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## 7th AC21 Student World Forum

"Urban Sustainability under the Covid-19 Attack"

July 18th-July 31st, 2022

Organizer: Nanjing University

th AC21 Student World Forum will be virtually held on 18-31 July, 2022 by Nanjing University in collaboration with the AC21. This year's theme is "Urban Sustainability under the Covid-19 Attack", which has targeted SDGs (UN SDG 3 and 11, Good Health and Well-Being/ Sustainable Cities and Communities). This program will be led and delivered by NJU faculty who are experts in this field. Other speakers include representatives from UN-Habitat and international partners of NJU.

This year, Nanjing University will celebrate its 120th birthday and it



will be especially pleased for us to welcome students from AC21 members to join the event and witness the new chapter of this century-old higher education institution.

By surveying and sharing performances of different cities before, during (and after) the pandemic, students can expect to learn about: the diversity of cities in the world and their different performances to fight against COVID-19; systematic factors (e.g. physical, governmental, cultural) joining together in the performances; the holistic synergy rather than quality of individual factors that determines the quality of performances; understanding such contextuality/diversity of holisticity. It is an excellent opportunity for your students to gain a valuable cooperative learning experience with peers from other countries and to develop deeper understanding of urban sustainability from world renowned academics.

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# TENTATIVE PROGRAM FOR 7<sup>TH</sup> AC21 STUDENT WORLD FORUM 2022

Theme: Urban Sustainability under the Covid-19 Attack

Day	Program	Host	
1	Openning & Team building (16:00-18:00)		
	Ice-breaking/Orientation	School of Architecture & Urban Planning, NJU	
	Project introduction, team building		
2	Lectures about Urban Sustainability and Evaluation (16:00-18:00)		
	Lecture 1: Sustainability and urban sustainability: basic concept, do- mains and evaluation	Prof. Hongyang WANG, School of Architecture & Urban Plan- ning, NJU	
	Lecture 2: UN-SDGs: the making and the process around the world	Bruno Dercon, Senior Human Settlements Officer, UN-Habitat Regional Office for Asia and the Pacific	
	Discussion		
	Lectures about the Influence and Response to COVID 19 (16:00- 18:00)		
3	Lecture 3: Mental Health in the General Chinese Population during the COVID-19	Faculty from School of Social and Behavioral Sciences, NJU	
	Lecture 4: Individuals' Self-management in the Post-COVID-19 Every- day Life	Dr. Wenzheng SUN,School of Journalism and Communication, NJU	
	Discussion		
	Experience from Different Cities (16:00-18:00)		
	Lecture 7: Urban sustainability under the COVID 19 attack: experience from France	Prof. Jean-francois Doulet, SFC (Sino-French Center)	
4	Lecture 8: Urban sustainability under the COVID 19 attack: experience from Israel	Prof. Pnina Plout, Faculty of Architecture and Town Planning, Technion, CIPIC(China-Israel Planning Inovation Center)	
		Prof. Amnon Frenkel, Faculty of Architecture and Town Plan- ning, Technion, CIPIC(China-Israel Planning Inovation Center)	
5	Team work : Field trip, cloud field trip & discussion       Student teams		
6	Team work : Field trip, cloud field trip & discussion Student teams		
7	Preliminary Results Presatation and Discussion (16:00-18:00)	Prof. Jianxi FENG, School of Architecture & Urban Planning, NJU	
	Efforts Made by the UN Habitat (16:00-18:00)		
8	Lecture 7: Shanghai Award and the indexs	Rong Yang, Project Leader, UN-Habitat "Shanghai Award" Project, Officer-in-Charge of Regional Programme Division	
	Discussion joined by NJU Faculty		
	Lectures from World-Renowned Scholars (16:00-18:00)		
9	Lecture 8	David Harvey (tentatively)	
	Discussion		
10	Team work: supplimentary filed trip & discussion	Student teams	
11	Team work: supplimentary filed trip & discussion	Student teams	
	Team Presentation Competition & Discussion		



#### Program highlights :

- Well-designed theme targeting SDGs (UN SDG 3 and 11)
- Close academic links with UN-Habitat
- Team building, plenary online lectures, international + local teamwork, plenary online presentation
- · Rich cultural experiences with virtual & in-person activities
- Enhancing students' **comprehensive competences** in academic learning, practices, cross-cultural communication and collabo ration.

