

spotlight

on research

PP 19354/08/2018 (034935)

2020

A CLOSER LOOK AT

Getting the Bear Facts

BEHIND THE RESEARCH

The Power of Music

HIGHLIGHTS

The Economic
Voting Puzzle
of Malaysia

Demystifying
Islamic
Hospitality

Does Corporate
Internationalisation
Improve Firm
Performance?

Audience
Participation in
Classical Music

Contents

HIGHLIGHTS

- 2** The Economic Voting Puzzle of Malaysia
- 4** Demystifying Islamic Hospitality
- 6** Does Corporate Internationalisation Improve Firm Performance?
- 8** Audience Participation in Classical Music

10 BEHIND THE RESEARCH

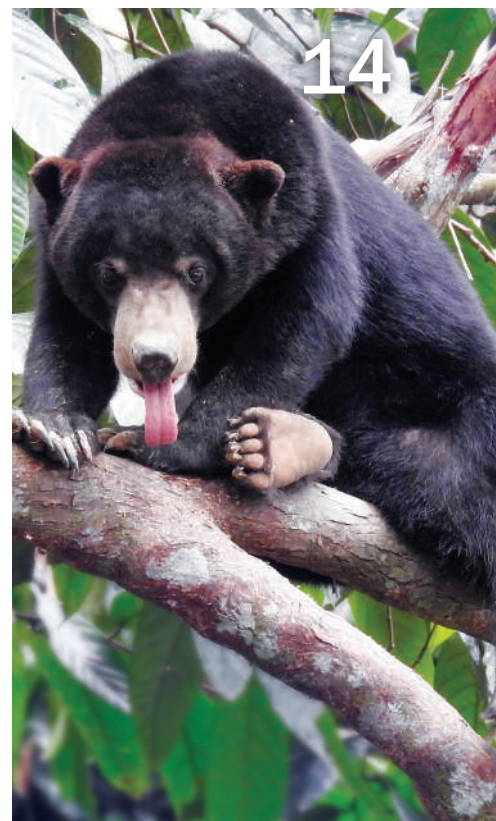
The Power of Music

14 A CLOSER LOOK AT

Getting the Bear Facts

20 SNIPPETS

24 RESEARCH DIRECTORY



from the Editor-in-Chief

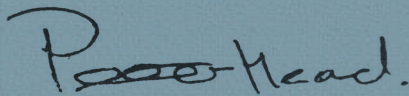
Welcome to *Spotlight on Research* Volume 4, the latest showcase of Sunway's diverse, multidisciplinary research.

In *A Closer Look At*, two little-known Asian bears share the limelight, as Dr Shyamala Ratnayeke writes about her research on the sloth bear and the sun bear and reminds us why carnivore conservation is important.

This volume also features Professor Yeah Kim Leng's research on deciphering the outcome of the recent Malaysian general election and Professor Chaiporn Vithessonthi's findings on what constitutes a successful strategy for corporate internationalisation. Elsewhere, we follow Professor Marcus Stephenson into the world of Islamic hospitality.

Through Professor Don Bowyer, we learn about aleatoric music and how audience participation can meaningfully influence a performance. In a special feature, he also shares with us his personal journey through music and how he came to play the trombone.

These articles represent just a small selection of the wide-ranging research we have in Sunway. As always, I hope you will find great pleasure in reading these articles.



Professor Peter Heard

Provost



Editor-in-Chief

Prof Peter Heard

Editorial Advisor

Carol Wong

Editor

Sarah Loh

Contributors

Prof Chaiporn Vithessonthi

Prof Don Bowyer

Prof Marcus Stephenson

Prof Saidur Rahman

Assoc Prof Dr Shyamala Ratnayeke

Prof Yeah Kim Leng

Designer

Rachel Goh

Printer

Super Yueta Print

40 Jalan PBS 14/8

Taman Perindustrian

Bukit Serdang

43300 Seri Kembangan

Selangor Darul Ehsan

Cover Image

Credit: Assoc Prof Dr Shyamala Ratnayeke

Copyright © 2020 by Sunway University Sdn Bhd. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, now known or hereafter invented, without permission in writing from the publisher.

All information is correct at the time of printing.



The Economic Voting Puzzle of Malaysia

Disentangling the disconnect between national-level economic statistics and on-the-ground realities in explaining Malaysia's election outcomes

Economic voting behaviour, whereby voters reward the incumbent ruling party for delivering economic prosperity, is pervasive across countries. The influence of economic factors on voter behaviour has been extensively studied since the rational choice theory was applied in the 1950s to understand voter behaviour in democratic elections.

Economic voting, as the research paradigm is called, draws its theoretical underpinnings from the responsibility hypothesis in political science theory of democracy, which asserts that voters hold the government accountable for the country's economic performance.

Yet in May 2018, despite the strong economy, Malaysia saw its ruling party defeated in its general election (GE).

The surprise outcome accentuates the weak relationship between the country's economic performance (as measured by per capita income growth, wage and employment growth, inflation, etc.) and election outcome (as represented by the percentage of votes or seats obtained by the ruling party).

To decipher the economic voting paradox, my research focused on three questions: (1) are Malaysian voters unconcerned about the economy?, (2) do national-level economic indicators

not reflect realities on the ground?, and (3) are economic issues too complex to relate to election outcomes?

For the first question, I examined pre-election polls conducted by the Merdeka Center, an opinion research company. The poll results revealed Malaysian voters to be concerned with issues such as crime and public safety, political instability, social problems, national leadership, corruption, and the economy.

Although the relative importance of these issues fluctuated across the election years, economic concerns topped the list in the 2018 GE at 43%. While this was lower than in the 2008 GE (50%), it

was an increase from the 2013 GE (25%) and 2004 GE (18%). The overall poll results suggest Malaysian voters do worry about the economy, similar to voters in other democratic countries.

This was puzzling as most indicators pointed to continuing growth momentum and a generally healthy economy under which Malaysia's 2018 GE was held. This led to my second line of inquiry that the indicators based on national aggregates could have masked the varying or unequal economic performance across industries, regions and income groups.

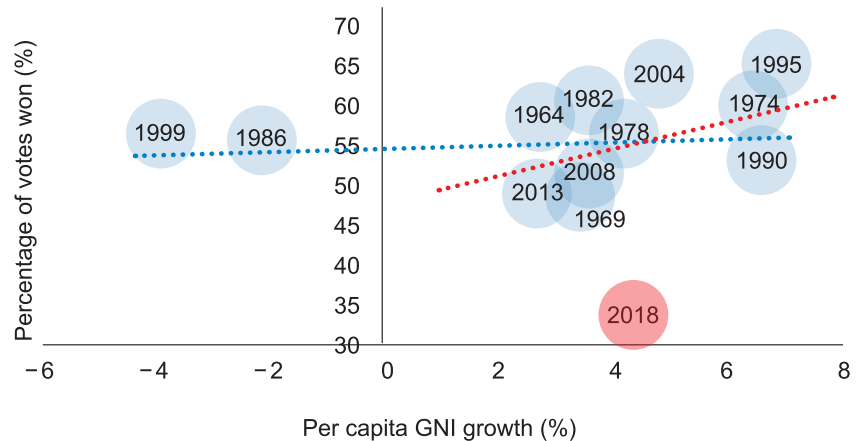
By examining the performance of 18 broad sectors, I found growth to be more widespread in the year preceding the 2018 GE compared to the 2013 GE.

Growth at the industry level, however, showed wide dispersion. Dissecting the output performance of 105 industries, it could be seen that besides lower overall average growth in 2016, their performance in 2017 was more variable and concentrated only in a few industries.

Likewise, the yearly increase in national mean monthly wage showed a rising trend from 4.6% in 2015 to 6.8% in 2016 and 8.4% in 2017, but the disaggregated sectoral and industry data revealed significant variation across and within sectors and industries.

