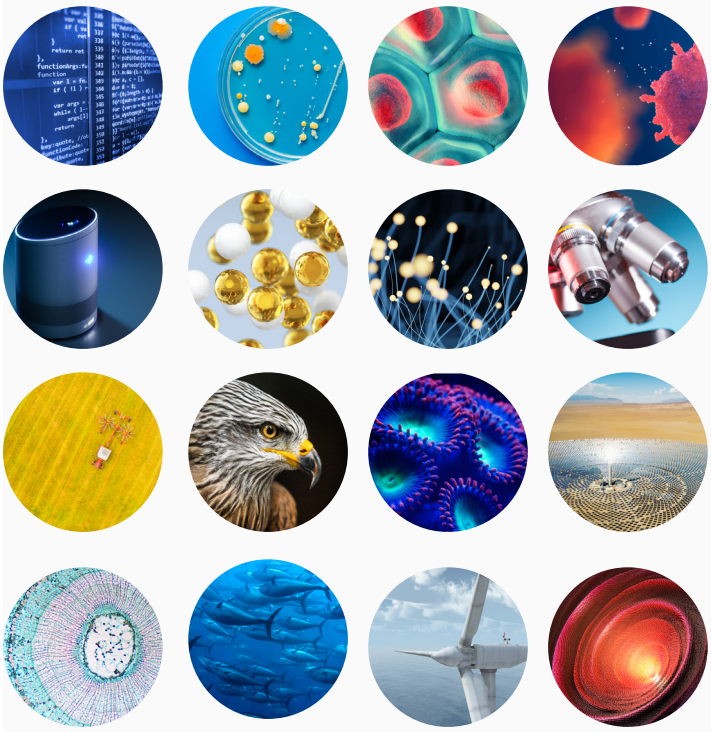
WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Young Scientists

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



2018

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

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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

2018

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.

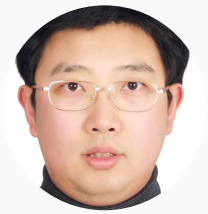
#nanotechnology
#bioLEDs

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
#cardiovasculardiseases



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
#Africandevelopment

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 pharma-ceuticals 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 Gutierez 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
#quantumsensors

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

2017

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.

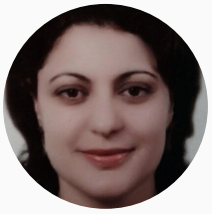
#biophysics
#malaria

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