Here is the summary of program information:

Dates : July 18th-July 31st, 2022

Theme : Urban Sustainability under the Covid-19 Attack **Requirements:** Undergraduate students, no major limits, certain English proficiency requirements for non-native English speakers (IELTS 6/TOEFL ibt 80/CET4 550/CET6 520) **Registration Fee:** Waived for nominations from AC21 members

The program is designed and led by Prof. Hongyang Wang and Prof. Jianxi Feng, from School of Architecture and Urban Planning, Nanjing University. Here is the brief introduction of the two academics:

Dr. Hongyang Wang is a professor in urban planning and design at School of Architec- ture and Urban Planning, Nanjing University (NJU), China. He is the Co-Director for NJU-University Paris-Est Creteil Sino-French Centre for Urban, Regional and Planning Studies, and China-Israel Planning Innovation Centre. Prof. Wang is a leading Chinese theorist in planning philosophy and methodology. He has also justified his theory in over 30 strategic, master and regional plans he chaired for cities and regions in eastern, middle and western China, with many of his plans awarded prizes including the 2012 ISOCARP Awards for Excellence. He was the Chinese chair for EU FP7 project Eu- rope-China Urban and Regional Bi-continental research Scheme (FP7-230824 ECURBS), a member of UN-Habitat Expert Group to prepare the International Guide- lines on Urban and Territorial Planning for HABITAT III, the General Rapporteur for the 53rd ISOCARP Congress "Smart Communities" (Oct 24-27, Portland) and a China- USA Fulbright Scholar 2019-2020.
<b>Jianxi Feng</b> is an associate professor in the School of Architecture and Urban Planning at Nanjing University. His primary research interests focus on health city, el- derly-and child-friendly built environment and the related behavior. As first and corre- sponding author, Jianxi has published more than 30 articles in peer-review journals in English and Chinese. He has hosted two grants funded by National Natural Science Foundation of China and several research programmes of Provincial and Ministerial level. He now serves as the vice director of the China-Israel Planning Innovation Center of Nanjing University.

School of Architecture and Urban Planning of Nanjing University is actively engaged in international academic exchanges. An extensive international academic network and a long-term cooperative mechanism have been established between the school and prestigious universities and institutions around the global. In 2007, the Sino-French Centre for Urban, Regional and Planning Studies (SFURP) was jointly founded by Nanjing University and the University Paris XII Val de Marne. In 2012, the University of Cambridge–Nanjing University Research Centre on Architecture and Urbanism (CNRCAU) was jointly founded as a platform to conduct innovative and multidisciplinary research on contemporary architecture and urbanism. In 2015, the Nanjing University - Syracuse University International Center for Green Building and Urban Environment was jointly founded for research in sustainable building technology. The school also co-founded the China-Israel Planning Innovation Center with Israel Institute of Technology.

Please visit our website for more details about the SWF: https://stuex.nju.edu.cn/en\_/9d/44/c23301a564548/page.htm

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## Special Project Fund <Report 1>

"Natural Products for Healthy Ageing: from Molecular Targets to Therapy"





he aim of the joint symposium + workshop was to promote research and educational exchange on a major societal challenge linked to the progressive ageing of the population worldwide. Both events were dedicated to highlight the pivotal impact of key behaviors for healthy ageing, and focused predominantly on Healthy food for Healthy ageing.

