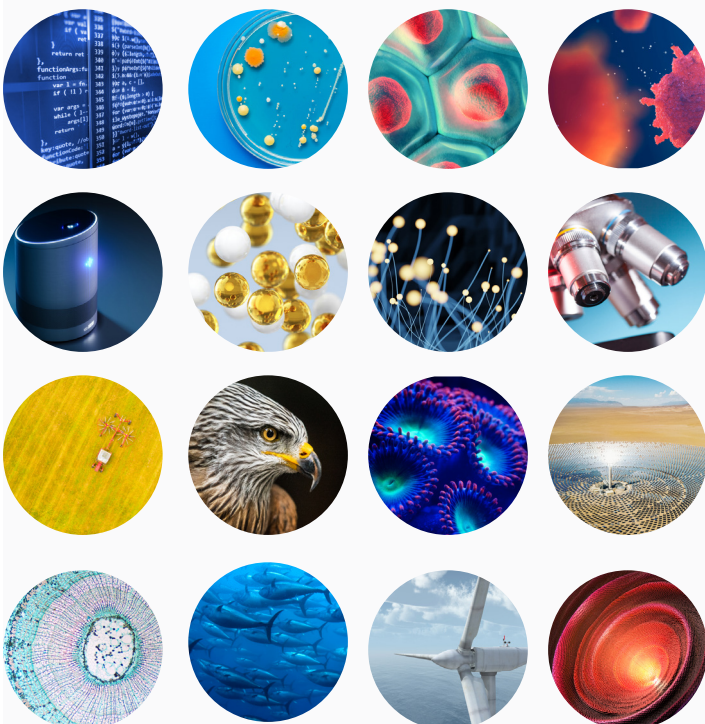


Young Scientists

The Young Scientists Community
at the Annual Meeting of the New
Champions 2018



20
18

The Young Scientists Community brings together the most forward-thinking and celebrated scientific minds in the world.

Table of Contents

Class of 2018	02 - 07
Class of 2017	08 - 10

Each year, the World Economic Forum selects a group of extraordinary scientists under the age of 40 for their contributions to advancing the frontiers of science and passion for integrating scientific knowledge into society for the public good.

Trusted to be the next-generation of science leaders from across academic disciplines and continents, they are joining a community and a two-year journey of growth and impact, committed to promoting a healthier, more sustainable, inclusive and equitable future.

Young Scientists

20
188



Enass Abo-Hamed

Fellow, Royal Academy of Engineering, Imperial College London

Enass is developing safe and low-cost hydrogen production and storage technologies to increase access to clean and reliable power across the globe.

[#nanoengineering](#)
[#energystorage](#)



Shahzada Ahmad

Ikerbasque Professor, Basque Center for Materials, Applications & Nanostructures

Shahzada is designing materials for energy conversion, storage and conservation and is pioneering a new generation of light harvesters to advance the fabrication of cost-effective solar cells.

[#novelmaterials](#)
[#energyconversion](#)



Jill Baumgartner

Associate Professor, Department of Epidemiology, Biostatistics and Occupational Health, McGill University

Jill is using measurements and models to evaluate environmental risks in cities and rural areas to provide evidence to design better energy, climate and health interventions.

[#environmentalhealth](#)
[#sustainability](#)



Fiona Beck

Researcher, Nanophotonics for Renewable Energy, Australian National University

Fiona is converting light into other forms of energy to develop more efficient solar fuels and photodetection technologies with enhanced functionalities.

[#nanophotonics](#)
[#solarfuels](#)



Michael Janus Bojdys

Assistant Professor, Functional Nanomaterials Group, Humboldt University of Berlin

Michael is developing materials for the next generation of electronics that combine useful electronic properties without the need for rare, hard-to-come-by resources.

[#nanoengineering](#)
[#nanomaterials](#)



Rona Chandrawati

Scientia Fellow; Senior Lecturer, University of New South Wales

Rona is developing nanotechnology sensors to simplify the early detection of life-threatening diseases and to alert consumers to food contamination.

[#nanotechnology](#)
[#lifesavingsensors](#)



Vinet Coetzee

Senior Lecturer, University of Pretoria

Vinet is developing non-invasive diagnostic tools that can screen for diseases like malaria with no need for blood, electricity or highly-skilled health workers.

