

PRESS RELEASE

NUS to host two new national-level consortia in cybersecurity and synthetic biology, to spur research, collaboration, commercialisation and training in leading-edge technologies

Funded by NRF, these consortia will provide seamless platforms to engage industry, government agencies and researchers in these technologies

Singapore, 20 September 2016 – Two new consortia have been launched to promote research, commercialisation and training in cybersecurity and synthetic biology. The Singapore Cybersecurity Consortium (SGCSC) and the Singapore Consortium for Synthetic Biology (SINERGY) will be hosted at the National University of Singapore (NUS) and supported by the National Research Foundation (NRF) Singapore.

Mr Teo Chee Hean, Deputy Prime Minister and Coordinating Minister for National Security, and Chairman of NRF Singapore, announced the launch of these two consortia today, at the opening of the inaugural Singapore Week of Innovation & TeCHnology (SWITCH).

The two new consortia will encourage use-inspired research, technology translation, manpower training, and technology awareness in cybersecurity and synthetic biology by actively promoting research discussions across industry, government agencies and researchers. It will spur the creation of value for Singapore's economy and society from knowledge generated by the S\$42 million investment in NRF's National Cybersecurity R&D Programme and the S\$34 million investment in synthetic biology-related R&D funded under the Biological Design Tools and Applications grant call and NRF's Competitive Research Programme.

"NRF has been supporting the setting up of collaborative R&D consortia, built around scientific breakthroughs and new knowledge discovered from research programmes funded by NRF. These consortia will foster closer interaction between industry and research institutions and provide companies access to top researchers and emerging technologies. We are confident that the consortia will result in more innovation and commercialisation in the cybersecurity and synthetic biology sectors when companies adopt the new technologies developed by the research institutions," said Mr George Loh, Director (Programmes), NRF Singapore.

Singapore Cybersecurity Consortium (SGCSC)

As Singapore is highly reliant on software and information technology infrastructure, cybersecurity threats pose significant challenges to the information security industry.

With support from NUS and NRF, Professor Abhik Roychoudhury from the NUS School of Computing, will lead SGCSC to promote greater awareness, adoption and translation of cybersecurity technologies.

Professor Roychoudhury said, "The consortium seeks to bridge the gap between state-of-the-practice and state-of-the-art cutting edge research in the area of cybersecurity,

as well as in other areas which can benefit from advances in cybersecurity such as the software sector and financial technologies (FinTech). Through a concerted and collective effort to engage various cybersecurity stakeholders through training, professional engagement and research collaborations, we hope to lower the entry barrier for the adoption of relevant technologies by companies in Singapore, and at the same time create a vibrant community of professionals who will generate novel ideas and technologies that will advance the field of cybersecurity in ways that will benefit Singapore and beyond.”

The consortium will make use of the National Cybersecurity Lab infrastructure funded by NRF and housed at NUS. The consortium currently has 14 industry partners as founding members. Consortium members can access a range of activities such as technology talks, annual cybersecurity camps, short certification courses, seed grants to collaborate in addressing critical problems in security and privacy.

Please refer to [Annex A](#) for more details on the SGCSG and its activities.

Singapore Consortium for Synthetic Biology (SINERGY)

An emerging area of research, synthetic biology is an interdisciplinary branch of biology and engineering that involves the design and construction of novel artificial biological pathways, organisms or devices, or the redesign of existing natural biological systems. Recent research has demonstrated promising application of synthetic biology in areas such as energy, healthcare and the environment.

The Singapore Consortium for Synthetic Biology (SINERGY) will be led by Associate Professor Matthew Chang, Director for the Synthetic Biology for Clinical and Technological Innovation (SynCTI) programme at NUS. Set up with funding support from NUS and NRF, the new consortium will tap on the facilities and expertise at SynCTI.

Associate Professor Chang explained, “SINERGY aims to consolidate Singapore’s capabilities in synthetic biology and harness synergies across industry sectors to create a vibrant and globally-connected bio-based economy in Singapore. We envisage that the efforts by SINERGY to encourage frequent interactions and co-development between industry, the universities and research institutes, will contribute towards augmenting manpower development and deployment for the new bio-economy, as well as catalysing the translation of expertise in synthetic biology for industry applications.”

To date, more than 10 industry partners have committed to join the consortium as founding members. The new consortium will be engaging its members through various activities such as annual meeting for biofoundry users, short certification courses, and strategic workshops to promote collaboration between researchers and industry, as well as networking events with international synthetic biology consortia.

Please refer to [Annex B](#) for more details on SINERGY and its activities.

Enclosures:

Annex A – Factsheet on Singapore Cybersecurity Consortium (SGCSG)

Annex B – Factsheet on Singapore Consortium for Synthetic Biology (SINERGY)

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About National University of Singapore (NUS)

A leading global university centred in Asia, the National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education and research, with a focus on Asian perspectives and expertise.

NUS has 17 faculties and schools across three campuses. Its transformative education includes a broad-based curriculum underscored by multi-disciplinary courses and cross-faculty enrichment. Over 38,000 students from 100 countries enrich the community with their diverse social and cultural perspectives.

NUS has three Research Centres of Excellence (RCE) and 27 university-level research institutes and centres. It is also a partner in Singapore's fifth RCE. NUS shares a close affiliation with 16 national-level research institutes and centres. Research activities are strategic and robust, and NUS is well-known for its research strengths in engineering, life sciences and biomedicine, social sciences and natural sciences. It also strives to create a supportive and innovative environment to promote creative enterprise within its community.

For more information on NUS, please visit www.nus.edu.sg.