The aim of the mini-symposium entitled "Natural Products for Healthy Ageing: from Molecular Targets to Therapy" was to provide a strong educational value with the participation of students at different levels of education (BSc, Master and PhD), junior and senior scientists as well as the general population of the host partner (Stellenbosch University) at Cape Town. It was also expected to be a great educational value for the general population by focusing the attention of the major impact of healthy versus unhealthy food on human health. The aim of the mini-workshop was to bring together senior scientists and their teams of the 3 international partners to build a collaborative research project based on the exchange of scientific knowledge and expertise in a synergistic manner.

Prof. Valérie Schini-Kerth Faculty of Pharmacy, University of Strasbourg



The symposium and workshop were initially planned to be held in-person at the University of Stellenbosch in October 2020. However, due to the pandemic both events had to be postponed and replaced by a virtual symposium that was held 8-10 November, 2021 followed on 12 November by the virtual workshop amongst the 3 partners. Since the Symposium was held via an on-line platform, the 3 partners decided to open the conference, besides to scientists from the 3 partners, also to those from all over the world and to involve a professional conference organizer from South Africa (ConsultUS) to set up and manage the virtual Symposium. The flyer announcing the international Symposium was advertised among the staff and students of the 3 partners Universities and their worldwide networks, and also at AC21. Registration and attendance of the Symposium was free of charge. Information regarding the Symposium and the program are available at https:// consultus.eventsair.com/cmspreview/ natural-products-for-healthy-aging-2021

The Symposium was highly successful with more than 150 participants from



all over the world including France, South Africa, Australia, Japan, Korea, Pakistan, Benin, Côte d'Ivoire, Nigeria, Italy, Germany, Kenya, Mauritius, Mexico, and Brazil. Prof. Valérie Schini-Kerth (University of Strasbourg) was able to travel to South Africa to join Prof Strijdom and colleagues from the Centre for Cardiometabolic Research in Africa and Division of Medical Physiology at Stellenbosch University, from where the Symposium was managed.

During the three days, both morning and afternoon sessions were chaired by members of the 3 partners. Every day consisted of 6 plenary lectures given by international leading experts, as well as 10 abstract presentations by junior scientists selected from the submitted abstracts. Each presentation was followed by a question - answer session. The plenary lectures highlighted the pivotal importance of a healthy diet rich in selected fruits and vegetables, and natural products to prevent the development of major diseases including cancer and cardiovascular diseases, and discussed the scientific evidence of the beneficial effect of the active natural compounds and the underlying mechanisms. Bench to bedside scientific evidence was covered in various groups of populations including healthy young and old subjects and patients with risk factors such as cardiometabolic diseases, and also populations from developed and developing countries, and from the North and South.

The topic of the virtual Symposium, the high quality of the scientific presentations, the active discussions, and the very well-organized virtual event were highly appreciated by the participants. The 3 partners specially appreciated the enthusiasm and the high quality of the contributions by the junior scientists. The question raised by several participants at the end of the Symposium whether it will be followed by a similar one next year stimulated the partners to think about it. University); Dr Gerald Maarman (Division Medical Physiology; Stellenbosch University); Prof Barbara Huisamen (Division Medical Physiology; Stellenbosch University).

Following the Symposium, the 3 partners participated in a workshop aiming



The meeting room at Stellenbosch University where the Symposium was managed. From left to right: Prof Faadiel Essop (Director: Centre for Cardiometabolic Research in Africa; Stellenbosch University); Dr Shantal Windvogel (Division Medical Physiology, Stellenbosch University); Prof Valérie Schini-Kerth (Faculty of Pharmacy, Strasbourg University, France); Prof Hans Strijdom (Head: Division Medical Physiology and Deputy Director: Centre for Cardiometabolic Research in Africa, Stellenbosch to initiate future collaborations and to build a follow up joint research project to raise funds by national and international programs to further evaluate the health promoting effect of natural products both at the pre-clinical and clinical level, and continue to nourish exchange of scientists and students at the international level.