[#biomedicine](#)
[#malaria](#)



Rubén Costa

Senior Researcher, Madrid Institute for Advanced Studies of Materials

Rubén is developing the next-generation of bio-LEDs, aiming to eliminate the need for toxic, polluting and finite rare-earth metals in the world's artificial lighting.

[#nanotechnology](#)
[#bioLEDs](#)



Ding Ai

*Professor,
Tianjin Medical University*

Ding Ai is researching the mechanisms responsible for the development of cardiovascular disease, in particular the still unclear development of atherosclerosis, a major cause of death worldwide.

[#physiology](#)
[#cardiovascular diseases](#)

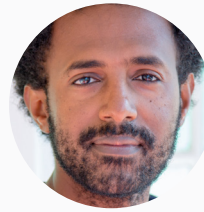


Duan Xuexin

*Professor,
Tianjin University*

Duan Xuexin is developing micro and nano devices and systems for biosensing and biomedical applications such as early cancer diagnosis and gas detection.

[#biomedicine](#)
[#biosensing](#)



Yabebal Fantaye

*AIMS ARETE
Research Chair,
African Institute for
Mathematical Sciences*

Yabebal is applying artificial intelligence to cosmological data sets in order to unravel the formation of the universe and to satellite images of the Earth in order to monitor African development progress.

[#cosmology](#)
[#Africandevlopment](#)



Tomislav Friscic

*Associate Professor,
McGill University*

Tomislav is developing novel solvent-free chemical alternatives that will provide clean, energy-efficient routes for manufacturing chemicals across industries, from pharmaceuticals to fuels.

[#materialschemistry](#)
[#cleanenergy](#)

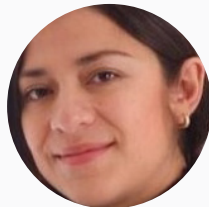


Aoife Ann Gowen

*Associate Professor,
University College
Dublin*

Aoife is using imaging techniques that detail the spectrum of each pixel to better understand biological systems, with applications ranging from food safety to the diagnosis of prostate cancer.

[#biomaterials](#)
[#health](#)



Janet Gutierrez Uribe

*Department Head,
Bioengineering and
Science, Monterrey
Institute of Technology
and Higher Education*

Janet is identifying and characterizing the chemical composition of bioactive compounds in foods to better prevent chronic and degenerative diseases.

[#foodengineering](#)
[#nutrition](#)



Søren Hauberg

*Associate Professor,
Technical University of
Denmark*

Søren is researching machine learning and computer vision to build AI that allows humans to comprehend why an intelligent system performs a given action, increasing accountability.

[#artificialintelligence](#)
[#machinelearning](#)



He Guojun

*Assistant Professor,
The Hong Kong
University of Science
and Technology*

He Guojun is applying cutting-edge econometric and statistical models to quantify the health impacts of air pollution in China.

[#mathematicalmodelling](#)
[#healthpollution](#)



Alison Hill

*Research Fellow,
Harvard University*

Alison is building mathematical and computational models to help design better treatments and control programmes for infectious diseases such as HIV/AIDS.

[#computationalmodelling](#)
[#HIVAIDS](#)



Daniel E. Hurtado

*Associate Professor,
Pontificia Universidad
Catolica de Chile*

Daniel is developing novel computational tools that can dramatically improve the diagnosis and management of respiratory diseases.

[#computationalmodelling](#)
[#respiratorydiseases](#)



Lamis Jomaa

*Assistant Professor,
American University of
Beirut*

Lamis is examining the linkages between food insecurity, migration and human health outcomes to influence community-based nutrition interventions.

[#nutritionalscience](#)
[#foodsecurity](#)



Pierre Karam

*Assistant Professor,
American University of
Beirut*

Pierre is integrating biosensors into smartphones in order to monitor and control waterborne and infectious diseases in real time in resource-limited settings.

[#analyticalchemistry](#)
[#biosensors](#)



Sang Ah Lee

*Assistant Professor,
Korea Advanced Institute
of Science and
Technology*

Sang Ah is studying how spatial intelligence and memory change over time and is developing ways to enhance cognition for Alzheimer's treatment and neurodevelopmental disorders.

[#neuroscience](#)
[#Alzheimer's](#)



Po-Shen Loh

*Associate Professor,
Carnegie Mellon
University*

Po-Shen is advancing core theory in mathematics to deploy practical solutions such as delivering free personalized learning systems through smartphones.