About National Research Foundation (NRF), Prime Minister's Office, Singapore

The National Research Foundation (NRF) is a department within the Prime Minister's Office. The NRF sets the national direction for research, innovation and enterprise (RIE) in Singapore. It seeks to invest in science, technology and engineering, build up the technological capacity of our companies, encourage innovation by industry to exploit new opportunities that drive economic growth, and facilitate public-private partnerships to address national challenges.

Under RIE2020, NRF is committed to create greater value in Singapore from our investment in research, innovation and enterprise through 1) closer integration of research thrusts, 2) stronger dynamic towards the best teams and ideas, 3) sharper focus on value creation, and 4) better optimised RIE manpower.

Visit www.nrf.gov.sg/research/rie2020 for more details.

Annex A: Factsheet on Singapore Cybersecurity Consortium (SGCSC)

The Singapore Cybersecurity Consortium (SGCSC) is anchored at the National University of Singapore (NUS) and supported by the National Research Foundation (NRF) Singapore. The consortium seeks to encourage use-inspired research, technology translation, manpower training, and technology awareness in the area of security, by actively promoting research discussions across academia, industry and government agencies.

NRF has funded S\$42 million in the form of seven large research projects to universities and research institutes under the National Cybersecurity R&D Programme. The consortium will leverage and build on the research work being conducted in these projects, and will seek to look for translation opportunities. The consortium will also leverage the National Cybersecurity Lab infrastructure funded by NRF and housed at NUS, for imparting skills and experience in cybersecurity experimentation to industry personnel.

The consortium is led by Professor Abhik Roychoudhury from NUS School of Computing. The consortium currently has 14 industry partners as founding members. Consortium members will have access to a range of activities that offer opportunities for dialogue, partnerships, knowledge update, skills training, and research collaborations with universities via seed grants.

More information on the consortium is available at <http://sgcsc.sg/>

Consortium Activities and Initiatives

Technology Awareness and Adoption	<ul style="list-style-type: none">• Technology Talk Series• Annual Wild and Crazy Ideas Day (WACI Day), hosting impromptu presentations to prompt collective brainstorming• Recruitment of 2-3 renowned experts to provide advice to companies under critical circumstances• Special Interest Groups with an anchor institution for each theme
Manpower Training	<ul style="list-style-type: none">• Annual cyber-security camp, featuring lectures from international and local researchers, hands-on sessions, and hackathons• Short certification courses in specific security sub-topics
Technology Translation	<ul style="list-style-type: none">• Periodic grant call for seed grants on specific challenge problems in security and privacy• Industry Consortium Day held in conjunction with Singapore Cybersecurity Conference (SG-CRC), featuring research showcase by consortium members

Founding Members of SGCSC:

Acronis Asia Pte Ltd	PwC Singapore
Attila Cybertech Pte Ltd	SecureAge Technology Pte Ltd
Banff Cyber Technologies Pte Ltd	Singapore Telecommunications Ltd (Singtel)
Cloak Pte Ltd (formerly Clault)	ST Electronics (Info-Security) Pte Ltd
Custodio Pte Ltd	Standard Chartered Bank Singapore
Excel Marco Industrial Systems Pte Ltd	StarHub
Parasoft South East Asia Pte Ltd	Vantage Point Security Pte Ltd

Annex B: Factsheet on Singapore Consortium for Synthetic Biology (SINERGY)

The Singapore Consortium for Synthetic Biology (SINERGY), which is anchored by key partners; namely, the National University of Singapore (NUS), Nanyang Technological University (NTU), Agency for Science, Technology and Research (A*STAR) and Temasek Life Sciences Laboratory, is supported by the National Research Foundation (NRF) Singapore. The consortium seeks to encourage use-inspired research, technology translation, manpower training, and technology awareness in the area of synthetic biology, by actively promoting research discussions across academia, industry and government agencies.

NRF has invested S\$34 million in synthetic biology-related R&D in the form of eight research projects to universities and research institutes under the Biological Design Tools and Applications (BDTA) grant call and NRF's Competitive Research Programme. The consortium will leverage and build on the research work being conducted in these projects, and will seek to look for translation opportunities. The consortium will also leverage the facilities set up at the Synthetic Biology for Clinical and Technological Innovation (SynCTI) at NUS, for imparting skills and experience in synthetic biology experimentation to industry personnel.

The consortium is operated by NUS and is led by Associate Professor Matthew Chang from NUS SynCTI programme. To date, more than 10 industry partners have committed to join the consortium as founding members. Some members include AdvanceSyn Pte Ltd, Bio Basic Asia Pacific Pte Ltd, Becton Dickinson Biosciences, Engine Biosciences Pte Ltd, GlaxoSmithKline, Singer Instruments Co. Ltd and Wilmar International Limited. Consortium members will have access to a range of activities that offer opportunities for dialogue, partnerships, knowledge update, skills training, and research collaborations with universities via seed grants.

Consortium Activities and Initiatives

Technology Awareness and Adoption	<ul style="list-style-type: none">• Technology Talk Series• Annual BioFoundry Users meeting• Recruitment of renowned experts in synthetic biology to provide advice to companies• Special Focused Groups with an anchor institution for thematic interests
Manpower Training	<ul style="list-style-type: none">• Annual synthetic biology strategic retreat, featuring lectures from international and local researchers, hands-on sessions, and industry engagement• Short certification courses in specific synthetic biology sub-topics
Technology Translation	<ul style="list-style-type: none">• Periodic grant calls for seed grants on specific challenge problems in synthetic biology• Strategic workshops between researchers and industry for commercialisation of synthetic biology projects
Global Engagement	<ul style="list-style-type: none">• Networking with international synthetic biology consortiums, such as the EBRC (USA), the Flowers Consortium (UK) and the ERASynBio (European Commission).