The NRF Investigatorship provides opportunities for established, innovative and active scientists and researchers, in their mid-career, to pursue ground-breaking, high-risk research. It is designed to support a small number of excellent Principal Investigators who have a track record of research achievements that identify them as leaders in their respective field(s) of research.

**CLASS OF 2019**

**Dr Giulia RANCATI**  
*Agency of Science, Technology and Research*  
*Institute of Medical Biology*

Research Title: Evolvability of eukaryotic cells  
Homepage: [https://www.a-star.edu.sg/imb/Research/tid/2/Aneuploidy-and-Genome-Instability](https://www.a-star.edu.sg/imb/Research/tid/2/Aneuploidy-and-Genome-Instability)

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**A/P Antonia MONTEIRO**  
*National University of Singapore*  
*Department of Biological Sciences*

Research Title: Finding the locus of evolution of a novel complex trait  
Homepage: [www.dbs.nus.edu.sg/staff/antonia.html](http://www.dbs.nus.edu.sg/staff/antonia.html)

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**A/P Matthew CHANG**  
*National University of Singapore*  
*Department of Biochemistry, Yong Loo Lin School of Medicine*

Research Title: Engineering Biology to Reprogramme Microbiome  
Homepage: [https://bch.nus.edu.sg/bchcmw.htm](https://bch.nus.edu.sg/bchcmw.htm)

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**Prof LIU Xiaogang**  
*National University of Singapore*  
*Department of Chemistry*

Research Title: Photon Management for Energy Conversion and Imaging Applications  
Homepage: [https://chemistry.nus.edu.sg/people/academic_staff/liuxg.htm](https://chemistry.nus.edu.sg/people/academic_staff/liuxg.htm)
Prof WU Jishan  
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Research Title: Toward Carbon-Based Magnets  
Homepage: [https://chemistry.nus.edu.sg/people/academic_staff/wujs.htm](https://chemistry.nus.edu.sg/people/academic_staff/wujs.htm)

A/P Emma HILL  
*Nanyang Technological University*  
*Asian School of the Environment*

Research Title: Space-borne Geodesy and Remote Sensing for Understanding Natural Hazards, Sea-level Change and Disaster Response in Asia  
Homepage: [https://earthobservatory.sg/people/emma-hill](https://earthobservatory.sg/people/emma-hill)

Prof MIAO Chun Yan  
*Nanyang Technological University*  
*School of Computer Science and Engineering*

Research Title: Senior-friendly Persuasive AI Companions for an Aging Population  
Homepage: [www.ntulily.org/ascymiao](http://www.ntulily.org/ascymiao)

A/P GOTO Atsushi  
*Nanyang Technological University*  
*School of Physical and Mathematical Sciences*

Research Title: Polymer Design Platform via Organocatalysis for Advanced Polymer Materials  
Homepage: [www1.spms.ntu.edu.sg/~chemistry/FacultyResearch/Individual%20Faculty/GOTOAtsushi.htm](http://www1.spms.ntu.edu.sg/~chemistry/FacultyResearch/Individual%20Faculty/GOTOAtsushi.htm)

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*Singapore Management University*  
*School of Information Systems*

Research Title: Coordinated Cyber-physical Sensing & Edge Analytics  
Homepage: [https://www.smu.edu.sg/faculty/profile/9632/Archan-MISRA](https://www.smu.edu.sg/faculty/profile/9632/Archan-MISRA)
Dr KHOR Chiea Chuen  
*Agency of Science, Technology and Research*  
*Genome Institute of Singapore*

Research Title: Deciphering the genetic architecture of age-related diseases using eye diseases as the paradigm  
Homepage: [https://www.a-star.edu.sg/gis/Our-People/Investigator-details/source/faculty_member/user_id/139](https://www.a-star.edu.sg/gis/Our-People/Investigator-details/source/faculty_member/user_id/139)

Dr Jonathan Yuin-Han LOH  
*Agency of Science, Technology and Research*  
*Institute of Molecular and Cell Biology*

Research Title: Single-cell Transcriptome and Accessibility Regions (STAR) for analyzing cell fates plasticity and heterogeneity of complex tissues  
Homepage: [https://www.a-star.edu.sg/imcb/Science/Investigators/Senior-Pls/Senior-Pls-Profile/ResearchListID/42](https://www.a-star.edu.sg/imcb/Science/Investigators/Senior-Pls/Senior-Pls-Profile/ResearchListID/42)

