SCIENCE: DRIVER OF INNOVATION

2015 & beyond
FOURTH INDUSTRIAL REVOLUTION

2000 & beyond
Knowledge-driven Economy

1980s & 1990s
Developing Economy

1960s & 1970s
Underdeveloped Economy
Flexible Curriculum
Our flexible curriculum provides students varied learning opportunities, catering to individual interests and industry requirements. Our myriad choices include double degrees, double majors, joint degrees, concurrent bachelor’s and master’s degrees, minors, multidisciplinary and cross-faculty programmes, as well as special programmes and undergraduate research programmes. Over 70% of students participate in study abroad programmes, broadening their intellectual and global outlook. We continue to increase our suite of academic programmes to provide students with the breadth and depth of educational training to face an increasingly complex future.

Career Readiness Programmes
We have enhanced our preparation of students for the workplace by providing more experiential learning opportunities.

Our flagship Undergraduate Professional Internship Programme (UPIP) and Honours year Applied Project comprise structured credit-bearing internship modules offering on-the-job training at renowned local and international organisations. We regularly organise industry events, like Science Industry Day, Industry Sharing Series, recruitment talks and trade fairs where students meet industry practitioners from diverse sectors and hiring managers on career prospects as part of their professional development. Programmes like the IoT Datathon enable students to apply their learning to develop solutions that address real industry challenges.

Alumni Networking
We organise various initiatives to encourage alumni to stay connected, while providing them meaningful ways to engage our students. These include Alumni GO OUT outdoor excursions, Single Mingle workshops, Science Alumni-Student Networking Evening for our alumni to share their working experiences, and Industry Networking Sessions where our alumni are updated on industry developments.

NUS’ Transformative Science Education goes beyond helping students acquire knowledge, by nurturing in them the passion for lifelong learning. This equips students to be future-ready, thereby providing them an excellent foundation to start their careers in today’s globalised workplace.
Some science graduates choose to enter the teaching profession. They have educated generations of students and enjoy good career progression as educators. By imparting knowledge they help to inspire and nurture the next generation of scientists and leaders.

**Resma Bte GULZAR MOHD**  
Subject Head (Biology)  
Anderson Junior College  
*B.Sc. in Biology (2003); NUS-Australian National University Joint M.Sc. in Science Communication (2011)*

Resma plans and implements the Biology curriculum at Anderson Junior College. Previously, as a Curriculum Development Officer at the Ministry of Education, she worked on aligning syllabi to global and local industry trends.

*“With my science background, I learnt to always look for ways to improve teaching and learning. I also integrated more experiential learning, through field trips to Bishan Park and biodiversity trails to Sungei Buloh.”*

**Nicholas TAN**  
Lecturer  
School of Business and Accountancy  
Ngee Ann Polytechnic  
*B.Sc. in Chemistry (2002)*

Nicholas teaches mainly entrepreneurship-related modules. He hopes to nurture aspiring entrepreneurs to fulfil their dreams of starting their own businesses in the future.

*“My science training taught me to be analytical and patient. These skills are highly relevant as I seek to encourage our young minds to be receptive and open to learning opportunities in today’s fast-paced world.”*

**GOH Hock Leong**  
Deputy Principal (Academic)  
NUS High School of Mathematics and Science  
*B.Sc. (Hons) in Physics (1998); M.Sc. in Physics (1999)*

Hock Leong oversees academic matters including curriculum development, nurturing student talent, research, global partnerships and admissions.

*“I gained mentorship experience through NUS Science’s Special Programme in Science. As an educator, I can pay it forward for what I received from my own education. It is fulfilling to be able to play a part in grooming world-ready scientific minds for the future.”*
Discipline-Based Careers

The NUS Department of Chemistry offers a broad-based curriculum grounded in both experimental applications and theoretical studies. You will acquire a strong foundation in each of the four key branches of chemistry, namely: Analytical, Inorganic, Organic and Physical Chemistry. You will have the opportunity to undertake research in areas like renewable energy, food sustainability, better medicines and next-generation materials, to address global challenges such as climate change, the energy crisis and diseases.