Hence, despite the overall economy showing healthy expansion, there was unevenness in growth across sectors and industries, relatively low wage levels and small wage increase in a sizeable proportion of the workforce, and a rising cost of living further exacerbated by escalating property prices and a depreciating currency.

All these appear to fit the puzzle that despite strong economic performance denoted by macroeconomic indicators, a sizeable segment of the society had not actually benefitted from the growth spillovers.



Note: Figure inside each bubble denotes election year

..... Trend line for all election outcomes

..... Trend line excluding 1986 and 1999 elections (outliers)

The relationship between percentage of votes won by the incumbent ruling party and per capita gross national income growth in Malaysia

The discontentment at the lower segment of the income spectrum, combined with those in the middle- and high-income segments who believed that the economy is heading in the wrong direction, could have contributed to the economic voting paradox.

My third question centred on the complexity of economic issues which can arise from three aspects: time, trade-offs and opportunity costs. Importantly, the understanding of complex economic issues and their relative importance in shaping voting decisions depend on the voters' socioeconomic background and educational level.

I found that the type and relative importance of "hot button" economic issues vary across voter groups. Voters are presumed to have considered how the party they support can best address the issues that affect them.

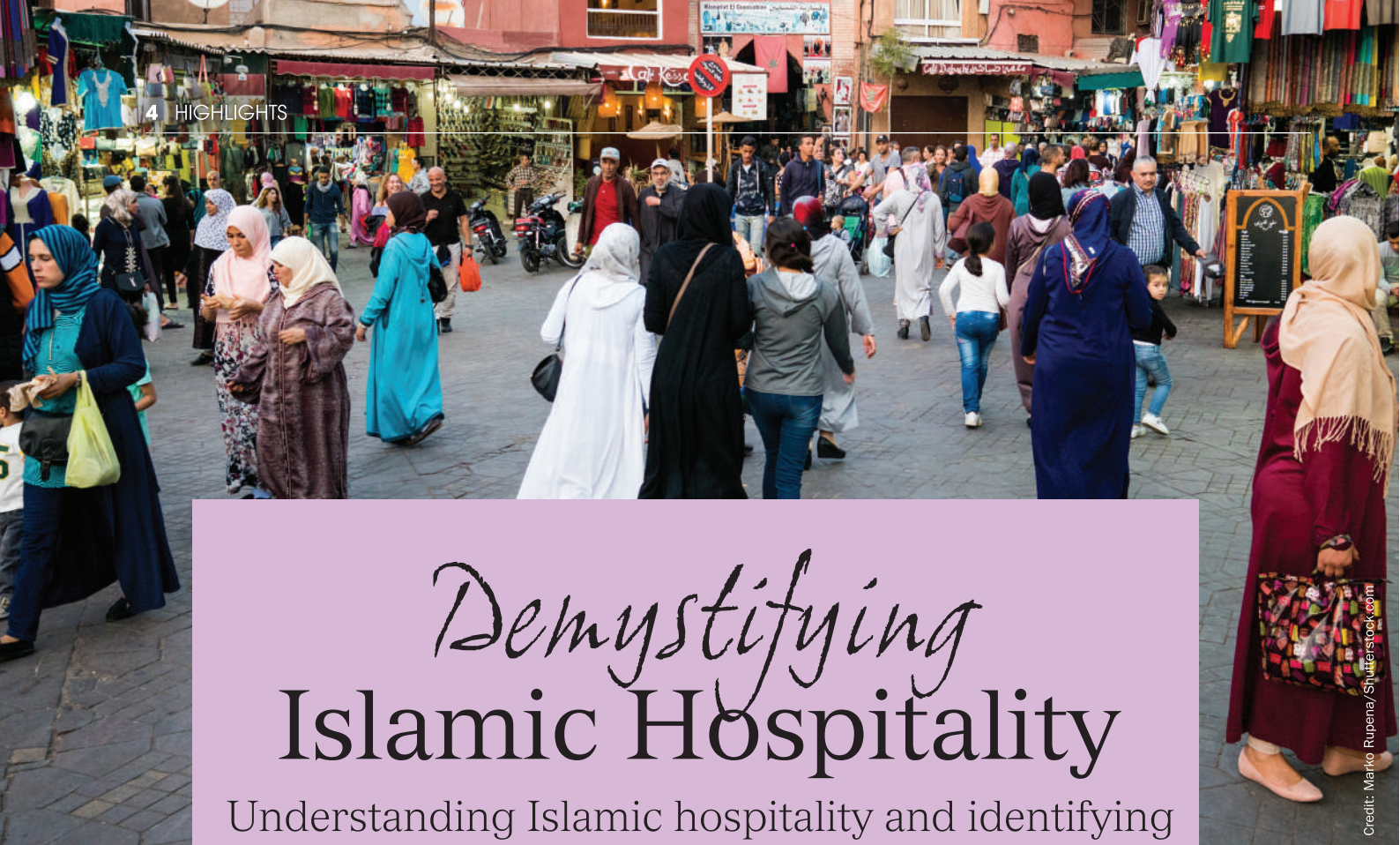
Depending on the voters' level of understanding and concerns, these

issues could range from immediate and local "bread and butter" issues to long-term, national-level country direction and economic security concerns. The complexity of economic issues is not captured by national economic indicators which further augments the economic voting paradox of Malaysia.

I believe future research on the influence of the economy on voter behaviour should be micro-level to take into consideration the strong divergence between national economic performance and on-the-ground realities as well as the complexity of economic issues.

Professor Yeah Kim Leng

Sunway University Business School
 Jeffrey Cheah Institute on Southeast Asia
 Jeffrey Sachs Center on Sustainable Development
 klyeah@sunway.edu.my



Demystifying Islamic Hospitality

Understanding Islamic hospitality and identifying the challenges facing the industry

The global Muslim population totalled 1.6 billion in 2010 and is forecasted to increase dramatically to 2.8 billion in 2050 according to Pew Research Center. In the latter part of this century, Islam is expected to exceed Christianity as the largest religion in the world.

Such demographic changes have partly driven significant research in understanding Islamic forms of tourism and key trends. I have been researching the sociocultural and market dynamics of Islamic hospitality for over a decade and I do believe that this phenomenon is far more conceptually important and relevant than the popular usage of “Islamic tourism”.

Given the plethora of studies concerning Islamic tourism over the past 10 years, there could be misuse and misapplication of “Islamic tourism” in academic circles. While Islamic travel

is commonly related to sacred and auspicious journeys (e.g. the Hajj), the concept of Islamic hospitality has been somewhat mystified due to the populist element of tourism.

Accordingly, the term “tourism” often signifies frivolous and hedonistic activities, which can arguably strengthen our social statuses, self-identities and egos particularly now with social media. Yet, the concept of hospitality is fundamentally about being welcoming and hospitable.

Hospitality is highly embedded within both the Qur’an and the Hadith, symbolising the importance of treating guests well and refraining from self-indulgence. On a rudimentary level, Islam is about being humble and not revelling in ostentatious activities.

Having lived and worked in the Middle East for almost a decade, I have

conducted a historic assessment of Islamic hospitality through examining narratives of past travel writers and historians, particularly within the context of the Middle East where Islam originated from.

The process of indulging guests and greeting them in an almost ritualistic hospitable manner has its origins in the Bedouin Arab communities and pre-Islamic societies. In certain ancient Arab communities, sharing a meal denoted a sense of belonging to host families and groups, exemplifying the informal qualities of hospitality.

However, through the globalisation of tourism, travel and mobility as well as the rise of capitalism and advanced consumerism, hospitality has become more formalised and commercialised in nature, form and process. To some extent, these transformations have taken Islamic

hospitality out of private spaces and places and into commercialised settings and formal contexts.