[#mathematics](#)
[#learningtech](#)



Julia Makinde

*Postdoctoral
Research Associate,
Imperial College London*

Julia is using next-generation computational and immunological tools to aid the design of vaccines and therapies against pathogens such as HIV.

[#immunology](#)
[#vaccines](#)



Matthew Mckay

*Professor, Electronic and
Computer Engineering,
The Hong Kong
University of Science and
Technology*

Matthew is applying big data and modelling to inform intelligent vaccine design, which has the potential to speed up the search for effective HIV and Hepatitis-C vaccines.

[#computationalimmunology](#)
[#vaccines](#)



Prineha Narang

*Professor,
Harvard University*

Prineha is designing materials at the smallest scale, using single atoms, to make the leap to quantum technologies that will enable faster, smaller and more-energy efficient devices.

[#quantum](#)
[#energyefficiency](#)



Sidy Ndao

*Associate Professor,
University of Nebraska,
Lincoln*

Sidy is developing the first thermal computer which – powered by heat rather than electricity – could allow data recording from the surface of planets close to the sun or beneath the surface of the Earth.

[#nanoengineering](#)
[#thermalcomputing](#)



Michael Niemack

*Associate Professor
of Physics,
Cornell University*

Michael is studying the birth and evolution of the cosmos by designing and building telescopes that measure the oldest light in the universe.

[#cosmology](#)
[#quantsensors](#)



Juan Pedro Ochoa Ricoux

*Assistant Professor,
Pontificia Universidad
Catolica de Chile*

Juan Pedro is studying neutrinos – ghost particles that permeate the space around us – in the hope to learn more about the events and processes that produced them, both inside and outside our planet.

[#particlephysics](#)
[#neutrinos](#)



Amy Ogan

*Assistant Professor of
Human-Computer
Interaction, Carnegie
Mellon University*

Amy is delivering culturally relevant, adaptive learning technologies that could help educate millions of underserved learners every year.

[#computerscience](#)
[#learningtech](#)



Rodney Dewayne Priestley

*Associate Professor,
Princeton University*

Rodney is developing sustainable processes to engineer the function and properties of nanostructured colloids that will improve the delivery and efficacy of active molecules in drug delivery and healthcare formulations.

[#nanoengineering](#)
[#novelmaterials](#)



Simone Schuerle

*Assistant Professor of
Responsive Biomedical
Systems, ETH Zurich*

Simone is developing mirco- and nanorobots that could be introduced to the body, helping to diagnose and treat diseases more locally and effectively.

[#biomedicine](#)
[#nanorobots](#)



Mahyar Shirvanimoghaddam

*Academic Fellow,
University of Sydney*

Mahyar is developing an ultra-low power communication strategy to replace batteries with piezoelectric materials – materials that accumulate charge from vibrations in their environment.

[#electricalengineering](#)
[#internetofthings](#)



**Marcos
Simoes-Costa**

*Assistant Professor,
Cornell University*

Marcos is decoding the molecular programming involved in early human development to better inform stem cell therapy for the repairing and regeneration of organs and tissues.

[#molecularcellbiology](#)
[#organrepair](#)



Alex Thompson

*Lecturer,
Imperial College London*

Alex is developing light-based sensors to improve the diagnosis and monitoring of gut conditions ranging from malnutrition to cancer.

[#biophotonics](#)
[#diagnostictools](#)



Angela Wu

*Assistant Professor,
The Hong Kong
University of Science
and Technology*

Angela is studying the genetic information in individual cells to generate new insights into complex biological systems such as embryonic development, sepsis and cancer.

[#bioengineering](#)
[#geneediting](#)



Yang Na

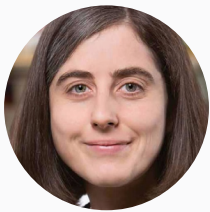
*Professor, State Key
Laboratory of Medicinal
Chemical Biology, Nankai
University*

Yang Na is researching how environmental factors cause heritable changes in DNA and how this relates to diseases in humans in order to better identify drug targets.

[#biophysics](#)
[#drugdesign](#)

Young Scientists

20
17



Nicola Allen

*Assistant Professor,
The Salk Institute for
Biological Studies*

Nicola studies astrocytes, or brain glue – the cells that make up half of the brain but are often ignored – to develop new treatments for brain conditions such as autism and Alzheimer’s disease.

