

LIST OF UROP OFFERED IN SEMESTER 2, AY2011-2012

DEPARTMENT OF SOCIAL WORK

Name of Principal Investigator (PI) and team: Dr Irene Ng (Social Work), Dr Ho Kong Weng (Economics, NTU), Dr Alex Lee (Social Work), A/P Ngiam Tee Liang (Social Work)

Topic of Research Project: Longitudinal Study of Recipients of Work Support

Project Duration: April 2009 - Dec 2015

Description of the Research Project:

Work Support is a programme by the Ministry of Community Development Youth and Sports (MCYS) that helps low income families achieve financial self-reliance (http://www.mcys.gov.sg/web/serv_E_WS.html).

The research project is a collaboration with MCYS. It follows recipient families for five years, with the following aims:

- Assess the socioeconomic status of WSSR families
- Analyze factors influencing outcomes
- Analyze incentives/motivations towards self-reliance
- Understand challenges faced by different types of WSSR families

Student's role in this project:

This project offers an exciting opportunity for students to gain hands-on learning of programme evaluation and policy analysis. Students will assist in

- Conducting face-to-face surveys and in-depth interviews
- Compiling and cleaning survey data
- Analyzing administrative, survey, and interview data
- Writing research and policy reports
- Co-ordinating, attending and following up on meetings with MCYS and Community Development Councils (CDCs)

Two places will be available for this project at any one time, spanning 10 hours a week each semester, for a total of 130 hours. Details on application and requirements of the programme are provided at:

http://www.fas.nus.edu.sg/undergrad/toknow/special_programmes/UROP.htm.

For AY11/12, the research opportunity is open to Year 3 Social Work students. If selected, students will have to register for the module by **13 January 2012** for Semester 2. Interested students should email Assistant Professor Irene Ng by **6 December 2011** at

swknyhi@nus.edu.sg with the following details: (a) the list of Social Work modules taken at NUS; (b) unofficial transcript; and (c) a 300 word statement of why they want to be involved in the project.

DEPARTMENT OF GEOGRAPHY

Name of Principal Investigator (PI) and team: A/P Alan D. Ziegler

Topic of Research Project: Ecosystem Recovery in Response to Natural and Human Disturbance: Pang Nga Bay Thailand

Project Duration: June-July 2012 (Two months) Special Term

Description of the Research Project:

There is increasing recognition of the value of mangrove forests, seagrass meadows, and coral reefs in providing habitat for important ocean products and protecting coastal communities from natural disasters, including tsunamis. Both natural events and human activity stress all of these ecosystems; and most are now in decline compared with historical periods. For example, mangrove coverage along the Andaman Coast and in the Gulf of Thailand has decreased by almost 20% in the last thirty years, largely in response to human disturbance, but also natural events. Some researchers believe that the health of any one of these components relies, in part, on chemical, biological, and hydrodynamic interaction between all components. Such ecosystem "facilitation", which has yet to be shown in the Indian Ocean where biodiversity is very high, may be of enormous importance for the protection of coastlines from natural disasters, as well as, the preservation of fishing livelihoods. The objective of this project is to understand the extent that ecosystem facilitation occurs between mangrove forests, sea grass meadows, and coral reefs, with respect to natural and anthropogenic stressing phenomena.

Student's role in this project:

One to three students are sought to participate in field sampling campaigns and lab analysis of sediment and selected element fluxes among mangrove, seagrass, and coral ecosystems at the field site in Southern Thailand. The students will work with graduate students and post-docs in a field setting on the remote island of Ko Yao Yai in Pang Nga Bay, along the Andaman Coast of Thailand. The student contributions will help form the basis for published works, and collected data will be used to parameterize models predicting sediment and nutrient movement between the three ecosystem components. The students must be able to work and communicate with

an international group of researchers. The conditions will be Spartan; and the students will be expected to perform field work during harsh monsoon conditions.