An “Islamic hospitality industry” has rapidly emerged with the production and consumption of *halal* food and the development and expansion of the Islamic hotel sector (especially in the Islamic world), *halal* restaurants and cafes, and Islamic niche products (e.g. Islamic tourism destinations, *halal* airlines, Islamic cruises and Islamic events).

There is also an increase in organisations responsible for the Islamic legitimisation (i.e. authentication and verification) of *halal* products and services, which is a challenge for *halal* food industries. Globally, there are conflicting perspectives over the “*halalness*” of meat products with differing views on animal slaughter methods. Even different organisations that inspect food within a country have varying views on animal feed, packaging and logistics.

There should be more coherence and standardisation in terms of *halal* certification policies domestically, regionally and internationally, especially to reassure consumers of the legitimacy of the product and to prevent *halal* fraud that has been increasing in non-Islamic countries.

Another challenge in the application of Islamic hospitality is the distinction between Islamic-friendly and Shari’a-compliant hospitality products and services. For example, an Islamic-friendly hotel may not serve alcohol directly to customers but might use desserts with alcohol products or gelatine (which includes pork derivatives).

On the other hand, fully yielding to Shari’a law implies that the design and construction of the hotel would need to consider a number of directives. Washing and toilet facilities, for instance, need to be positioned away from Mecca and all sinks need to be equipped with *halal*-

friendly soap and toilets with a bidet shower or health faucet. There would be options to close off areas for women and families and ensure no artwork depicting human or animal forms nor ostentation is displayed.

Fundamentally, it would be crucial for such hotels to be equipped with clearly defined male and female prayer rooms, markers (*Qibla* stickers) indicating the direction of Mecca, prayer mats, beads (*tasbeih*), and built-in washing facilities.

I have previously worked on interpreting the concept design of a Shari’a-compliant hotel and I believe that in addition to attracting Muslim guests, the objective is also to entice non-Muslim guests interested in seeking authentic and lifestyle-conscious experiences. Such experiences indicate significant latent market demand and the potentiality for non-Muslims to embark on cultural learning experiences.

In line with Islamic ethical and philanthropic principles (e.g. *zakat*), there should be a clear emphasis on social responsibility. In hotels (and restaurants) there should be established food redistribution policies for waste and unused food and directives that facilitate eating practices associated with moderation and consumer value. Having lavish buffets, for instance, may not be aligned with the Islamic directive concerning “modesty”.

While Islamic hospitality needs to be contextualised based on market and consumer demands, the products and services offered must also align with Islamic values and sensibilities. As the Muslim population grows, so too will the demand for Islamic hospitality and, indeed, authentic experiences.

Professor Marcus Stephenson

School of Hospitality

mstephenson@sunway.edu.my



Does Corporate Internationalisation Improve Firm Performance?

Understanding why some international firms thrive while others fail

Many managers understand the importance of international strategy, which refers to a firm's international diversification. In my recent study, I found that for publicly listed firms in the United Kingdom, the proportion of firms with foreign assets grew from 4% in 1990 to 36% in 2016. Likewise, the proportion of publicly listed German firms with foreign assets grew from 2% to 42%.

International strategy is recognised as important and relevant to a firm's success. However, empirical evidence remains inconclusive on whether corporate internationalisation (as measured by the ratio of foreign sales to total sales, the ratio of foreign assets to total assets, etc.) can indeed enhance firm performance (e.g. return on assets).

Why do firms engage in international activities? Some firms have a market-seeking motivation to initiate internationalisation. They face fierce competition or experience stagnation or slow growth in the domestic market and may look to foreign markets for new customers.

Other firms have a resource-seeking motivation; they are searching for cheaper resources and/or a more cost-effective production base to remain competitive. Some firms even venture abroad to seek new knowledge.

Not all firms, however, would successfully manage their internationalisation. Prior results have been mixed—some studies reported a positive effect of corporate

internationalisation on firm performance while others found a negative effect.

Managers must ask themselves two important questions on international strategy. The first question is directed at domestically-oriented firms: will venturing abroad improve performance? Do international firms perform better than domestic firms?

The answer to this question is again mixed. I found that during 1990–2016, international firms (loosely defined as those with foreign sales) in a sample of publicly listed non-financial firms in 27 countries across Europe performed better in terms of profitability than domestic firms. International firms in Asia, however, performed poorer than domestic firms.





Other studies found that in the United States, international firms tend to have lower firm value (i.e. the worth of a firm in the market) than domestic firms. Yet the reverse is true in Japan. In Europe, international firms tend to have better operating performance but lower firm value than domestic firms.

One simple interpretation of these findings is that international strategy may help a firm increase its foreign market revenue and enhance its operating performance, but could potentially reduce the firm's market value in the short-run (due to perceived issues of corporate governance).

The second question is directed at international firms: what is the optimal level of corporate internationalisation? Do firms with higher degrees of corporate internationalisation perform better than those with lower degrees of corporate internationalisation?

Prior studies had documented both positive and negative effects of corporate internationalisation on firm performance. I found that for firms in Europe, an increase in corporate internationalisation is not associated with lower firm value.

However, increases in corporate internationalisation reduced operating

performance in both samples of publicly listed non-financial firms in Europe and in Asia.

Yet, this negative effect was not found at higher degrees of corporate internationalisation, suggesting that firms must build up their international base to a point where the benefits outweigh the costs if they want to benefit from internationalisation.

In my opinion, these mixed findings point to one thing: what matters is not so much whether firms venture abroad, but how they do it.

The liability of foreignness, or the cost of operating outside the home country, is recognised as the main reason many international investments fail. Generally, an international strategy is formulated in such a way to address two conflicting demands: local responsiveness and global integration.

Local responsiveness refers to the customisation of products and/or services to meet the specific needs or preferences of local markets in foreign countries. Global integration refers to how business activities across foreign operations are coordinated.

Prioritising global integration will improve firm efficiency, but at the expense of local responsiveness. However, if there is no difference in taste and preference across markets, then local responsiveness would not be of great concern.

In conclusion, whether firms perform well or poorly as a result of corporate internationalisation depends on their international strategy and execution. A successful strategy involves achieving an optimal trade-off between local responsiveness and global integration and coping with organisational complexity effectively.

Professor Chaiporn Vithessonthi
Sunway University Business School
chaipornv@sunway.edu.my





Audience Participation in *Classical Music*

Introducing the element of chance by allowing the audience to influence a performance

Aleatoric or chance music is music in which an element of the composition or performance is subject to chance. Various forms of chance music have existed in western art music for centuries, becoming something of a staple of modern music in the 20th and 21st centuries.

In the 18th century, one form of chance music involved dice—the composer would create snippets of music that could be performed in a random order depending on the roll of a die.

In more contemporary forms, chance music often involves performers making artistic decisions within parameters established by the composer. Performers

would choose from a list of possible passages or respond to graphic notation that indicates approximate pitch or timing.

During the 1950s and 1960s, a new art movement known as Happenings took place. The movement involved arts performances in which members of the audience were sometimes required to participate, often including elements of chance to influence the performance.

In music, “audience participation” can be interpreted in various ways but for this discussion, it refers to the intentional use of audience participation to meaningfully

influence a performance. As such, the performance of a particular piece would be different each time it is presented.

One of the most influential musicians during the Happenings movement was John Cage, who hosted a 1952 event that involved poetry, dance, visual arts, recorded music and a barking dog.

Cage’s most well-known piece “4’33” premiered in 1952 and involved a musician sitting onstage for 4 minutes and 33 seconds without playing a single note. Instead, ambient noise and sounds from the unsuspecting audience—whispers, coughs, etc.—make up the music.

Cage's 1969 piece *33 1/3* involved more overt audience participation. In this piece, 24 turntables and hundreds of records were placed around the performance space without any chairs. Members of the audience were invited to choose any of the records and play it on the turntables with the resulting outcome constituting the performance.