Chemistry, a key economic pillar in Singapore, is vital to the petroleum, pharmaceutical, chemical processing and manufacturing industries. This programme will prepare you for a wide range of career opportunities in these sectors, in both scientific and non-technical domains.

From Academic Year 2017/2018, we are offering direct admissions to a new Double Major programme in Chemistry-Food Science to prepare students for the fast-growing food industry.

Possible Careers
Chemical scientist/engineer  
Environmental protection scientist  
Educator  
Forensic scientist  
Materials scientist  
Patent specialist  
Quality control scientist  
Researcher  
Water treatment scientist

Examples of Industries / Sectors
Biochemicals  
Chemicals  
Education  
Energy  
Engineering  
Government agencies¹  
Manufacturing  
Pharmaceuticals  
Research and development  
Specialty chemicals

Kelvin LING  
Sales Manager  
Oiltanking Singapore Ltd  
*B.Sc. (Hons) in Chemistry; Minor in Management (2011)*

Kelvin maintains client relationships, negotiates storage and service agreements, reviews market developments and customer portfolios, and contributes to improving the terminal’s performance.

“The versatility of science training enables me to adapt and multitask in areas beyond my expertise. This is crucial to navigate the complex and fast-paced world of business.”

Kenneth ANG  
Technical Development Chemist  
Glaxo Wellcome Manufacturing Pte Ltd  
*B.Sc. (Hons) in Chemistry (2008); M.Sc. in Chemistry (2010)*

Kenneth optimises chemistry processes to support manufacturing activities. This ensures a sustainable supply of quality medicines to meet global demand, and compliance of manufacturing activities to required standards.

“My hands-on exposure to chemistry experiments equipped me with the skills to make specific observations which I relate to analytical data generated by advanced instrumentation. I am able to determine root causes of failure events or deviations from normal process parameter trends. This contributes to good manufacturing practices.”

Dr Wendy LEONG  
Patent Scientist  
Yusarn Audrey  
*B.Sc. (Hons) in Chemistry (2009); Ph.D. in Chemistry (2013), Nanyang Technological University; Graduate Certificate in Intellectual Property Law (Merit) (2014)*

Wendy assists clients on intellectual property (IP) strategies. Her work includes registering patents locally and overseas, drafting patent specifications, as well as protecting, commercialising and realising value from her clients' IP assets.

“My education in polymer chemistry, pharmacokinetics and chemical biology serves me well in carrying out patent work for local and international companies, universities and research institutes. I help clients secure patents for their inventions. In a knowledge economy, IP is an investment asset that empowers business growth.”
The Data Science and Analytics programme offered by the NUS Department of Mathematics and the Department of Statistics and Applied Probability in the Faculty of Science, in conjunction with the Department of Computer Science in the School of Computing, is the first in Singapore. The four-year direct Honours programme is designed with sufficient technical depth to equip you with analytical tools and techniques to solve complex data-science problems in various sectors and domains, and the skills to communicate insights using visualisation tools. You can opt for the NUS Co-operative Education Programme, which relates theory to real-world issues through a structured sequence of credit-bearing internships.

The programme grooms data scientists with interdisciplinary expertise in statistics, mathematics and computer science, to turn data into actionable insights for businesses. There are career opportunities in Smart Nation-related work and diverse industries and organisations that require extensive data collection, processing and analysis for informed decision-making.

A new Second Major in Data Analytics is being offered from Academic Year 2017/2018 for Academic Year 2016/2017 and subsequent cohort.

### Possible Careers
- Actuary
- Artificial intelligence specialist
- Big Data analyst
- Big Data engineer
- Biostatistician
- Business analytics specialist
- Business intelligence specialist
- Consumer insights analyst
- Data analytics specialist
- Data scientist
- Data visualisation scientist
- Educator
- Machine learning scientist
- Market intelligence specialist
- Statistician

### Examples of Industries / Sectors
- Biomedical sciences
- Consumer businesses
- Clean technology
- Education
- Financial services
- Government agencies
- Healthcare
- Infocommunication technologies
- Insurance
- Manufacturing
- Media
- Pharmaceuticals
- Research and development
- Safety and security
- Telecommunications
- Transportation

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Some of our graduates have established successful careers in data science-related fields.