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## Special Project Fund <Report 2>

"Towards Scalable and Resilient Cyber Infrastructure for Mission-Critical UAV-Enabled Wireless Networks"





Dr. Shih-Chun Lin, Assistant Professor, Department of Electrical and Computer Engineering, North Carolina State University

AVs for wireless communications have drawn much attention as the mass production of high-performance, low- cost, intelligent UAVs has become more practical and feasible. With the rapid technological advance and wide-range deployment of UAVs, UAV communication networks have been considered a quick solution for post-disaster communications, military defense applications, and diverse commercial scenarios. Aiming at UN's SDGs #9, this SPF project, led by NC State, focused on initiating collaborative research discussion and external grant planning for developing scalable and resilient cyberinfrastructure for UAVenabled wireless networks in missioncritical services. Dr. Shih-Chun Lin (NC State), Dr. Peng Shi (University of Adelaide), Dr. Masaaki Katayama (Nagoya University), and Dr. Ta-Sung Lee (National Chiao Tung University) joined their efforts in this project with outstanding accomplishments in 2021. These achievements include several seminar talks and teleconferences, technical paper publications, workshop organization, etc..

As COVID-19 was severe in Asia and several places had active restrictions for international travel, physical meetings and workshops had changed to virtual events. Five virtual talks and seminars have been conducted about these autonomous vehicles and their applications.

 "Realizing 6G Smart Manufacturing with Service-Level Agreement Assurance and Reconfigurable Multi-Robot Task Assignment," Department of Computer Science, National Chung Cheng University, Virtual Event, December 6, 2021.

 "In-Network Computation for Distributed Privacy-Preserving Learning over mous Vehicle Technologies with Ultra-Low Latency," Department of Computer Science, National Chung Cheng University, Virtual Event, May 31, 2021. · "Beyond 5G Wireless Systems: Industry Trends and Taiwan's Advantages," ROC National Academy of Civil Service, Virtual Event, May 12, 2021. "6G Industry Verticals: Machine Learning-Enabled and Ultra-Low Latency Connected Transportation," NC-CAV Seminar Series, Virtual Event, March 26, 2021.

Figure 1 shows one educational impact of this project, where Dr. Lin delivered a seminar talk of beyond 5G wireless sys-

Wireless Edges," Cisco Systems, Inc., Virtual Event, June 24, 2021. • "6G Industry Verticals: Connected and Autono-



Figure 1. Dr. Lin gave a "beyond 5G systems" seminar in Taiwan's National Academy of Civil Service.



tems in Taiwan's National Academy of Civil Service. Around five hundred government staff attended Dr. Lin's seminar online and learned to know the industry trends and state-of-the-art development in the information and communication technology domain through this venue. working," in Proc. of IEEE INFOCOM Workshop, Virtual Conference, May 2021.

Both conference presentations are held in virtual. Notably, the TULVCAN work was published by the top-tier communications conference, the IEEE Interna-



Figure 2. Dr. Lin delivered a "6G industry verticals" virtual seminar at National Chung Cheng University.

For research activities, we published two conference papers and two journal papers to prestigious IEEE proceedings, as isted:

•S.-C. Lin, K.-C. Chen, and A. Karimoddini, "SDVEC: Software-Defined Vehicular Edge Computing with Ultra-Low Latency," IEEE Communications Magazine, vol. 59, no. 12, pp. 66-72, December, 2021.

•C.-H. Lin, Y.-H. Fang, H.-Y. Chang, Y.-C. Lin, W.-H. Chung, S.-C. Lin, and T.-S. Lee, "GCN-CNVPS: Novel Method for Cooperative Neighboring Vehicle Positioning System Based on Graph Convolution Network," IEEE Access, vol. 9, pp. 153429-153441, November, 2021.

•C.-H. Lin, S.-C. Lin, C.-Y. Wang, and T. Chase, "A C-V2X Platform Using Transportation Data and Spectrum Aware Slidelink Access," in Proc. of IEEE SMC Workshop, Virtual Conference, October 2021.