The unconventional works of Cage revolutionised modern music, with more pieces of a similar nature following. In 2008, David Brian Williams and Tayloe Harding composed *Grassroots*, a multimedia piece that involved live performance, technology and audience participation.

Divided into four sections, the musicians performed an interlude before each section accompanied by computer audio and images projected on a screen. Following each interlude was a series of multiple-choice questions related to the 2008 United States presidential campaign. Audience members were asked to answer those questions using a response clicker (something like a television remote with buttons for options A, B, C, D and E). The audience's aggregate response

to these questions determined the subsequent music of each section.

I became intrigued by the idea of involving audience members in performance after experiencing a performance of *Grassroots*. With this idea in mind, I composed *Time Zones* (2010) which involves a three-way interaction: musician–computer–audience.

Representing a typical day in an academic musician's life, *Time Zones* includes six sections corresponding to teaching, administrative duties, composition, performance, music technology and family respectively. Each section includes a trombone part—to be performed live—in sync with sequenced computer music embedded in a projected animation.

Time Zones serves as a metaphor for modern life, in which our plans are frequently interrupted by unplanned demands of our time, interruptions often delivered through technology. The six sections represent the pre-planned “time zones” of one day.

Unplanned demands are represented by a seventh section that is triggered by the ringing of the performer's cell phone. The cell phone number is visible on the

screen throughout the performance and audience members are encouraged to call whenever they wish.

While the call will go unanswered, the ringing will cause the performer to immediately change his or her tune and jump to the seventh section. Following this, the music picks up where it left off and the performer continues working through his or her daily “time zones”.

Time Zones is an example of allowing the audience to meaningfully influence a performance, but I do agree that the influence is limited.

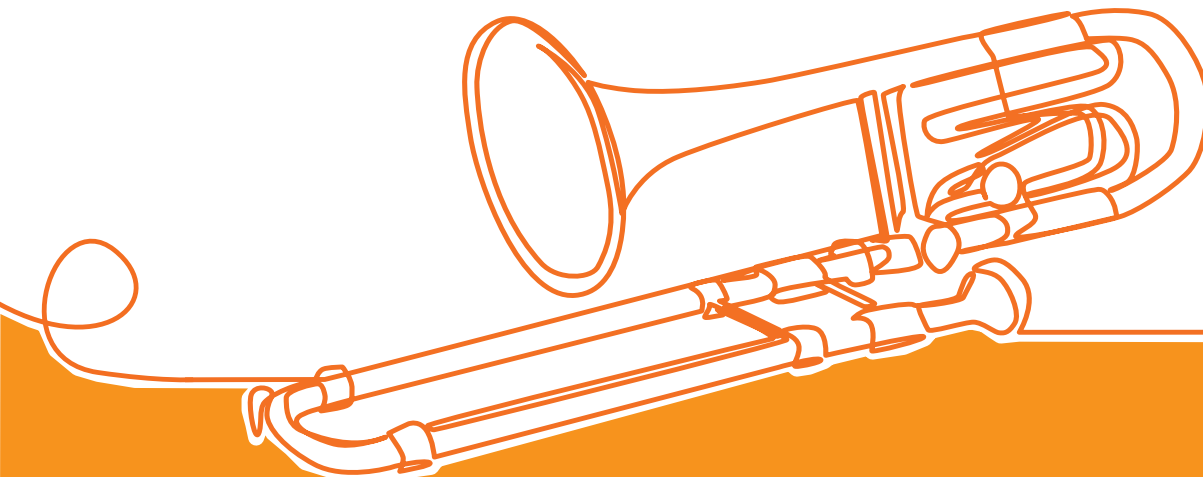
Since *Time Zones*, I have continued to explore audience participation in other contexts through later compositions, sometimes involving audience members to read texts, hum or make real-time musical choices.

A video of the premiere performance of *Time Zones* can be found at donbowyer.com/time-zones.

Professor Don Bowyer

School of Arts

dbowyer@sunway.edu.my





The Power of Music

Exploring the world from behind a trombone

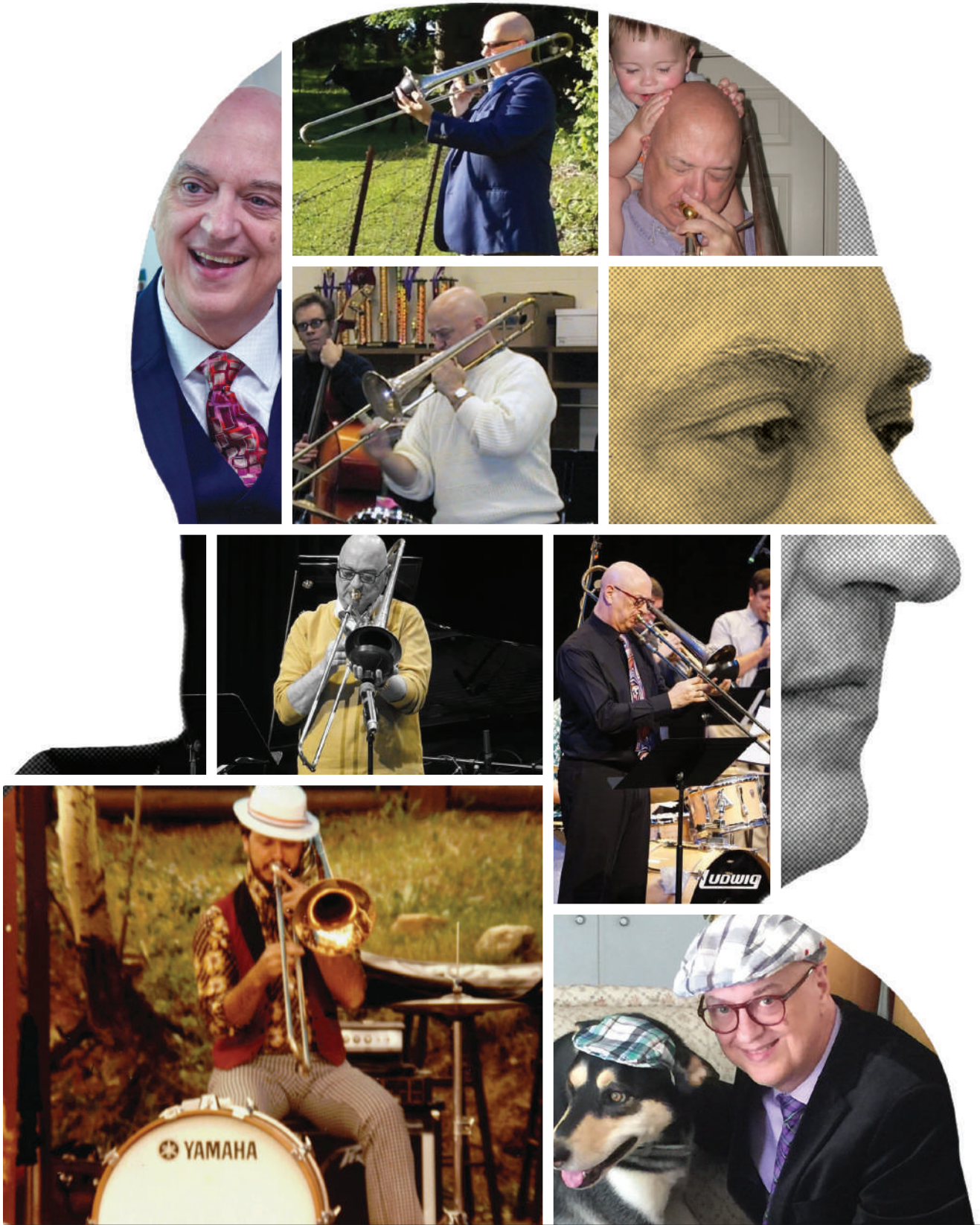
In 1994, I was playing the trombone on the main stage in a cruise ship somewhere on the Caribbean Sea. I was playing with the 5th Dimension, a pop/soul/R&B band that had its biggest hits almost 30 years earlier.