**Arnold DORAY**  
Chief Executive Officer  
Terra Weather  
*B.Sc. in Physics, Minor in Fluid Dynamics (1994)*  
*Master of Technology in Knowledge Engineering (2002)*

Arnold’s team utilises weather modelling technologies to support offshore oil and gas operations through timely advice on global weather conditions. The team also develops predictive deep-learning models for weather-based phenomena.

“*Through data analytics and artificial intelligence, we provide reliable weather forecasts and predictive solutions that ensure the safety and success of our clients’ operations worldwide.*”

**Dr Eric SANDOSHAM**  
Founder and Partner  
Red & White Consulting Partners LLP  
*B.Sc. (Hons) in Mathematics (1995); M.Sc. in Statistics (2002)*  
*Ph.D. in Business (General Management) (2017), Singapore Management University*

Eric’s boutique consulting firm specialises in transformational business intelligence and analytics that enable organisational growth.

“I provide data-driven solutions for clients across the Asia Pacific in diverse industries. I blend the art and science of analytics to ‘connect the dots’ between People, Products and Profits.”
The internationally accredited NUS Food Science and Technology programme is a multidisciplinary course which enables you to acquire specialised and hands-on knowledge of the science and technology of food, especially in the areas of food safety, new food product development, food processing and nutrition.

Our new Second Major in Food Science, offered through direct admissions from Academic Year 2017/2018, provides training and applied perspective in food analysis, and flavour science and nutrition. Upon graduation, you will be well-equipped for specialised and broad-based management and operational careers in today's booming food industry, which has an average annual turnover of more than $10 billion.

Discipline-Based Careers
FOOD SCIENCE AND TECHNOLOGY

Possible Careers
Educator
Flavourist
Food scientist
Food specialist
Food technologist
Nutritionist
Regulatory affairs officer
Researcher

Examples of Industries / Sectors
Consumer insights and marketing
Consumer products
Education
Flavours and fragrances
Food ingredients
Food production and processing
Government agencies¹
Healthcare
Pharmaceuticals
Quality control
Research and development
Testing laboratories

¹Agency for Science, Technology and Research, Agri-Food & Veterinary Authority, Health Promotion Board, Health Sciences Authority, Ministry of Education, Ministry of Health are some examples.
YAP Pei Yi
Associate Scientist
Mondelēz International
B.Appl.Sc. (Hons) in Food Science and Technology (2014)

Pei Yi develops products for gum and candy brands in Asian markets, such as Japan, Thailand and China. She designs and executes stability and analytical studies for formula development, and ensures the successful scale-up of laboratory prototypes in factories.

“As food scientists, we develop nutritious food products to promote health, ensure sustainability by sourcing new ingredients, and reduce wastage by prolonging shelf life. This ensures that food is safe and wholesome for consumption.”

Angela LI
Deputy Laboratory Director (Food Safety Division), Applied Sciences Group
Health Sciences Authority (HSA)
B.Appl.Sc. (Hons) in Food Science and Technology (2005)
M.Sc. in Chemistry (2012)

HSA’s food safety laboratory complements the Agri-Food & Veterinary Authority of Singapore’s national food safety programme and supports emerging food safety concerns. Angela develops analytical testing methods and leads research and development work to assess food safety.

“Science is the driver behind the entire food chain, from farm to fork. This includes the use of agricultural science, to post-harvest technology, food engineering, food quality assurance and human metabolism. My career is meaningful as it directly impacts Singapore’s food safety.”
The NUS Life Sciences programme is an interdisciplinary course covering biomedical science, environmental biology, and molecular and cell biology. It is jointly taught by eight departments at the Faculty of Science (Departments of Biological Sciences, Chemistry, and Statistics and Applied Probability) and Yong Loo Lin School of Medicine (Departments of Anatomy, Biochemistry, Microbiology and Immunology, Pharmacology, and Physiology). You can choose to specialise in any of these areas.