Assessment:

CA: 100%. 3,000 word assignment

Name of Principal Investigator (PI) and team: A/P Matthias Roth (PI)

Topic of Research Project: The role of vegetation in the carbon exchange of a residential neighbourhood

Duration of the Research Project: One semester

Description of the Research Project:

The objective of this project is to assess the role of vegetation (trees, shrubs and grass) on the carbon uptake and release in a typical residential neighbourhood in Singapore. The study site is an already existing monitoring site where several climatic parameters are measured on a continuous basis. The projects results will contribute to the assessment and verification of the measured carbon dioxide fluxes. If a second student is available, the analysis could be extended to include carbon dioxide emissions from vehicles which, together with the contributions from vegetation, would allow a direct comparison of the combined data with the directly measured fluxes. This is an important and timely topic within the context of urban contributions to global climate change and for devising appropriate carbon dioxide mitigation measures at the urban scale.

Student's role in this project:

The proposed project involves literature review, constructing an inventory of vegetation in the study area, interaction with National Parks Board, data analysis and report writing. The student is expected to contribute to all stages. Prior knowledge of GIS is an advantage but not essential. Up to two students could be involved.

Communication and New media

Name of Principal Investigator/Team: A/P Milagros Rivera Dr. Julian Lin

Topic of Research Project: Youth and technoculture in Developing Asia

Duration of Research Project: Sem 1 and 2 of AY 2011-2012 Description of the research topic: This is a multi-country study exploring how young people in small and medium towns in developing Asia use new/social media. The study includes a data set of 3000 subjects and 125 in-depth interviews with young people (age 14 to 35) in Thailand, Vietnam, Philippines, Indonesia, Bangladesh and India over the course of almost two years. The study covers youth use of online/computer games, social media, chatting, blogging, internet browsing, use of digital cameras, MP3 players and mobile phones. There are many possible areas that students can explore: regulation of content, gender/religious/social/cultural issues and the impact they have in new media usage and a host of other potential topics that may be of interest to students.

We are looking for students interested in working in the following topics:

1. Use of mobile phones
2. Use of new media for communication
3. Use of new media for entertainment
4. Use of social networking

Student's role in this project: [Note: 3rd or 4th year students preferred.]

Students are expected to be serious researchers/scholars. Those interested in this project will be expected to conduct scholarly research on a specific topic (see above). Students will learn research skills, including establishing relevance of study, conducting lit review, helping with data analysis, identifying relevant theories and drawing conclusions.

This is a serious project and we only want students who are truly interested in participating in an ongoing project and learning new research skills.

Assessment:

The student will be assessed at various stages of his/her work. The literature review/research question/proposal for the study will be worth 25% of the project's grade; the data analysis will be worth 20% and the final paper will be worth 45%. Participation in meetings/discussions will be worth 10% to ensure the student is committed to following deadlines. The student will be expected to meet weekly with the researchers in charge of his project to update her/him on the project's progress.

The weekly meetings are non-negotiable. If students are not willing to meet on a weekly basis, they should not apply to be part of this project.

Name of Principal Investigator/Team: Dr Julian Lin

Topic of Research Project: Developing a measurement instrument for visual design principles and collecting data based on the developed instrument.

Duration of Research Project: One or two semester (depend on students' interest)

Description of the research topic:

Design principles of web pages are quite often not supported by empirical studies as only few studies have validated some of the principles (e.g. Pearson and Schaik 2003). Though practitioners value these principles, researchers have rarely examined and validated whether web pages with these principles are better than those without. For instance, using keywords "design AND contrast AND balance AND web" (please note: double-quote added here to illustrate the keywords used) in Google yields over 1.5 million results which are related to web design guidelines prepared by practitioners. However, when we use the same keywords to search scholarly journals (including peer-reviewed) in the UMI Proquest online database, only one result is returned. This only result is, however, not an empirical study; it is a tutorial article by Nicotera (1999) urging librarian to follow design elements and principles when they design library web pages. She provided design principles with general examples, which are applicable to both print and electronic media. Given the scarcity of empirical studies in this field and the importance of the topic, additional work that examines the effects of various design principles on the usability of the web pages will be important. This project examines these principles, and endeavors to present a working understanding of these principles by developing a measurement instrument and examines the effects of these principles on different domains.