While performing, I was flooded with emotion from a long-lost memory.

Most people have many memories from their childhood but not me. In fact, I have almost none from before my mother died in 1969, when I was 10 years old.

As we played the band's 1967 hit *Up, Up and Away*, I suddenly remembered being home with my mother while that song played on our stereo. We were both singing along while I ran around the room holding a blanket over my head, pretending it was a balloon.

This memory had been obviously buried in some corner of my mind for many years, but music was able to bring it out. This is the power of music.



My mother earned a Master of Arts degree in music from Northwestern University in the 1950s, and regularly sang or played piano with her church choir. When I was a budding high school jazz musician, I found her record albums in the basement.

I was surprised to discover that she had a very hip collection for a Methodist preacher's wife, including original issues of two classic albums by Dave Brubeck. This led to another special moment in performance when I played with Dave Brubeck and the Cheyenne Symphony Orchestra in a 1986 concert.

My mother passed away when I was in the fifth grade, which at that school was when children chose an instrument to play if they wanted to join the school band in sixth grade. I do not remember whether this decision was made before or after she left us, but I do remember being told that the family already had a trombone in the attic so I should play that. To this day, I do not know why we had that horn in the house.

Both of my brothers (I was in the middle) also played in school bands, though neither went on to pursue careers in music.

In my case, a Bachelor of Arts in Music at a small school in West Virginia

led immediately to a Master of Arts in Music at a large university in Los Angeles. My goal then was eventually to work as a freelance studio musician in the film and television industry.

When I left Los Angeles to play in a travelling band in 1982, my plan was to return within a year or two. I even left furniture with friends.

Instead, I went from one road band to another and ended up starting a Doctor of Arts in Trombone Performance and Jazz Pedagogy at the University of Northern Colorado. I soon became interested in music technology, composition and performance and over time, these became the three areas of my research-creation activities.

My interests in music technology lie in the field of computer-assisted instruction in music, particularly in regard to Internet delivery and hand-held devices.

For my doctoral dissertation, I created *Dolphin Don's Music School*, an educational computer game that teaches music theory and ear training for children. This programme has been used in at least 120 countries.

As a composer, I have published more than 60 pieces of music in western classical and jazz styles, including works for orchestra, choir, jazz band, wind band,

chamber ensembles and soloists. These works have been performed and recorded by professional musicians around the world.

In 2015, I was one of the first United States citizens to record music legally in Cuba in more than 50 years when my Latin jazz piece *Bugs and Gas* was part of a Parma Recordings project involving eight compositions selected from more than 200 submissions.

As a trombonist, I have performed as a bandleader, a soloist and an orchestra member in more than 40 countries on six continents. I am still hoping to book a performance in Antarctica!

I spent five years playing the trombone on 11 cruise ships that travelled across the Caribbean Sea, the Mediterranean Sea and the Gulf of Alaska. The first 10 of these did not sink.

In 1998, four years after my performance with the 5th Dimension, I was back on the same ship when it struck a reef and sank to the bottom of the St. Maarten harbour. That is another story readers can find at donbowyer.com/aground.

Professor Don Bowyer is Professor of Music and Dean of School of Arts at Sunway University.

Getting the bear facts

High human impact, a critical lack of knowledge and too few conservation efforts threaten the future of Asian bears



Few species evoke as much fascination, amusement and attraction as do bears. Through much of our history, bears have held a special significance—from the comforting presence of a child’s teddy bear to symbols of power, protection and untamed nature in modern societies and countless indigenous cultures.

Bears belong to Order Carnivora, a group of mammals with a flesh-eating ancestry. Not all modern carnivores, however, are committed flesh eaters. This very diverse group, which includes civets, otters, tigers and jackals to name a few, has species that also include insect or vegetable matter in their diets.

Peninsular Malaysia contains possibly the greatest number of native Carnivora species in tropical Southeast Asia, and more than half are globally threatened or near-threatened. In fact, many carnivore populations across the globe are threatened.



Sun bear (Credit: Wong Siew Te)



Female sloth bear with cub (Credit: Jon E Swenson)

Why are carnivores threatened with extinction? Species like bears, tigers and leopards are prime targets for poachers seeking valuable body parts or trophies. Compared to the population sizes of species that feed on plants, carnivores are fewer in number and reproduce slowly and hence, recover slowly from population decline.

My colleagues and I analysed data on different species of carnivores across Peninsular Malaysia, using records spanning 1948–2014 to identify hotspots with high concentrations of threatened carnivores. We found two hotspots that overlapped with two of the peninsula's largest forest blocks: Taman Negara and Belum-Temenggor.

Even more interesting was the scarcity of reports of those same species in Selangor and adjacent Pahang, where greater numbers of people live and where patches of forests are smaller and more fragmented. These findings suggest that bears and many other carnivores do not

persist in areas where forests have been depleted and the landscape greatly altered.

My research interests are mainly on the behaviour and ecology of wild carnivores and how they respond to habitat loss. Why do many carnivores, including bears, not survive in altered habitats or where human densities are high? The answers to this may be a combination of factors.

Altered habitats could mean that an agricultural or urban landscape has reduced a once large forest into several smaller patches. Conflicts with humans increase because carnivores raid crops and livestock to survive, and because the opportunities to do so increase.

Altered habitats could also mean more roads and other types of human infrastructure, which in turn imply easier access for poachers and the greater risk of wild animals being hit by vehicles.

I have worked with carnivores for many years, especially two species of tropical



Sloth bear perched on rock (Credit: Tony Nadaraja)



Sloth bear in the wild (Credit: Tony Nadaraja)



Asian bears—sloth bears and sun bears. They are the least studied of all the bear species and more research is needed to guide their management.

Bears are sensitive to habitat loss and overhunting, and tropical bears of Asia are among the most threatened of the world's bears. Few environments in the world experience as much pressure from growing human populations and rapid economic development as tropical Asia.

Sloth bears (*Melursus ursinus*) are found in the typically dry or semiarid forests of the Indian subcontinent. They spend most of their time foraging on the ground for termites, which are an important part of their diet. These bears are specially adapted for breaking into hard termite mounds and feeding on termites using suction.

Generally secretive and associated with forests remote from settlements, sloth bears have a fearsome reputation among rural people with the highest

number of reported attacks on humans of any bear species. Although now legally protected, their tendency for aggression makes sloth bears prone to persecution and retaliatory killing.

My team and I conducted the first focused study on sloth bears in Sri Lanka. The north and east regions of Sri Lanka had been closed to the public for over 25 years due to the civil war which ended in 2009. In 2004, a temporary ceasefire allowed us to gain access to these regions with the help of the Sri Lankan military and permission from Tamil guerrillas.

Conducting ground surveys for bears was not feasible as forests were mined, but we collected data by interviewing local villagers and hunters. This allowed us to construct a model that could predict likely habitat for sloth bears given particular landscape conditions. We recently applied this model using contemporary land-use data to see whether and where sloth bear distribution had changed since the early 2000s.

At the moment, I am working with my students on the Malayan sun bear (*Helarctos malayanus*), the smallest of the world's bear species. Sun bears inhabit the warm, humid rainforests of Southeast Asia, including Borneo and Sumatra. Unlike sloth bears, sun bears are highly arboreal.

They are expert climbers with strong powerful claws capable of ripping into tree trunks to reach hives of stingless bees. They have a very long tongue for a bear, which perhaps helps to reach into crevices of excavated nests to get at the honey and protein-rich larvae. Trees afford safe refuge from predators, which is probably why sun

bears rarely attack people and generally flee in threatening situations.

We are testing and refining non-invasive methods to collect genetic samples from wild sun bears. Collecting genetic samples non-invasively, for example with hair traps, eliminates the need to capture and handle bears.

