">eletaya@nus.edu.sg</a> )
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Ms Elyn Yip Dept of Electrical & Computer Engineering National University of Singapore 4 Engineering Drive 3, Singapore 117583 Email: <a href="mailto:eleylye@nus.edu.sg">eleylye@nus.edu.sg</a>
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Internship 5	
<b>Host Faculty/ Department</b>	International Relations Office
<b>Internship title*</b>	Design of Publications and Collaterals
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	<p>As the promotional arm of International Relations Office, the Marketing Communications Section provides marketing support to the office through managing and executing events &amp; visits; creating and producing collaterals; and raising the visibility of the department when communicating with internal and external parties.</p> <p>You will be attached to a team of dynamic and fun-loving staff to assist with the design of publications or/and collaterals. You may also be required to undertake certain copywriting tasks (e.g. newsletter).</p>
<b>Learning outcomes</b> (what students can expect to gain from the internship)	You will be working in an international environment and have contact with local and international students. You will be exposed to how a leading Singapore university reaches out to its students, and gain cross cultural understanding of the marketing strategies that work in Singapore.
<b>Skills required</b>	<p>Knowledge of the following software is an asset:</p> <ul style="list-style-type: none"> <li>• Adobe InDesign</li> <li>• Adobe Photoshop</li> <li>• Adobe Dreamweaver</li> <li>• Adobe Illustrator</li> <li>• CorelDraw Suite</li> </ul> <p>Fluent in written and spoken English</p>
<b>Any Other Information/ Requirements</b>	Major in Mass Communication, Journalism, Marketing or Design will be an advantage.
<b>Supervisor/ Mentor</b>	Mr Eugene Goh ( <a href="mailto:iroeg@nus.edu.sg">iroeg@nus.edu.sg</a> )
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Mr Eugene Goh ( <a href="mailto:iroeg@nus.edu.sg">iroeg@nus.edu.sg</a> )
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Internship 6	
<b>Host Faculty/ Department</b>	NUS Museum
<b>Internship title*</b>	Camping and Tramping through the Colonial Archive: Empire, Museum, Malaya
<b>Duration of internship*</b>	23 May – 15 July 2011
<b>Internship Description*</b>	Considering the processes which accompany the production of knowledge, this project investigates the rise of museology in British Malaya. Approached as two-fold: first, as the modern sciences were deployed in making sense of Malaya and its bewildering diversity in the late 19th and early 20th centuries, the Museum became a fascinating staging ground for a project of accumulation and the ordering of knowledge. Second, in the post-colonial attempt at interrogating the rise of the Museum and the practice of exhibition-making in the region, one is led to examine lesser appropriate “texts” which emerged at about the same time, documenting what was perceived as the practice of “magic” and “superstition” amongst the local populous. Lodged between such predicaments, the project will seek to mobilizes and reflect upon the staging of science and exposing performances which may enable us to reflect more seriously on what constitutes the colonial archive, how contemporary art practitioners would lay claim to it and most significantly what sort of histories one can tell of such encounters in a museological setting.
<b>Skills required</b> (e.g. languages, subject-specific skills)	Interest in Archival and Bibliographical Work with specific reference to Southeast Asian Art and Museology
<b>Any Other Information/ Requirements</b>	This internship will specifically require the applicant to gather materials from the archives relating to Museums on the Malaysian Peninsula, the Federated States of Sabah and Sarawak and any other research work related to the project.
<b>Supervisor/ Mentor</b>	Shabbir Hussain Mustafa Asst. Curator, NUS Museum
<b>Funding</b> (e.g. salary, accommodation and airfare, if providing)	TBC
<b>Person to contact for more information*</b>	Shabbir Hussain Mustafa ( <a href="mailto:cfashm@nus.edu.sg">cfashm@nus.edu.sg</a> )
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