You will acquire a solid foundation in the fundamental concepts vital to all areas of life sciences, as well as the latest laboratory and research techniques relevant to the rapidly changing world of biosciences.

The life sciences industry is one of the key pillars of our economy. Upon graduation, you can consider diverse career opportunities in government agencies and the private sector, locally and internationally, spanning many areas including biotechnology, environmental sustainability, etc.

### Discipline-Based Careers

#### LIFE SCIENCES

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Sylvia CHIANG
Cluster Training and Compliance Manager
Novartis Asia Pacific Pharmaceuticals Pte Ltd
*B.Sc. (Hons) in Life Sciences (2011)*

Sylvia specialises in monitoring early phase oncology clinical trials. She also supports the implementation and improvement of Novartis’ training and compliance programmes, focusing on trial monitoring, training and excellence.

“I gained a firm foundation in clinical trial monitoring across various therapeutic areas, especially oncology. My studies in drug discovery, cancer pharmacology and clinical trials are highly relevant to understanding the scientific background in clinical trial protocols. This puts me on the frontline, bringing innovative medicine to patients.”

Dr Karenne TUN
Director (Coastal and Marine Branch)
National Biodiversity Centre
National Parks Board
*B.Sc. (Hons) in Zoology (1994); Ph.D. in Biological Sciences (2013)*

Kareanne specialises in coral reef monitoring, restoration and management. She undertakes conservation efforts of Singapore’s coastal and marine environment, to safeguard our biodiversity. Her team also organises public engagement initiatives to encourage environmental stewardship.

“My interest in the marine environment was ignited as an undergraduate. Field trips allowing interaction with the environment developed my love for nature. Singapore’s marine ecosystem is becoming even more prolific today. It’s not a profession, but a passion. I hope to continue enhancing coral reef areas in Singapore and around the world, and pushing the blue agenda.”

Shamir RAHIM
Founder and CEO, VersaFleet Pte Ltd
*B.Sc. (Hons) in Life Sciences; Minor in Technopreneurship (2007)
M.Sc. in Supply Management (2016)*

Shamir founded VersaFleet in 2012 after helping to launch several biomedical startups. VersaFleet™ automates the world’s logistics operations, using a SaaS transport management system to advance the global supply chain from ground up. This powers thousands of drivers worldwide.

“NUS Science played a pivotal role in helping me achieve my dream to be an entrepreneur. My experience with the NUS Overseas Colleges programme fuelled my passion in technopreneurship. The e-commerce boom has made manual operations planning slow and unsustainable. We aspire to be the ‘Robin Hood’ of logistics, putting world-class technology in the hands of every transporter.”
The NUS Mathematics Department offers a wide range of modules and a broad spectrum of mathematical research activities, some multidisciplinary in nature, in the areas of Pure Mathematics, Applied Mathematics and Quantitative Finance.

In Applied Mathematics, you can choose to specialise in either Mathematical Modelling and Data Analytics, or Operations Research and Financial Mathematics. Upon graduation, you will be competent in dealing with abstract concepts, modelling physical and social phenomena, designing algorithms, analysing and interpreting data, as well as formulating solutions methodically.

The knowledge and transferable skills acquired are relevant to specialists contemplating careers in mathematical science education and research, as well as those interested in applications of advanced mathematics to science, technology and commerce.