Student's role in this project:

One student for developing the measurement and for testing the pilot study to students

One student for designing the survey questionnaire and for collecting the data.

Assessment:

The students need to write a monthly learning report.

These reports describe on

1. what articles they have read
2. how the articles are relevant to their study in terms of
 - a. developing measurement

- b. conducting a pilot study
 - c. designing questionnaire
 - d. collecting data
3. what have they learnt from the articles in regards to
- a. developing measurement
 - b. conducting a pilot study
 - c. designing questionnaire
 - d. collecting data

At the end of the semester, they need to write a final report (5000 word report) on what have they learnt from the process of

- a. developing measurement
- b. conducting a pilot study
- c. designing questionnaire
- d. collecting data

Name of Principal Investigator/Team: A/P Lim Sun Sun

Topic of Research Project: Youth workers' insights into use of social media by delinquent or at-risk youths

Duration of Research Project: January – May 2012 (5 months)

Description of the research topic:

This is a follow up study to “The use of media and technology by Singaporean juvenile offenders and at-risk youths” which found that among juvenile offenders and at-risk youths, communication via social media such as Facebook and Twitter is very important. Informal discussions with youth workers also found that many youth workers use social media to communicate with their clients and also to keep track of their clients' progress. The earlier study involved interview questions which queried the youths on their social media use, and this

study seeks to triangulate earlier findings by getting youth workers to share their insights on how their clients communicate using social media will also be conducted.

Student's role in the project:

Student will assist in fieldwork, i.e. conducting interviews, data management. Student will also assist in collection and review of extant literature. This project can take up to two students.

Department of Psychology

Name of Principal Investigator (PI) and team: Dr. So Wing Chee and Dr. Philip Cho from ARI

Topic of Research Project: The role of gestures in learning mathematics and spatial skills

Duration of the Research Project: 2 years

Description of the Research Project (one paragraph):

When we talk, we gesture. Gestures are spontaneous hand movements that represent spatial information. This project examines whether gestures would play any facilitating role in learning abacus and navigating skills. If so, we are interested in the underlying mechanisms of the learning processes. Participants involve adults and children.

Student's role in this project:

We plan to recruit at least two UROP students. You will be participating in data collection and analyses. You are expected to work with a team of students who have had started working with us since last year.

Name of Principal Investigator (PI) and team: Dr O'Dhaniel Mullette-Gillman, Assistant Professor in Psychology

Topic of Research Project: Decision-Making: Executive functions and Valuation

Duration of Research Project: Ongoing from spring 2012. Two adjacent semesters for each student. Spaces for multiple overlapping students.

Description of Research Project (one paragraph):

Numerous studies have begun to explore the biological basis of human decision-making. These studies have highlighted the involvement of multiple frontal and striatal brain regions in the valuative and executive cognitive processes that underlie decision-making. Determining the specific informational roles of these various brain regions is critical to understanding human affective valuation (monetary, emotional, and social), cognitive control mechanisms, strategic heuristics, goal planning and maintenance, and learning of environmental contingencies. In this project, we will examine the interactions of executive function on valuation (including social valuation) by specifying these interactions in a number of tasks using both behavioral and neuroimaging methodologies.

Student's role in this project:

During their first term, students will assist in data collection and analysis for multiple on-going behavioral projects. During their second term, students will be continue assisting with these projects and be encouraged to develop their own research question and project (a potential Honors project). Attendance at lab meetings will be required (currently biweekly, will be scheduled to fit attendees), and attendance at the biweekly Cognitive Neuroscience Journal club will be encouraged (<https://sites.google.com/site/oamgwiki/nuscogneurojc>). Students will be required to familiarize themselves with research literature relevant to the project (areas of neuroscience, psychology, and economics) and be able to perform basic Matlab programming for running participants and analyzing data. Other tasks will be determined on an ad hoc basis, depending on the current needs of the projects. The goal of all of this will be for the student to gain experience in research and acquire an in-depth understanding of this research area, while helping advance ongoing studies. Students will be expected to spend at least 8 hours a week on this UROP (reading, attending meetings, data collection, analysis, other skill learning, their journal, and their final paper).