Genetic samples are important as they can tell us if a population of sun bears is isolated or connected with other sun bear populations. Isolation increases the chances that bears will disappear altogether at a given site. The remedy is to establish and protect suitable movement corridors.

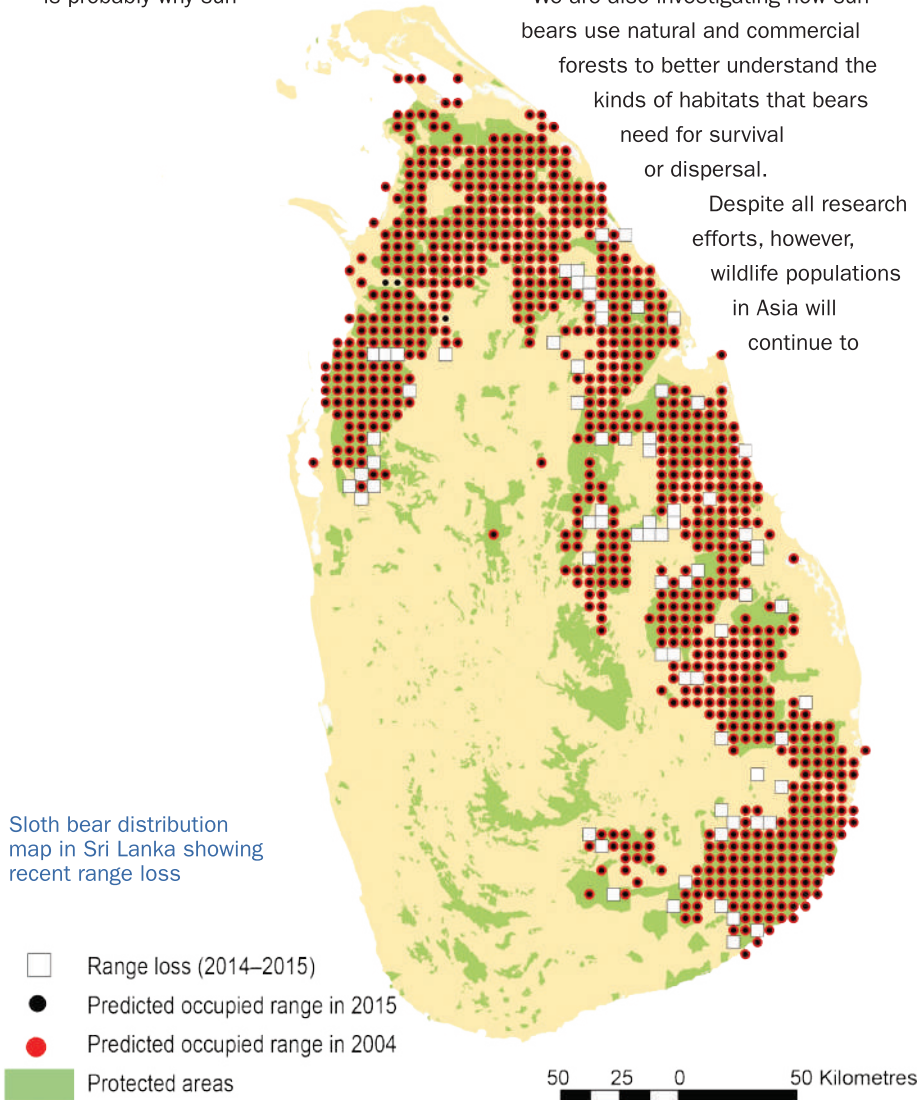
We are also investigating how sun bears use natural and commercial forests to better understand the kinds of habitats that bears need for survival or dispersal.

Despite all research efforts, however, wildlife populations in Asia will continue to

decline unless there is a major shift in how governments and the public perceive ecosystem health as a crucial part of our economic growth. The lives of bears and humans are more closely linked than we realise. Forests are crucial for bears to survive. Those same forests regulate climate and provide us with clean water, clean air and many other benefits we take for granted.

The International Union for the Conservation of Nature listed sloth bears and sun bears as "Vulnerable" to extinction more than a decade ago, citing forest loss, poaching and conflict with humans as the main threats to these species. Nevertheless, Malaysia reportedly had the highest rate of forest loss of any nation between 2000 and 2012, despite decades of growing international concern about the conversion of rainforests to oil palm in Southeast Asia.

In Sri Lanka, occupied sloth bear habitat has declined by 8% since the early 2000s, and range loss is mainly on the periphery of "protected areas" reflecting



Sun bear resting on a tree (Credit: Assoc Prof Dr Shyamala Ratnayeke)



A sedated sun bear with a missing front paw, evidence of a previous snare injury, captured as part of an ongoing scientific study at Krau Wildlife Reserve (Credit: Wong Siew Te)

human encroachment into habitat intended for wildlife.

Possibly more insidious and harder to control is the extent of poaching and illicit traffic in wildlife body parts in Southeast Asia. A 2016 TRAFFIC report ranked Malaysia fourth in the illegal trade of bear paws and bear gall bladders, both of which have high commercial value in Asian cuisine and traditional Chinese medicine.

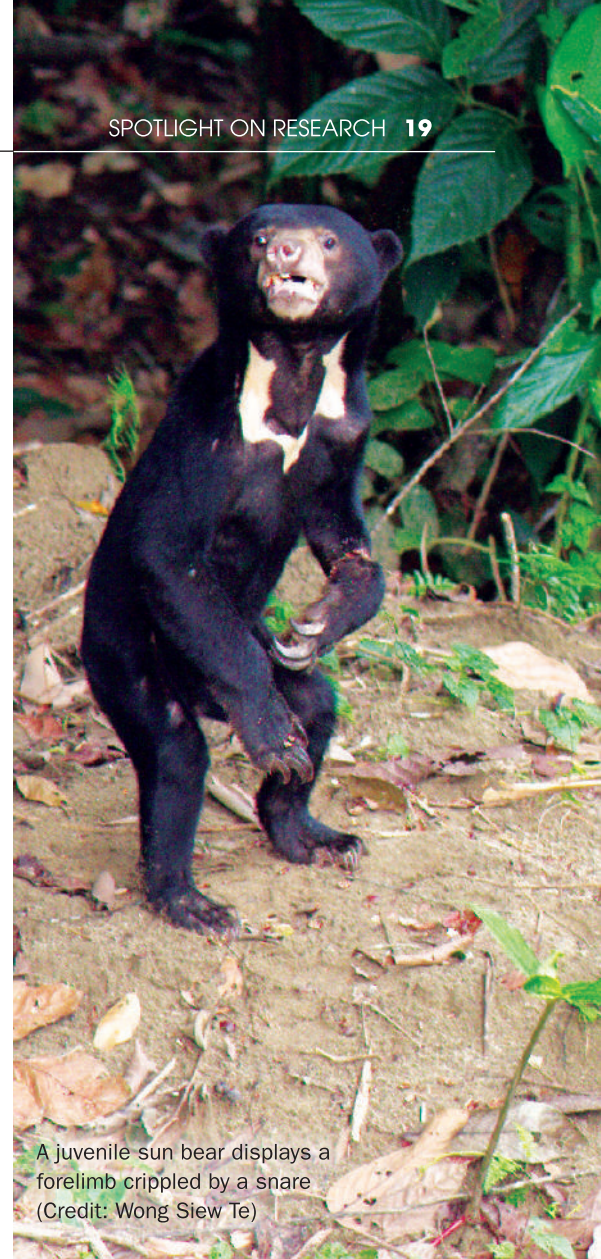
Poaching for meat and valuable body parts is a menace to wildlife in

Southeast Asia. Bears and other threatened species lose lives and limbs in snares set by poachers.