•C.-H. Lin, S.-C. Lin, and E. Blasch, "TULVCAN: Terahertz Ultra-broadband Learning Vehicular Channel-Aware Nettional Conference on Computer Communications (INFOCOM). It introduces novel terahertz (THz) channel-aware spectrum learning solutions that fully disclose the uniqueness of THz channels when performing such ultrabroadband sensing in future vehicular environments. Numerical results show that our solutions outperform the latest generative adversarial network (GAN) realization with much higher cosine and structure similarity measures, more minor learning errors, and 56% fewer required training overheads. Besides, we introduce a cellular vehicle-to-everything (C-V2X) verification platform based on an actual traffic simulator and spectrumaware access. The developed slidelink communication can adopt different operating bands with remarkable spectrum detection performance, validating its practicality in real-world vehicular environments.

Moreover, after a few rounds of discussions and thorough preparation, Dr. Lin and several faculties successfully held a "Special Session on Connected and Autonomous Vehicles" in the IEEE Systems, Man, and Cybernetics Society (SMC) 2021. As shown in Figure 3, this special session focused on state-of-theart and practice solutions for addressing critical challenges in developing and operationalizing connected and autonomous vehicles (CAVs). The open issues include efficient computer vision algorithms for AV perception systems, communication backbone for CAVs' connectivity, traffic volume prediction techniques, the latest connected autonomous vehicle testbeds, and CAV applications. The session was initially arranged in Melbourne, Australia, but went virtual later due to the COVID-19 situation. Also, spanning from this SPF project, Dr. Lin and Dr. Lee planned to establish a Ph.D. student visiting program between labs at the two institutions. This program will undoubtedly enhance the cross-linkage between the lines of research pursued by the participating members and strengthen the AC21 network in the long term.



Figure 3 IEEE SMC 2021 special session on connected and autonomous vehicles, October 17-20, 2021.

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## Special Project Fund <Report 3>

"Well-Being and Financial Health during the COVID-19 Pandemic"





Prof. Dr. Arvid O. I. Hoffmann Department of Marketing, Adelaide Business School, The University of Adelaide

With the generous support of an AC21 Special Project Fund grant, a multidisciplinary and international team of collaborators was formed in early 2020 to study the effect of the COVID-19 pandemic on consumers' mental, social, functional, and financial well-being across the world. In particular, Professor Arvid Hoffmann from the University of Adelaide. Associate Professor Daria Plotkina and Professor Marie-Hélène Broihanne from EM Strasbourg Business School, Professor Stefanie Kleimeier from Stellenbosch Business School, and Professor Anja Goeritz from the University of Freiburg came together to design and run a survey study on this topic of importance.

The year 2020 was marked by an unprecedented health and economic crisis: the COVID-19 outbreak. Health and security considerations resulted in farreaching government policies restricting consumers' daily life. As the pandemic unfolded, the financial and social consequences of lockdowns, social distancing, vaccination, and other policies started to become clear. That is, while restrictive policies aim to protect consumer health, they also risk to negatively affect individuals' finances and wellbeing. In this regard, the interrelation of finance and health can create a vicious circle, as financial stress is both a cause and consequence of poor health. Consumer overall well-being during the COVID-19 pandemic has gained momentum in political and academic discussions and while prior studies show a general connection between income, wealth, and health, to date there is only a limited understanding of the interrelation of the different dimensions of wellbeing and variation across countries in terms of how consumers are affected.

Our research aimed to fill in this gap and compare experiences across countries differentially affected by COVID-19, taking a holistic perspective of consumer well-being. To do so, the project team used the Special Project Fund grant to carry out a survey examining the mental, social, functional, and financial wellbeing of 2,136 consumers across Australia, France, Germany, and South Africa. The team adapted the measurement tool to each country and scrutinized the results within the countries' cultural and political contexts. The chosen countries provide a great diversity of conditions in terms of COVID-19 case numbers, death rate, and severity of public health restrictions at the time of data collection. First results show important crosscountry differences.