Name of Principal Investigator (PI) and team: A/P Chua Fook Kee

Topic of Research Project: Attention Capture in the Spatial and Temporal Domains

Duration of the Research Project: August to December 2011

Description of the Research Project:

This project is part of a wider project funded by the Science and Engineering Research Council. We are looking at the issue of attentional capture over time and space. We are interested in establishing (a) whether attention capture can be fully automatic, occurring without any volitional control by the observer, and (b) the circumstances under which it may be unconscious. The lab has gathered and published some preliminary data on these issues, and we are seeking to extend and refine this work. In the longer run, we will be extending this work to investigate the case where the visual display consists of video sequences.

Student's role in this project:

The student(s) will assist the PI in the implementation of a project that has been given in-principle approval by the Science and Engineering Research Council. The roles will include the following: (a) piloting the experiments; (b) data collection; and (c) preliminary data analysis. We are acquiring a state-of-the-art eyetracker, and the student(s) if they are willing, may be trained to use the eyetracker. (The team would include students from Electrical Engineering Department.)

Name of Principal Investigator (PI) and team: A/P Leher Singh**Topic of Research Project:** Early Word Learning in Toddlers**Duration of the Research Project:** 1 term**Description of the Research Project (one paragraph):**

This project is designed to investigate how word learning unfolds in young toddlers, both monolingual and bilingual. A particular focus is how and when children appreciate the role of tone in Mandarin Chinese as determining the meanings of words. Toddlers are taught new words and then presented with tonal variants of those words. Their eye movements are recorded to determine how accurate they are at mapping words to meaning.

Student's role in this project:

Students will be involved in infant and toddler testing and should therefore enjoy interaction with children and families. In addition, students will be involved in data coding, data analysis and if interested, in manuscript preparation and publication of findings. I am looking for two students for this project.

Name of Principal Investigator (PI) and team:

PI: Dr Why Yong Peng (Psychology, FASS)

Co-PIs: Dr Tsai Fen-Fang (Psychology, FASS), Prof David Koh (Epidemiology & Public Health, YLSM), Ms Vivian Ng (Epidemiology & Public Health, YLSM)

Topic of Research Project:

The funded project is on the physical cues (facial masculinity, symmetry, ratio of 2nd to 4th finger digits) of salivary testosterone and the effects of salivary testosterone on human behaviour (e.g., aggression, quality of social relationships).

Duration of the Research Project: 3 years. Project starts in 1st June 2011.

Description of the Research Project (one paragraph):

There are three main components in this project: a cross sectional study (N = 750), a longitudinal study (N = 400), and a small sample experimental study (N = 100). The cross sectional study provides the initial pool of participants who are eligible for the longitudinal and experimental study. It involves sampling undergraduates who are currently in a heterosexual dating relationship (N = 250x2 = 500) and undergraduates who are not (N = 250). Each participant will answer a battery of questionnaires and provide (i) a saliva sample, and (ii) photos of their face and hands. Participants who are currently in a heterosexual romantic relationship who subsequently volunteer for the longitudinal study will return to the laboratory on an annual basis where the quality and status of their relationship will be assessed. If they volunteer for the experimental study, they will be engaged in a task where both their verbal and non-verbal behaviours and salivary testosterone and other physiological markers (e.g., blood pressure) will be measured during the task. Some of the variables measured in this project include personality, salivary testosterone, anthropometric measures of facial symmetry and masculinity, facial attractiveness, non-verbal and verbal aggressive/dominant behaviours and also to assess the impact of these variables on the quality and duration of heterosexual romantic relationships in the short and long term contexts. All participants will be paid.

