Daniel WEIHS 教授
Prof. Daniel WEIHS

工程學榮譽博士
Doctor of Engineering *honoris causa*

One of the world's leading authorities on aeronautics, Professor Daniel WEIHS has had a long career of developing ingenious engineering solutions using nature as a model. Be it developing tiny parachutes that can detect toxins in the air or observing dolphins to find a way to stop them being caught in tuna nets, Prof. Weihs has amassed an eclectic and diverse body of work that has had applications in fields as varied as aviation, military systems, marine biology, and conservation. Taking inspiration from the mechanics of flora and fauna to devise innovative solutions to engineering problems has been a hallmark of his work for decades.

A Distinguished Professor Emeritus at Technion, Israel Institute of Technology, Prof. Weihs was born in 1942 in Guilin, China, three years after his Jewish parents fled Austria following the Nazi annexation. Growing up in Israel after he moved away from China in 1949, Prof. Weihs completed the entirety of his studies at Technion in Haifa, where he obtained his doctorate in Aeronautical Engineering in 1971. He then went on to teach at Technion from 1973 to 2011. He has occupied numerous chairs at the university, including Provost, Dean of Aerospace Engineering, and Dean of the Graduate School. He currently holds the Louis and Lyra Richmond Chair in Life Sciences.

The author of more than 200 scientific papers, Prof. Weihs has been a key figure in the development of unmanned aircraft since 1974, which has greatly contributed to Israeli military aviation. His work has branched out into other areas of robotics; many of the drones and other autonomous systems we use today owe a great debt to his research. The relatively new field of biomimicry, in which inspiration is drawn from biological systems to construct new technologies, has been a particularly fertile area for Prof. Weihs and his colleagues at Technion.

A love of nature has spurred his innovative spirit. Early on in Prof. Weihs' career, he was struck by how much more efficient birds, insects, and fish were than humans in their capacity for transportation. Since the 1970s, Prof. Weihs has studied the mechanisms of the swimming of fish. He is the author of an influential 2003 paper which established how dolphin calves swim in the slipstream of their mothers. Prof. Weihs found that the mother dolphin's momentum could provide up to 90% of the thrust for the calves to swim alongside. His research has been instrumental in helping dolphin schools evade tuna fishing nets, which had continued to be a problem as calves became separated from their mothers.

身為全球最頂尖的航空學權威之一，Daniel WEIHS教授一直以大自然為依歸，成功研發過不少巧妙的工程解決方案。不論是用於偵測空氣中毒素的小型降落傘，還是透過觀測海豚活動，從中尋找合適的方法避免牠們誤入捕鯖魚網，他的研究範疇廣泛，不拘一格，應用範圍涵蓋航空、軍事、海洋生物學及保育等不同領域。Weihs教授善於借鑒動植物生存智慧，從中構思創新方案破解工程學難題，為他過去數十年的研究加添鮮明特色。

Weihs教授是以色列理工學院傑出榮休教授，1942年生於中國桂林，其猶太裔雙親在他出生前三年因為要逃離被納粹黨佔領的奧地利而前往中國生活。1949年，他離開中國到以色列定居，隨後在位於海法市的以色列理工學院完成學業，1971年獲授航空工程學博士學位。他其後留校任教，在1973至2011年間先後出任教務長、航空航天工程學院院長、研究生院院長等要職，現為Louis and Lyra Richmond生命科學講座教授。

Weihs教授著有逾200篇科學論文，並自1974年開始成為研發無人機的靈魂人物之一，這項技術對以色列軍用航空發展貢獻良多。他致力將其研究擴展至其他機器人相關領域，我們今天所用的無人機及自主系統，當中不少皆得力於他的研究成果。此外，他跟以色列理工學院的團隊專注鑽研新興的仿生學，透過研究大自然的生物系統，從中取經創造新技術。

對Weihs教授來說，他對大自然的熱愛與好奇激發出其敢為人先的創新精神。他一早已洞悉雀鳥、昆蟲及魚類的運輸能力遠勝人類，因此自上世紀70年代，便開始研究魚類的游泳機制。2003年，他發表了一篇影響深遠的研究論文，描述小海豚如何順著母豚的滑流一起游泳；據其研究顯示，母豚的動量可為身旁同游的小海豚提供高達90%的推動力。這項發現對豚群避開捕鯖網大有助益，解決了小海豚不時因誤墮捕鯖網而與母豚失散這項長期問題。

Much of his work has been entwined with Israel's security infrastructure and armed forces, to which Prof. Weihs has acted as a consultant. He has held a number of other important roles in Israel including Board members of Israel Aerospace Industries and Bet Shemesh Engines Ltd., and was on the steering committee of the national Space Agency for more than three decades. From 2009 to 2011, Prof. Weihs was the country's Chief Scientist, during which time he oversaw the integration of returning Israeli scientists into government projects and helped foster an interest in science among the general public. This has been crucial in Israel's pre-eminence in technology start-ups.

Prof. Weihs was awarded many international accolades over the years. He is a member of the Israel Academy of Sciences and Humanities, a foreign member of the US' National Academy of Engineering, a Fellow of the American Physical Society, and also the recipient of an honorary doctorate from Israel's Ben Gurion University.

Grateful for the intervention of a Chinese diplomat who saved his parents' lives, Prof. Weihs has never forgotten his roots in the Far East. Over the past few decades he has paid numerous visits to the Greater China region for conferences and exchanges. On one of these, he attended a celebration of the 100th anniversary of the founding of the Way of Life Hospital in Guilin, his birthplace, held at the Emmanuel Church in Pok Fu Lam, Hong Kong. On other, he delivered lectures at the APAC Innovation Summit organized by the Hong Kong Science and Technology Parks Corporation and visited HKUST in June 2016 to talk on robotics and autonomous systems, an area of particular interest in a region that has itself become a leader in the production of drones and other unmanned devices.

Chancellor, on behalf of the Council of the Hong Kong University of Science and Technology, I have the high honor of presenting to you, Prof. Daniel Weihs, Distinguished Professor Emeritus at Technion, Israel Institute of Technology, for the award of Doctor of Engineering *honoris causa*.

Weihs教授曾擔任以色列國安基建及武裝部隊的顧問，其工作大部份與此息息相關。他亦曾身居以色列國內不少要職，包括以色列航空航天工業集團及Bet Shemesh Engines Ltd董事，並擔任國家航天局督導委員會委員超過30年。在2009至2011年出任以色列首席科學家期間，他負責安排海外以色列科學家回流參與政府項目，同時培養普羅大眾對科學的興趣，對確立該國在科技初創企業上的優勢至為關鍵。

他多年來屢獲國際殊榮，除晉身以色列科學及人文科學院院士，也是美國國家工程院外籍院士及美國物理學會會士，並獲以色列本·古里安大學頒授榮譽博士學位。

雙親當年受中國外交大使幫助而倖免於難，Weihs教授對此一直心存感激，亦從未忘記自己與遠東地區的深厚淵源。數十年來，他多次前往大中華地區參與會議及交流真知灼見，如到訪香港薄扶林以馬內利堂，參與慶祝其出生地——桂林道生醫院成立百周年的儀式，以及應邀在香港科技園公司主辦的「亞太創新峰會」講座發言。鑑於區內的無人機及其他無人設備產業處於領導地位，發展備受關注，他遂於2016年六月親臨科大以機器人及自主系統為題發表演講。

大學校監，本人謹代表香港科技大學校董會，恭請閣下頒授工程學榮譽博士學位予以色列理工學院傑出榮休教授Daniel Weihs教授。