### Discipline-Based Careers
**MATHEMATICS, APPLIED MATHEMATICS AND QUANTITATIVE FINANCE**

#### Possible Careers
- Actuary
- Computer programmer
- Cryptanalyst
- Data analyst
- Educator
- Financial analyst
- Financial engineer
- Fund manager
- Quantitative modelling analyst
- Researcher
- Risk management analyst
- Software engineer

#### Examples of Industries / Sectors
- Defence
- Education
- Financial services
- Government agencies
- Infocommunications technology
- Insurance
- Operations management
- Research and development
- Safety and security
- Transportation
- Wealth management

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1 Accounting and Corporate Regulatory Authority, Agency for Science, Technology and Research, Central Provident Fund Board, Info-Communications Media Development Authority, Ministry of Education, Ministry of Finance, Ministry of Transport, Monetary Authority of Singapore, Singapore Department of Statistics are some examples.
GUO Zhijian  
Equity Derivatives Trader  
Macquarie Group  
*B.Sc. (Hons) with Double Majors in Quantitative Finance and Statistics; Minor in Management (2015)*

Zhijian’s work includes pricing, trading and market-making portfolios of stocks and index options stemming from warrants and institutional flows, hedging risks on foreign exchange and interest rates.

“The quantitative and qualitative analytical skills I acquired give me an edge in my career. I price derivatives using mathematical models, seek potential opportunities with statistical methods, maximise risk-adjusted profits, develop front-office trading strategies and analyse market data and trends.”

LIU Jiang  
Senior Actuarial Consultant  
Deloitte Southeast Asia  
*B.Sc. (Hons) with Double Majors in Applied Mathematics and Statistics (2011) M.Sc. in Quantitative Finance (2014)*

Liu Jiang provides technical analysis and specialised advice to create business value and improve the performance of clients’ finance, risk and actuarial portfolios. His work includes mergers and acquisitions, valuation and reserving, and management consulting.

“My course equipped me with specialised financial knowledge, and keen computing and analytical skills that are highly relevant in my work. I provide actuarial modelling services to forecast, assess and plan for future risks. This enables me to manage the financial consequences of risks and secure financial stability for my clients.”

Dr Zenton GOH  
CEO  
Cadi Scientific Pte Ltd  
*B.Sc. (Hons) in Mathematics (1992); Ph.D. in Physics (2000)*

Zenton’s company specialises in wireless sensing and tracking devices for the healthcare sector. Its award-winning flagship product, SmartSense™ uses radio frequency identification technology for real-time location tracking of patients, hospital equipment and contact tracing.

“My science training equipped me with useful life skills such as resilience, adaptability, effective stakeholder communications and business acumen. This enabled me to tap on the growing healthcare sector to develop our breakthrough technologies which improve hospitals’ productivity.”
The NUS Pharmacy Department, the sole provider of university-level pharmacy education in Singapore, trains pharmacists for the local healthcare and pharmaceutical sectors through the B.Sc. in Pharmacy programme. Its theme-based and multidisciplinary curriculum equips students with knowledge and skills to prepare drug substances from natural and synthetic sources, suitable and convenient forms for distribution, and disease management. You will learn how to provide quality care for patients through pre-employment clinical training and internship programmes.

Upon graduation, you can register with the Singapore Pharmacy Council and become a licensed pharmacist. You can also opt for careers in non-patient care domains.

A new B.Sc. in Pharmaceutical Science, a four-year direct honours programme, will be offered through direct admissions from Academic Year 2018/2019, providing broad-based knowledge on drug design, discovery and development, and the regulatory and commercial environment.

**Possible Careers**

**[Patient-Care Practice]**
- Pharmacist

**[Non Patient-Care Areas]**
- Clinical research coordinator
- Quality assurance scientist
- Regulatory specialist
- Research associate

(Some positions in Non Patient-Care Areas may also require you to be a registered pharmacist with the Singapore Pharmacy Council)

**Examples of Industries / Sectors**

**[Patient-Care Practice]**
- Community pharmacies
- Healthcare services
- Hospitals
- Polyclinics

**[Non Patient-Care Areas]**
- Clinical research
- Government agencies¹
- Health product development
- Health product regulation
- Health product research
- Pharmaceutical manufacturing
- Sales and marketing

¹Health Promotion Board, Health Sciences Authority, Ministry of Health, Singapore Pharmacy Council are some examples.
Anson Lim

Senior Pharmacist
Watson's Personal Care Stores Pte Ltd
B.Sc. (Hons) in Pharmacy (2011); Masters of Health Administration, Flinders University (2017)

Anson is the Chief Preceptor in charge of recruiting and training pre-registration pharmacists. He provides advice on the efficacy and safety of medications/health supplements to customers and also supports public education.