Dr Bruno REVERSADE  
*Agency of Science, Technology and Research*  
*Institute of Medical Biology*

Research Title: Realize the Translational and Therapeutic Potential of the ELABELA-ergic Pathway  
Homepage: [https://www.a-star.edu.sg/imb/Research/tid/12/Human-Genetics-Embryology.aspx](https://www.a-star.edu.sg/imb/Research/tid/12/Human-Genetics-Embryology.aspx)

A/P Virgile VIASNOFF  
*National University of Singapore*  
*Mechanobiology Institute*

Research Title: Synthetic epithelial morphogenesis: a new perspective from mechanobiology  
Homepage: [https://mbi.nus.edu.sg/virgile-viasnoff/](https://mbi.nus.edu.sg/virgile-viasnoff/)

Prof LU Yixin  
*National University of Singapore*  
*Department of Chemistry*

Research Title: Phosphine Catalysis: New Heights in Asymmetric Synthesis, Applications to Medicinal Chemistry & Potentials in Green, Sustainable Production  
Homepage: [https://www.chemistry.nus](https://www.chemistry.nus)
A/P WANG Qing
National University of Singapore
Department of Materials Science & Engineering

Research Title: "E-blood": Simultaneous Powering and Cooling of Microchips for Energy Resilient and Power Efficient Computing
Homepage: www.mse.nus.edu.sg/staff/wq.php

Prof Barbaros ÖZYILMAZ
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Research Title: Engineer a robust platform for topological quantum computation using 2D materials
Homepage: https://www.physics.nus.edu.sg/staff/barbaros.html

A/P ZHAO Yanli
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Research Title: Smart supramolecular prodrug systems for combination cancer theranostics
Homepage: http://www.ntu.edu.sg/home/zhaoyanli/Yanli_Zhao_Research_Group/Yanli_Zhao.html

A/P SUM Tze Chien
Nanyang Technological University
School of Physical and Mathematical Sciences

Research Title: Towards >44% Perovskite Solar Cells
Homepage: www.ntu.edu.sg/home/tzechien/spms/research_group.html
Dr Arseniy KUZNETSOV  
Agency of Science, Technology and Research  
Data Storage Institute  
Research Title: Sub-wavelength-resolution spatial light modulators based on active nanoantennas and metasurfaces  
Homepage: https://researchers.a-star.edu.sg/userprofile.aspx?userid=8121  

Dr Florent GINHOUX  
Agency of Science, Technology and Research  
Singapore Immunology Network  
Research Title: IPSC-derived tissue organoids as a platform to model and study neurodegenerative disorders  
Homepage: https://www.a-star.edu.sg/sign/Research/Principal-Investigators/tid/5.aspx  

Dr Nicholas BARKER  
Agency of Science, Technology and Research  
Institute of Medical Biology  
Research Title: Identifying Novel Lgr5+ Stem Cell Populations & Evaluating their Roles in Epithelial Homeostasis, Repair and Cancer  
Homepage: https://www.a-star.edu.sg/imb/Research/tid/7/Epithelial-Stem-Cells.aspx  

Prof GONG Jiangbin  
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Department of Physics  
Research Title: Quantum control approach to new topological phases of matter  
Homepage: http://www.physics.nus.edu.sg/~phygj/
Prof David SILVER  
Duke-NUS Medical School  
Cardiovascular & Metabolic Disorders Programme  

Research Title: Mechanism-based molecular lipid nutrition and therapeutics for healthy brain development and function  
Homepage: https://www.duke-nus.edu.sg/cvmd/content/david-silver

A/P Fidel COSTA  
Nanyang Technological University  
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Research Title: Calibrating the lifetimes of magma reservoirs below active volcanoes  
Homepage: http://www.earthobservatory.sg/people/fidel-costa

Prof CHEN Xiaodong  
Nanyang Technological University  
School of Materials Science and Engineering  

Research Title: Conformal electronic devices based on silk protein: Adding autonomy to an ancient material  
Homepage: http://www.ntu.edu.sg/home/chenxd/

Prof Srinivasan MADHAVI  
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Research Title: Water-based rechargeable battery chemistries for new generation of safe, high energy density sustainable energy storage devices  
Homepage: http://web.mse.ntu.edu.sg/homepages/madhavi/