Recently, methods have been developed to identify where threats of poaching might be greatest and to quantify the effects of poaching on wildlife distributions. Whether these will improve capacity to effectively combat poaching on the ground will need commitment and coordinated efforts by governments and conservation organisations. For some species, it will be too little too late.

In tropical Asia, we have suspected for decades that carnivore populations were declining, yet there is a critical lack of knowledge of population sizes, population growth trajectories and local threats to most of these species. There is also a critical lack of capacity, coordination and political will to protect wildlife habitats and curb the illegal harvest of wildlife.

Our knowledge about bears and other wildlife needs to improve, but so must on-the-ground conservation efforts. In Western Europe and North America, bear populations have expanded as a result of science-based management,



A juvenile sun bear displays a forelimb crippled by a snare (Credit: Wong Siew Te)

public support and effective policies. To me, this signifies hope and proof that economic growth and bear conservation are not necessarily at odds with one another.

Associate Professor Dr Shyamala Ratnayeke

School of Science and Technology
shyamalar@sunway.edu.my



External Grants Received in 2019

Dr Yong Min Hooi and her team secured RM2.47 million worth of funding under LRGS from the Ministry of Education Malaysia

Prof Yau Kok Lim, Dr Yong Min Hooi, Assoc Prof Dr Chua Hui Na, Dr Teh Pek Yen, Dr Yow Yoon Yen, Dr Choock Jack Bee, Dr Ronald Teow and **Prof Mohamed Ariff** received a total funding of RM853,762 under FRGS from the Ministry of Education Malaysia

Prof Glenda Crosling and her team received RM832,385.47 worth of funding from the British Council

Prof Mohammad Khalid and team were awarded a grant of £70,000 under the British Council's UK-China-BRI Countries Education Partnership Initiative

Dr Michelle Lee was part of the winning team to receive the MY-RGS funding worth RM250,000 from the Malaysian Research University Network

Dr Yong Min Hooi and her team received a grant of RM212,045.60 from the Arts Humanities Research Communities

Assoc Prof Dr Lau Sian Lun received a Finnish National Agency for Education Asia programme project funding worth €16,000

Dr Jane Gew and **Prof Mohammed Kheireddine Aroua** received a grant worth RM66,000 from the Hubert Curien Partnership-Hibiscus (PHC-Hibiscus) France-Malaysia

Dr Tan Ai Ling received a grant worth RM47,000 from the Malaysia Convention & Exhibition Bureau

Prof Abhimanyu Veerakumarasivam received a grant worth RM35,002 from the International Science Council

Karen Chand received a grant worth RM33,600 from the Sustainable Development Solutions Network

Matt van Leeuwen received a contract research grant worth RM30,000 from Sunway Lagoon Sdn Bhd

Assoc Prof Dr Mayco Axel Santaella received a grant worth RM25,000 from Sunway Berhad

Assoc Prof Dr Angela SH Lee and her team received a contract research grant worth RM15,000 from Sunway Berhad

Prof Poh Chit Laa received a contract research grant worth RM12,000 from Surfacetech Sdn Bhd

Dr Ooi Pei Boon received a grant worth RM5,000 from Digi Telecommunications

Dr Elizaveta Berezina received a grant worth RM4,539 from Stockholm University, Sweden

Professorial Lecture Series

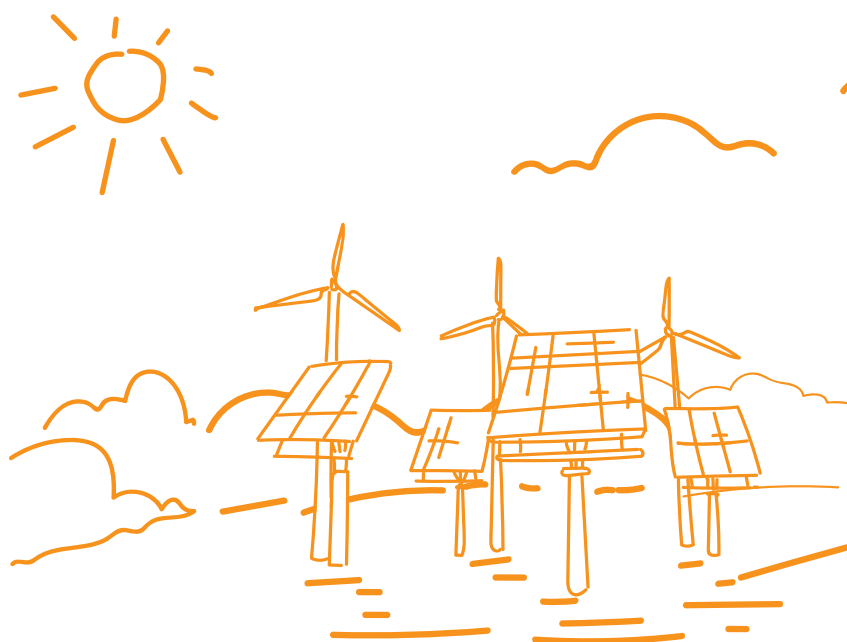
The series showcases original research by Sunway's academics devoted to forging new grounds in their areas of expertise.

Energy from the Sun Role of Nanotechnology

by Professor Saidur Rahman
31 October 2019

This professorial lecture explored the application of nanotechnology in converting solar energy to useful energy and its various challenges. Solar energy is abundant and clean, but conversion efficiency is very poor as most of the incident radiation turns into waste heat. With the use of nanomaterials, this waste heat can be converted into useful energy as nanomaterials possess unique thermal, electrical, optical and chemical properties compared to traditional bulk materials. Some unwanted radiation can also be filtered using pertinent nanomaterials. However, nanomaterials tend to sediment causing some negative impact on their energy performance applications.

This issue can be overcome with the additional treatment of nanomaterials and achieving an improvement in efficiency of 3–5% can be expected as well. Since solar energy is intermittent like other renewable energy sources, nanotechnology can also potentially store energy to be used later; some nanomaterials have been found capable of high energy storage. The lecture also looked at recently invented nanomaterials and their potential applications.



THE LAUNCH OF FUTURE CITIES RESEARCH INSTITUTE



Sunway University and Lancaster University have jointly established the Future Cities Research Institute (FCRI) with a shared aim to tackle sustainability and urbanisation challenges head-on. With a focus on three broad themes—Digital Cities, Sustainable Cities and Liveable Cities—the multidisciplinary research at FCRI will complement the work of the Jeffrey Sachs Center on Sustainable Development in shaping the agenda for future city development. Sunway City, certified as Malaysia’s first sustainable township by Green Building Index Malaysia, will serve as a living laboratory for FCRI researchers. The Institute was officially launched on 25 July 2019 by Tan Sri Dato’ Seri Dr Jeffrey Cheah AO, Chancellor of Sunway University and the Right Honourable Alan Milburn, Chancellor of Lancaster University.