Student's role in this project:

This is a funded project that comprises of several components. It is up to the student to be involved in as many of the components as he/she wishes but the core aspect that the student will be involved in will be the sampling of the initial pool of participants for the cross-sectional study (see point 4). This will entail the student going around campus in the afternoon to seek out volunteers. For each participant, the student will need to (i) obtain informed consent from

the participant, (ii) guide the participant through the research protocol (e.g., take photos of the participants, questionnaire administration, saliva sample collection), and (iii) at periodic intervals, send the saliva samples to the lab for analysis. The protocol is expected to last 1 hour for each participant. Data entry will also be required. As this is a funded project, there will be part time Research Assistants engaged as well to assist in the data collection since the target sample for this study is very large. An ideal candidate for this UROP is one who is meticulous (attention to detail is vital), conscientious, and eager to learn. If circumstances permit, it is possible for the candidate to engage further in this project as his/her ISM, Honours Thesis, and/or at a graduate level.

Department of Economics

Name of Principal Investigator (PI) and team: Dr Tiago Freire

Topic of Research Project: Minimum Wage Laws for Migrants in Singapore

Duration of the Research Project: One semester

Description of the Research Project (one paragraph):

There is a large literature on the effect of minimum wage laws on the labour supply and wages in a given country. Singapore does not have a minimum wage law, however, we will argue that the legislation imposing a minimum wage on foreign workers, has an impact on the wages and labour supply of local workers. We plan to use data from the monthly labour statistics and look at changes in the labour force participation and wages of local workers before and after changes in the minimum wages, in a difference in difference approach.

Student's role in this project (one paragraph):

The student will be asked to collect the data and create a time line in changes in the legislation affecting foreign workers. The students will also be asked to provide a basic analysis of the data (summary statistics and trends).

Name of Principal Investigator (PI) and team: Dr Tiago Freire

Topic of Research Project: Workfare and Labour Force Participation in Singapore

Duration of the Research Project: One semester

Description of the Research Project (one paragraph):

There is a large literature on the effect of payroll tax credit on labour force participation and wages. We plan to use data from the Yearly Labour Statistics and a difference in difference approach to determine the impact of the Workfare program in Singapore on the wage distribution.

Student's role in this project (one paragraph):

The student will be asked to collect the data and create a time line in changes in the legislation affecting workfare. The students will also be asked to provide a basic analysis of the data (summary statistics and trends).

Name of Principal Investigator (PI) and team: Dr Zhong Songfa (PI), Prof Richard Ebstein (Co-I), Prof Chew Soo Hong (Co-I)

Topic of Research Project: Behavioural and Biological Basis of Economic Incentive

Duration of the Research Project: Two years

Description of the Research Project (one paragraph):

Among the central questions in economic sciences is how people are incentivized to undertake desirable actions and avoid the undesirable ones across a range of endeavors from reducing cheating to preventing shirking, increasing blood donation and promoting the social good. Departure from the increasingly questioned classical model of narrowly self-interest assumptions is not uncommon and people are often clearly motivated beyond purely monetary incentive. Cumulative evidence from lab, field, and empirical studies demonstrate that moral sentiments such as fairness, competitiveness, and loyalty are critical components, which contribute to human incentive beyond purely monetary concerns. Building on recent literature, the overarching objective of this research project is to understand the behavioural and biological basis of how manipulating incentive motivates human behavior, by combining biological sciences including genetics and neuroimaging with economic sciences that encompass both behavioral economics as well as experimental economics.

Student's role in this project (one paragraph):

We aim to have 2 students involved in the project. Students will be expected to work closely with the PI, and to actively participate in experimental design, data collection, and data analyses. Through the learning by doing process, students will writing up a research essay to reflect upon the learning outcomes of the programme.

Department of Political Science

Name of Principal Investigator (PI) and team: Associate Professor Soo Yeon Kim

Topic of Research Project: Asia as a Governance Hub: Production Networks and Behind-the Border Commitments in Free Trade Agreements

Duration of the Research Project: One semester (Semester 2, Academic Year 2011/2012)

Description of the Research Project (one paragraph)

The project investigates “models” of governance that are provided through behind-the-border commitments in free trade agreements (FTA). As production networks have become a prominent and permanent feature of Asian integration, the need for governance structures to facilitate the movement of intermediate goods across borders has become ever more pressing. The question of significance at this juncture is whether Asian countries adopt existing “models” from other countries, especially major trading partners such as the European Union and the United States or, rather, are in the process of constructing a distinct Asian model. This study seeks to identify not only prevalent patterns of governance structure through FTAs but also the factors that drive the diffusion of particular models, such as domestic politics, rise of multinational firms in Asia, the global shift in economic power, and geopolitics. This project focuses on FTAs concluded by Asian countries with other Asian countries and with non-Asian countries. In examining the legal provisions of FTAs, the project will investigate features of states’ commitments in liberalization of behind-the-border measures in areas such as investment, services, intellectual property rights, technical barriers to trade, and competition policy.