In terms of overall well-being, France scores the lowest and Australia the highest. We further compare individuals who had a direct COVID-19 experience (i.e., had a confirmed COVID-19 infection, salient symptoms, or a confirmed case in their household) with those who had not any. For people not experiencing COVID-19, mental well-being is lower in France than in Germany, Australia, and South Africa, while in South Africa it is lower than in Germany. Social wellbeing is relatively high and very similar in Australia and South Africa and higher compared to Germany and France. In descending order, functional well-being moves from higher to lower from Australia, Germany, South Africa, to France. Financial well-being is lowest in France compared to Australia and South Africa. At the same time, directly experiencing



COVID-19 is not associated with a lower level of well-being in France but is so in Australia and Germany. It appears that experiencing COVID-19 "evened out" differences in well-being across countries.

Our research contributes to the emerging literature on the consequences of COVID

-19. According to the World Health Organization, managing one's mental health and psycho-social well-being during the pandemic is as important as managing one's physical health, while these dimensions of well-being are at risk due to the increased stress and restrictions associated with COVID-19. These first results are submitted to a peer-reviewed academic journal. We thank AC21 for enabling this inspiring opportunity for international and interdisciplinary collaboration through its Special Project Fund!

#### AC21 Special Project Fund (SPF) : Results of the 2022 Round SPF Awarded to Five Projects This Year

Project Titles	Participating Universities
Future Programmable Converged Wireless-Optical Infrastructure for Be- yond 5G/6G Networks	<b>1. North Carolina State University (U.S.A.)</b> 2. Nagoya University (Japan) 3. The University of Adelaide (Australia)
	Non-AC21 Members: National Chiao Tung University, Taiwan Institute for Information Industry, Taiwan
Towards healthy aging by antioxidants: from molecular mechanism to cel- lular function	<b>1. Nanjing University (China)</b> 2. University of Strasbourg (France) 3. University of Freiburg (Germany)
Net Zero Emission Transition: structural changes in industry, governance and society	<ol> <li>Jilin University (China)</li> <li>University of Freiburg (Germany)</li> <li>University of Strasbourg (France)</li> <li>Nanjing University (China)</li> </ol>
	Non-AC21 Members: Erasmus University Rotterdam, Netherland University of Duisburg-Essen, Germany University of Göttingen, Germany
Marine-derived bioactives and nutraceuticals: Sustainable use of marine products for health and wellbeing	<ol> <li>The University of Adelaide (Australia)</li> <li>University of Freiburg (Germany)</li> <li>University of Strasbourg (France)</li> </ol>
	Non-AC21 Members: Flinders University, Australia Mahidol University, Thailand Pukyong National University, Korea
Plasma technology to treat multidrug-resistant infections in cystic fibrosis	<ol> <li>The University of Adelaide (Australia)</li> <li>University of Freiburg (Germany)</li> <li>University of Strasbourg (France)</li> </ol>
	Non-AC21 Members: Plasmatreat GmbH, Germany

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## AC21 General Secretariat Activities (April 2021 - April 2022)

YEAR	DATES	EVENT/ACTIVITY
2021	September 29	AC21 Steering Committee Meeting (STC)
	October 1	Call for AC21 Special Project Fund (SPF) 2022
	October 26	AC21 Steering Committee Meeting (STC)
	December 9	19th AC21 Steering Committee Meeting (STC)
2022	January	Evaluation for SPF2022
	February	Announcement for the result of SPF2022
	April 20	AC21 Steering Committee Meeting (STC)

### Upcoming AC21 Activities and Events

YEAR	DATES	EVENT/ACTIVITY	HOST
2022	April	Call for 7th AC21 Student World Forum	Nanjing University (China)
	July 18-31	7th AC21 Student World Forum	Nanjing University (China)
	September	AC21 Steering Committee Meeting (STC)	AC21 General Secretariat
	December 7-9	11th AC21 International Forum	Nagoya University (Japan)
	December 7	20th AC21 Steering Committee Meeting (STC)	AC21 General Secretariat
	December 8	11th AC21 General Assembly Meeting (GA)	AC21 General Secretariat