“My course equipped me with patient counselling skills and understanding of the entire drug process, from drug discovery to formulation and pharmacology. This enables me to advise consumers on medication usage. As our population ages, community pharmacists play a vital role in providing accessible primary and preventive care to the public.”

Dr. OH Ching Mien

Deputy Manager (Healthcare Business Development) and Pharmacist
ST Healthcare (Subsidiary of ST Logistics Pte Ltd)
B.Sc. (Hons) in Pharmacy (2009); Ph.D. in Pharmaceutical Sciences (2014)

Ching Mien identifies business opportunities, develops supply chain transformational strategies and undertakes stakeholder engagement for the company’s integrated healthcare solutions. He also provides pharmaceutical expertise in clinical decision-making.

“My clinical training, regulatory background and specialist knowledge in issues ranging from solid dosage form manufacturing to executing process validations, can be applied to advanced logistics systems for the healthcare sector. Supply chain technologies reduce healthcare costs by better resource management of drugs and medical devices.”

Dr. THAM Lai San

Principal Research Scientist (Global Pharmacokinetics, Pharmacodynamics and Pharmacoestrics)
Eli Lilly and Company
Lilly-NUS Centre for Clinical Pharmacology Pte Ltd
B.Sc. (Hons) in Pharmacy (1993); M.Sc. in Clinical Pharmacy (1995), University of Manchester; Doctor of Pharmacy (2003), Albany College of Pharmacy, Union University

Lai San is the project leader and research scientist for global drug development, and utilises pharmacoestrics to influence decisions in the clinical development of small and large molecules in various therapeutic areas.

“My basic degree provided me a broad-based foundation to be adept in various areas. These include modelling and simulation techniques, applications of quantitative pharmacology approaches, competitive landscape awareness, and understanding of regulatory requirements, prescribing habits as well as unmet medical needs. These skills serve me well in finding the right dose for the right patient.”
The NUS Physics programme provides a solid foundation covering core topics such as Atomic and Nuclear Physics, Electromagnetism, Nanophysics, Quantum Mechanics, Relativity, Condensed Matter Physics, Thermodynamics and relevant mathematical methods.

You can choose to specialise in either Astrophysics or Nanophysics. You will gain knowledge in advanced numeracy and mathematical literacy, as well as good reasoning skills. Upon graduation, you will be proficient in handling complex ideas and problem-solving. The range of skills acquired can be applied in both scientific and non-technical domains, in the areas of research and development, information technology, engineering and commerce.

**Possible Careers**
- Aerospace analyst
- Computer architecture designer
- Educator
- Engineer
- Geophysicist
- Industrial design planner
- Industrial scheduler
- Instrumentation specialist
- Medical and radiation physicist
- Medical technologist
- Meteorologist
- Quality engineer
- Researcher
- Semiconductor analyst

**Examples of Industries / Sectors**
- Education
- Engineering
- Government agencies¹
- Healthcare
- Infocommunication technology
- Microelectronics
- Physical sciences
- Research and development
- Scientific services
- Semiconductors

Dr LEE Kean Loon
Software Developer
CGG Services (Singapore) Pte Ltd
B.Sc. (Hons) in Physics (2007); Ph.D. in Physics (2011)

Kean Loon maintains the software used by geophysicists to produce subsurface images of the Earth accurately and efficiently. This supports the company’s geological and geophysical capabilities, to help clients from the global oil and gas industry.

“I understand mathematical results from the physics perspective and the accuracy of computation from the mathematical perspective. My combined knowledge of physics, mathematics and computing gives me a differentiating edge in seismic processing, which is important to reduce costs and risks in oil and gas exploration.”