Notable Mentions

Research and academic achievements in 2019



Prof Mayeen Uddin Khandaker received a Certificate for Most Valued Reviewer of 2018 for *Radiation Physics and Chemistry* journal by Elsevier

Dr Chandrajit Lahiri visited Dana Farber Cancer Institute and VA Boston Medical Centre of Harvard Medical School, Boston, USA



Dr Kavita Reginald won first prize for her poster presentation at the 19th Malaysian Congress and Exhibition on Allergy and Immunology



Prof Mohammad Khalid and Dr Abdul Khaliq Rasheed won the Gold Medal at ITEX 2019



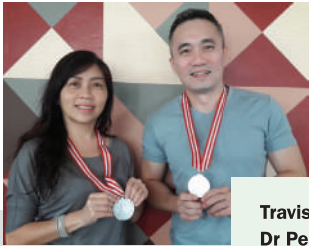
Dr Yow Yoon Yen was awarded Outstanding Woman in Science (Biotechnology) 2019 at the Venus International Women Awards

January **February** **March** **April** **May** **June**

Prof Patrick Siau led the Malaysia National Pastry Team to victory at the World Pastry Cup 2019



Dr Babu Ramanathan received the 2019 Outstanding Abstract Award at ICIC & ISAAR 2019



Dr Michelle Lee and her student bagged the Best Paper Award for the "Organisational Behaviour and Human Resource Management" category at AAMC 2019

Travis Liew and Dr Perline Siek won Silver Medal for their piece "Bowl-Shaped Eco-Meal Box" while **Dr Perline** also won Bronze Medal for "Modernized Feng Shui's Decoration Art" at AICAD IID 2019



Prof Mohamed Kheireddine Aroua was recognised as 2018 Highly Cited Researcher at MRSA & Pengiktirafan Jurnal Creme 2019 Ceremony

Dr Adarsh Kumar Pandey won Best Presenter and Best Paper at SIET 2019

September **October** **November**

Prof Mohamed Kheireddine Aroua and his team were awarded Overall Winner for Food and Beverages Category and First Place for Food and Beverages—University Category at Selangor R&D and Innovation Expo 2019



Christine Shobana Arthur received Best Paper (First Runner Up) Award at ICERP 2019

The **IEEE International Symposium on Haptic Audio-Visual Environments and Games** was held on the 3rd and 4th

Prof Mohamed Kheireddine Aroua and Prof Saidur Rahman were recognised as Highly Cited Researchers for the second year running by the Web of Science Group

The **1st Euro-Asia Conference on CO₂ Capture and Utilisation** was held on the 6th and 7th

The **1st Malaysia Applied Behaviour Analysis Symposium** was held on the 16th and 17th





Chef Chong Wei Tzeh won Silver and was placed 2nd Runner Up for the battle of the Asian Pastry Chef of the Year 2019 at the Global Pastry Chefs Challenge (Asia Selection)



Chef Lee Han Ying and her students emerged as Champions at the Potatoes USA–Malaysia Junior Chefs Challenge 2019

Dr Kamelia Chaichi won Best Paper Award at ICoHOTH 2019



Graphene and Advanced 2D Materials Research Lab was launched in 2019

The **21st Malaysian Finance Association Conference** was held on 31st July and 1st August

Dr Jason Cheok, Dr Joyce Nga and Assoc Prof Dr Lau Sian Lun were awarded the 2019 Jeffrey Cheah Scholars-in-Residence scholarship

July

August

ASymposium was held on the 24th



Dr Abdul Khaliq Rasheed won Best Presenter Award at ICAME 2019

Assoc Prof Dr Angela SH Lee won Best Paper Award at SCDS 2019

Dr Jane Gew was awarded the SSHN Scholarship for Young Researcher from the Malaysia France University Centre, Embassy of France



Azrain Arifin and Padma Pillai were awarded Best Presenters in separate sessions at ICEEL 2019

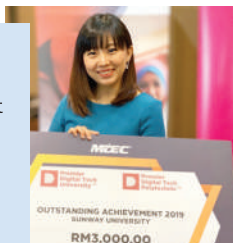


Dr Pauline Leong launched her book *Malaysian Politics in the New Media Age: Implications on the Political Communication Process*



December

Assoc Prof Dr Angela SH Lee received the Outstanding Achievement Award for Best Paper in Data Science Research at MDEC Premier Pride Challenge 2019



Dr Yong Min Hooi, Prof Saidur Rahman, Dr Ayaz Anwar and Dr Hassanudin Mohd Thas Thaker received awards at the Vice-Chancellor's Research Award 2019



Prof Mohamed Ariff and Prof Yeah Kim Leng launched their book *Malaysia's Taxation System: Contemporary Practices, Issues and Future Direction*

Research Directory

Centre for Biomedical Physics

Professor David Bradley
dbradley@sunway.edu.my

Centre for Higher Education Research

Professor Glenda Crosling
glendac@sunway.edu.my

Centre for Research-Creation in Digital Media

Professor Harold Thwaites
haroldt@sunway.edu.my

Centre for Virus and Vaccine Research

Professor Poh Chit Laa
pohcl@sunway.edu.my

Graphene and Advanced 2D Materials Research Group

Professor Mohammad Khalid
khalids@sunway.edu.my

Research Centre for Carbon Dioxide Capture and Utilisation

Professor Mohamed Kheireddine Aroua
kheireddinea@sunway.edu.my

Research Centre for Crystalline Materials

Professor Edward RT Tiekink
edwardt@sunway.edu.my

Research Centre for Nano-Materials and Energy Technology

Professor Saidur Rahman
saidur@sunway.edu.my

Jeffrey Cheah Institute on Southeast Asia

jci@sunway.edu.my

Jeffrey Sachs Center on Sustainable Development

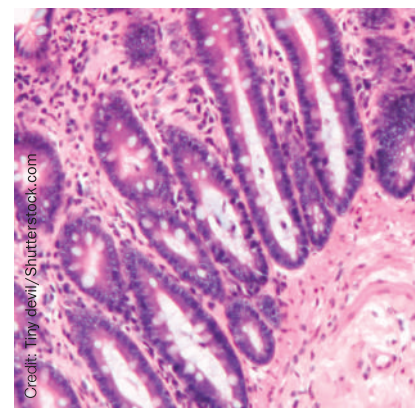
jsc@sunway.edu.my

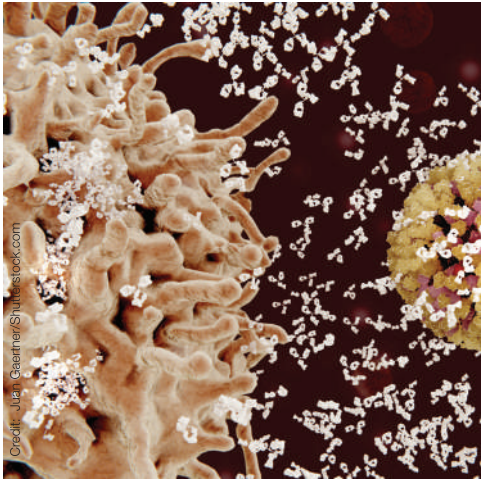
Sunway Innovation Labs (iLabs)

innovationlabs@sunway.edu.my

Sunway R&D Sdn Bhd

rnd@sunway.edu.my

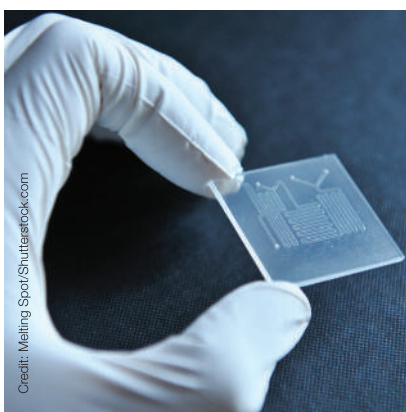




Credit: Jiah Baathar/Shutterstock.com



Credit: Lee Wei Jun/Shutterstock.com



Credit: Meiting Spot/Shutterstock.com



SUNWAY UNIVERSITY



Partner of



University of the Year by The Times and
The Sunday Times Good University Guide 2018

World's largest hospitality education institution



United Nations' chosen destination
for Sustainable Development Goals in Asia



Southeast Asia's independent
public policy think-tank



Malaysia's Innovation Lab
created for student entrepreneurs

In collaboration with

CAMBRIDGE
UNIVERSITY

HARVARD
UNIVERSITY

OXFORD
UNIVERSITY

UNIVERSITY OF CALIFORNIA
BERKELEY



A CLASS ABOVE



Jeffrey Cheah
Foundation 
Nurturing the Seeds of Wisdom

SUNWAY UNIVERSITY DU025 (B) A member of Sunway Education Group
No.5, Jalan Universiti, Bandar Sunway, 47500 Selangor Darul Ehsan.

university.sunway.edu.my