[#neuroscience](#)
[#braindisorders](#)



Marta Cerruti

*Associate Professor,
McGill University*

Marta is studying the process of bone formation and using these insights to develop materials that mimic the body, thus enabling better implant integration and drug delivery.

[#chemistry](#)
[#drugdelivery](#)



Ding Xianting

*Professor,
School of Biomedical
Engineering, Shanghai
Jiao Tong University*

Ding Xianting is working on solutions to advance personalized and precision medicine, such as biosensors for early disease detection, optimizing drug combinations and interactions, and modernizing traditional Chinese medicine.

[#biomedicine](#)
[#precisionmedicine](#)



Kyle Elliott

*Assistant Professor,
McGill University*

Kyle is investigating what Arctic seabirds can tell us about climate change in the Arctic to design marine policies that benefit wildlife and ensure the sustainability of food, water and the environment in Arctic communities.

[#ecology](#)
[#Arctic](#)



Gregory Engel

*Professor,
University of Chicago*

Gregory is developing new quantum technologies that are inspired by design principles found in nature and that have the potential to inform new methods of controlling and steering chemical reactivity.

[#biophysics](#)
[#quantumtech](#)



Rafael Guido

*Assistant Professor,
University of
São Paulo*

Rafael is employing computational and experimental methods to discover and develop new drugs for infectious diseases such as malaria and Zika.

[#biophysics](#)
[#malaria](#)

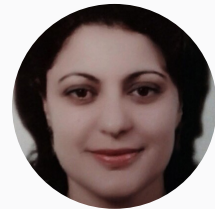


Yoshihiro Kawahara

*Associate Professor,
The University of Tokyo*

Yoshihiro is using machine learning technology to design applications such as smart home controllers and wireless power transmission.

[#computerengineering](#)
[#internetofthings](#)



Rym Kefi

*Associate Professor,
Institut Pasteur
de Tunis*

Rym is investigating the genetic basis of type-2 diabetes in order to improve the healthcare of more than 400 million diabetes patients worldwide.

[#genetics](#)
[#diabetes](#)



Katherine Kinzler

*Associate Professor,
Cornell University*

Katherine is investigating the developmental origins of social understanding and how early experiences influence later social behaviour, such as prejudice and xenophobia.

#psychology
#socialbehaviors



Andrey Kruglov

*Senior Staff Scientist,
M.V. Lomonosov
Moscow State University*

Andrey is developing tools to understand how interactions between the immune system and the microbiome may inform the treatment and management of diseases such as diabetes and multiple sclerosis.

#immunology
#microbiome



Jenny Lee Hyun-Joo

*Assistant Professor,
School of Electrical
Engineering, Korea
Advanced Institute of
Science and Technology*

Jenny is using neuro-engineering to develop solutions that could help autistic children interact, delay the onset of Alzheimer's disease, or enable amputees to walk without pain.

#neuroengineering
#disabilities



Sheng Li

*Assistant Professor,
Korea Advanced
Institute of Science
and Technology*

Sheng is combining artificial and natural polymers to create materials with unique functionalities, such as quickly detecting viruses in airports or hospitals.

#novelmaterials
#nanomaterials



Tammy Ma

*Lead, Inertial
Confinement Fusion,
X-Ray Analysis Group,
Lawrence Livermore
National Laboratory*

Tammy is building a miniature sun on Earth to harness thermonuclear fusion, which will provide a clean, carbon-free, limitless energy source for humankind.

#experimentalphysics
#fusionenergy



Kristen Marhaver

*Associate Scientist,
Caribbean Research
and Management of
Biodiversity*

Kristen is working to protect and restore coral reefs by developing probiotics, 3-D printed settlement surfaces, and advanced reproductive technologies to increase the survival of juvenile corals.

#marinebiology
#coralreefs



Marianna Obrist

*Professor of Multisensory
Experiences, Informatics,
University of Sussex*

Marianna is researching how touch, taste and smell can be integrated into interactive technologies to bring new insights into the experiential dimensions underlying neurological processes and human perception.

#informatics
#interactivetech



Yang Fan

*Professor, Dalian Institute
of Chemical Physics*

Yang Fan is designing a next-generation catalyst capable of greatly reducing the environmental pollution produced by current industrial plants.

#chemicalphysics
#catalysts