LAI Weichang
Founder, ManyTutors.com
B.Sc. (Hons) in Physics (2008)

Wei Chang founded ManyTutors.com, the largest online marketplace in Singapore that introduces thousands of tuition jobs to tutors and links students with tutors.

“My training equipped me to formulate practical solutions to problems. I was able to launch an innovative tuition-matching model which enables students to easily find tuition groups in their neighbourhood. This saves costs for parents and increases tutors’ earnings. Our site also builds a social network for learning, where students beyond Singapore can access our educational resources.”

Dr WONG Loke Yuen
Global Product Manager
Applied Materials
B.Sc. (Hons) in Physics; Minor in Computing with Scientific Data (2006)
Ph.D. in Physics (2011)

Loke Yuen manages capital equipment products for the semiconductor industry. He is responsible for business planning, and developing marketing strategies and technology roadmaps of his products.

“NUS Science’s flexible curriculum allowed me to take experimental modules, which equipped me with useful skills like laboratory management and organisational skills. My multidisciplinary research projects covering physics, chemistry and materials science prepared me well for industry projects which involve solving technical problems and product development.”
The NUS Department of Statistics and Applied Probability, the only university-level statistics department in Singapore and one of the largest in the world, offers a wide array of modules ranging from theoretical and applied statistics to applied probability.

You can choose to specialise in either Data Science, or Finance and Business Statistics. You will learn principles of, and skills in data analysis that are increasingly important for informed business decision-making and scientific research. Examples include: how to design an experiment to answer a scientific question within resource constraints; how to conduct a survey on citizens' health that will yield reliable conclusions; and how to put together knowledge from experiments and surveys to make predictions about an organisation's future business needs. Upon graduation, you will possess strong statistical and analytical skills and will be well-prepared to manage the deluge of Big Data in diverse businesses and organisations.

**Possible Careers**
- Actuary
- Biostatistician
- Business analyst
- Consumer intelligence analyst
- Consumer risk analyst
- Data scientist
- Educator
- Financial analyst
- Health research analyst
- Marketing research analyst
- Pharmaceutical engineer
- Pricing analyst
- Quality assurance officer
- Researcher
- Statistician

**Examples of Industries / Sectors**
- Aerospace
- Biomedical sciences
- Chemicals
- Education
- Electronics
- Financial services
- Government agencies¹
- Healthcare
- Insurance
- Manufacturing
- Media
- Pharmaceuticals
- Research and development
- Telecommunications
- Transportation

TAY Yu Xuan
Data Scientist
Lazada Group

Yu Xuan develops automated data transformation pipelines to enable data-driven insights and business improvements. He also builds machine learning models to enhance the personalised customer experience.

“My science training provided a strong technical foundation to understand data science advancements and developments. In this fast-moving field, having the aptitude to research, experiment and apply new techniques is essential. My statistics course also equipped me with skills to develop robust methods for analysing a large amount of customer interaction data.”

NEO Han Wei
Data Scientist
DBS Bank
B.Sc. (Hons) in Statistics (2015)

Han Wei works in the Regional Business Analytics team, where he is in charge of building predictive models for the Consumer Banking Groups in Hong Kong, China, Taiwan and Singapore.

“My statistical training equipped me with the skills to build predictive models to manage the bank’s voluminous consumer data. I draw insights from these models to better understand and engage our customers in their journey with us. This involves knowing their personal needs, life stages and experiences, so that we can offer the right products and services at the appropriate time.”

Dr ZHAO Wanting
Principal Statistician
Singapore Eye Research Institute

Wanting conducts large-scale epidemiological, genetics and population-based research projects on major eye diseases. This provides insights into eye health, enabling detection and prevention of common and key eye diseases in children and ageing populations in Singapore and Asia.