Student’s role in this project:

Students in this project, under the supervision of the professor and her graduate research assistant, will assist in coding the provisions of free trade agreements in the areas mentioned above. As this is a large-scale data-gathering process and I will also need to check for consistency in the coding, I request that participation in this project be made available to more than one student. In terms of structure, there will be regular meetings between the professor, the graduate research assistant, and the undergraduate participants to discuss progress in data gathering as well as coding issues that are very likely to arise.

Department of Sociology

Name of Principal Investigator (PI) and team: A/P Paulin Straughan (PI), Dept of Sociology, FASS; A/P Adeline Seow, Dept of Community, Occupational and Family Medicine, Faculty of Medicine; Dr Joonmo Son, Dept of Sociology, FASS

Topic of Research Project: Promoting Longevity and Healthy Ageing Through Preventive Health Measures

Duration of the Research Project: June 2011 - June 2014 (36 months)

Description of the Research Project (one paragraph):

The study will investigate the factors that influence perception of cancer and other fatal chronic diseases, their causes and prevention. These perceptions will, in turn, be causally matched with preventive health behavior in the study. Of particular significance, the study will attempt to partial out key elements of lay belief systems (e.g. epidemiology) and other alternative ideologies (e.g. folk religion, belief in fatalism, alternative health belief systems) and their effects on health-seeking behaviour. For this purpose, network analysis will be employed. The outcome of this research will be the elaboration of attitudinal barriers (social and cultural) to pro-active health screening behaviours and healthy lifestyles. This will be instrumental in promoting public health policies and planning interventions that will exploit these links and elevate the level of acceptance of important health care messages.

Student's role in this project:

Students will assist in:

- i. Questionnaire construction and pre-testing of survey instrument
- ii. Data gathering through large-scale quantitative surveys (using questionnaires) of target population at the age range between 40 – 69 years.
- iii. Analyzing interview and survey data and writing up a research essay. This should reflect upon and critically assess the research to which the student has contributed. It should evaluate the success of the research using the norms and expectations of the discipline, and look ahead to possible future developments.
- iv. Doing secondary research of in-depth literature review on theories and empirical research.

Number of Interns required:

Two students at least

ASIA RESEARCH INSTITUTE

Principal Investigator: Dr. Michelle Miller

Duration of project: One semester (January – May 2012)

Departments: Geography, Southeast Asian Studies, Chinese Studies

Topic of Research Project: Decentralization in Asian Cities

Project Description (one paragraph):

This project explores the relationship between decentralization and urban change in Asia. The project is concerned with cities as units of analysis in their own right, as well as with the networks and linkages forged between cities as a result of the devolution of central state power and resources. In viewing decentralizing and decentralized cities as new 'centers' of innovation, the aim of the project is to assess the comparative potential of lessons learned from city experiences of decentralization in addressing common challenges such as rapid urbanization, public service delivery and community building. It also explores how the practices and processes of decentralization travel between cities in Asia to foster new networks of governance and inter-city cooperation.

Student role in project (one paragraph):

Depending on your background and interests, you could choose to focus on a particular city in any Asian country where decentralization processes have taken place (for example, Indonesia, Philippines, India, China). You will be asked to map out new networks and linkages from this city and its people since the initiation of decentralization. This could be in the form of inter-governmental networks of cooperation, business and technology exchanges, mayor forums and so on. The goal is to look at how these new networks have stemmed from, and been made possible through decentralization, and how they have been used to promote cities as destinations and investment sites. We will meet regularly for discussions about your topic