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Research Title: Structurally and chemically controlled G-quadruplex DNA: Understanding and application in therapeutics  
Homepage: http://www.ntu.edu.sg/home/phantuan/
A/P LOK Shee Mei
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*Emerging Infectious Diseases Program*

Research Title: Understanding Possible Structural Variations of Dengue Virus Particles and Their Implications in the Design of Effective Vaccine and Therapeutic Agents

Homepage: [https://www.duke-nus.edu.sg/content/lok-shee-mei](https://www.duke-nus.edu.sg/content/lok-shee-mei)

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Prof YU Hao
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*Department of Biological Sciences*

Research Title: Unravelling the Mechanism of Macromolecular Trafficking in Plants

Homepage: [http://www.dbs.nus.edu.sg/staff/yuhao.htm](http://www.dbs.nus.edu.sg/staff/yuhao.htm)

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Prof YAN Jie
*National University of Singapore*
*Department of Physics*

Research Title: Understanding and Altering Mechanosensing of Cells


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Prof LOU Xiong Wen, David
*Nanyang Technological University*
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Research Title: Metal-Organic Frameworks-Derived Functional Materials for Electrochemical Energy Storage and Conversion

Homepage: [http://www.ntu.edu.sg/home/xwlou/](http://www.ntu.edu.sg/home/xwlou/)

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Prof LEE Pooi See
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Research Title: Deformable Electronic Materials and Devices for Human Machine Interface

Homepage: [http://www.ntu.edu.sg/home/pslee/](http://www.ntu.edu.sg/home/pslee/)
Prof CHI Yonggui, Robin  
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Research Title: Opportunities with Carbene Organocatalysis: New Activation Modes & Metal-Free Rapid Green Access to Functional Molecules  
Homepage: [http://www.ntu.edu.sg/home/robinchi/](http://www.ntu.edu.sg/home/robinchi/)

Prof PHEE Soo Jay, Louis  
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Research Title: Extending the Reach of Flexible Robotic Surgery  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile /Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE](http://research.ntu.edu.sg/expertise/academicprofile /Pages/StaffProfile.aspx?ST_EMAILID=MSJPHEE)

Prof Hilmi Volkan DEMIR  
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Research Title: Emerging Colloidal Quantum Optoelectronics of Solution-Processed Atomically-Flat Nanocrystals  
Homepage: [http://research.ntu.edu.sg/expertise/academicprofile /Pages/StaffProfile.aspx?ST_EMAILID=HVDEMIR](http://research.ntu.edu.sg/expertise/academicprofile /Pages/StaffProfile.aspx?ST_EMAILID=HVDEMIR)
Prof LOH Kian Ping  
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Research Title: Graphene Oxide: a New Class of Catalytic, Ionic and Molecular Sieving Material  
Homepage: [https://www.chemistry.nus.edu.sg/people/academic_staff/lohkp.htm](https://www.chemistry.nus.edu.sg/people/academic_staff/lohkp.htm)

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Prof LIU Bin  
*National University of Singapore*  
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Research Title: Aggregation Induced Emission: A Revolutionary Path to Molecular Probes and Theranostic Nanoplatforms  
Homepage: [http://www.chbe.nus.edu.sg/faculty/cheliub](http://www.chbe.nus.edu.sg/faculty/cheliub)

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Prof XIONG Qi Hua  
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Research Title: Expanding the toolbox of laser cooling towards the next-generation optical refrigeration  

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Prof Christos PANAGOPOULOS  
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Research Title: Magnetic Interactions for Spin Topology  
Homepage: [http://phynelab.org/Staff/christos-panagopoulos/](http://phynelab.org/Staff/christos-panagopoulos/)

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Prof Markus WENK  
*National University of Singapore*  
*Department of Biochemistry and Department of Biological Sciences*  

Research Title: Defining Natural Boundaries of Lipidomic Variations  
Homepage: [http://bch.nus.edu.sg/bchmrw.htm](http://bch.nus.edu.sg/bchmrw.htm)
A/P Paul MACARY
National University of Singapore
Yong Loo Lin School of Medicine

Research Title: Molecular Engineering of Fully Human Monoclonal Antibodies

Prof Kanaga SABAPATHY
Duke-NUS Medical School
Cancer & Stem Cell Biology Program

Research Title: Unravelling the Mechanistic Basis of Tumour Suppression vs. Tumour Promotion by p73 - a Paradigm for Cell-fate Choice by Transcription Factors
Homepage: https://www.duke-nus.edu.sg/content/sabapathy-kanaga