“My Ph.D. training in statistics prepared me well for career development. I acquired statistical knowledge, as well as critical thinking and complex problem-solving. The ability to identify problems and find solutions to address these issues is a crucial skill in my current research field.”
NUS offers a four-year programme in Computational Biology, one of the most exciting fields of modern science. This multidisciplinary programme is offered by the Faculty of Science, involving 11 departments across three faculties: the Departments of Biological Sciences, Chemistry, Mathematics, Pharmacy, Physics and Statistics and Applied Probability from the Faculty of Science; the Department of Computer Science from the School of Computing; and the Departments of Biochemistry, Microbiology, Pharmacology and Physiology from Yong Loo Lin School of Medicine.

You will acquire knowledge and skills relevant to biological sciences, mathematical and statistical analysis, and computer science. Upon graduation, you will be skilled in algorithm design and data analysis and adept in computer-based analysis of biological problems. The interdisciplinary skills are also applicable in non-scientific fields such as infocommunications, finance etc.

Possible Careers
- Bioinformatician
- Clinical bioinformatics data scientist
- Computational modeller
- Computational microbiologist
- Computational scientist
- Gaming specialist
- Project scientist
- Researcher
- Software developer
- Technology analyst

Examples of Industries / Sectors
- Biotechnology
- Government agencies
- Infocommunication Technologies
- Pharmaceuticals
- Research
- Scientific services

1 Agency for Science, Technology and Research, Government Technology Agency, Health Promotion Board, Health Sciences Authority, Info-Communications Media Development Authority, Ministry of Health, National Environment Agency are some examples.
Priscilla YAP
Project Engineer
RoviSys Asia Company Pte Ltd
B.Sc. in Computational Biology, Minor in Mathematics (2013)

Priscilla works on data warehousing, mining and analysis for process engineering companies in medicines, food and beverages, and petrochemical products.

“The curriculum integrates and applies a wide spectrum of disciplines. The interdisciplinary training allows me to bridge business requirements with computational results. By reducing the time for data analysis, I help businesses to optimise production and improve quality output.”

PAN Lu
Biostatistician
Singapore Health Services (SingHealth)
B.Sc. in Computational Biology (2014)

Pan Lu is in charge of bioinformatics and biostatistics analysis at SingHealth’s Translational Immunology and Inflammation Centre, where she undertakes multi-omics data analysis and pipeline developments.

“Predictive analytics helps healthcare institutions to address real clinical issues. I apply statistical methodologies to mine large omics datasets, which enable understanding of the etiology of complex diseases in humans. I also make sense of multi-omics data that could be used to improve therapeutic outcomes in patients.”
The internationally unique Bachelor of Environmental Studies is a four-year programme offered by NUS. It is jointly hosted by the Faculties of Science and the Arts and Social Sciences with participation from the Faculty of Engineering, Faculty of Law, School of Design and Environment, NUS Business School, Yong Loo Lin School of Medicine, Saw Swee Hock School of Public Health and Lee Kuan Yew School of Public Policy.

In this interdisciplinary programme, you will acquire specialised knowledge in environmental issues through a broad-based curriculum covering biology, chemistry, mathematics, statistics, economics, geography, building, law, public health, management and policy. You can experientially participate in real-time field studies in neighbouring countries, and acquire insights on varied approaches in addressing today’s complex environmental challenges such as climate change, land use, water usage and building liveable high-density cities. Upon graduation, you will be competent in developing robust policies and processes to address these environmental issues, for careers in environmental agencies, natural resource management agencies and research institutes in both the public and private sectors.

Possible Careers
Conservation biologist
Ecologist
Educator
Environmental consultant
Environmental health officer
Environment impact assessor
Environmental quality specialist
Environmental technologist
Forest conservationist
Geographer
Geologist
Park manager
Public policy analyst
Researcher
Sustainability specialist
Wildlife biologist

Examples of Industries / Sectors
Ecotourism
Education
Environmental consultancy
Environmental management
Environmental planning
Government agencies
Research and development
Sustainable development

SIM Siying
Assistant Manager
Sumitomo Mitsui Banking Corporation
Bachelor of Environmental Studies (Hons), specialisation in Environmental Biology (2015)

Siying conducts industry and company research for clients in the logistics, infrastructure, basic materials and chemicals sectors in the Asia Pacific and Japan. She also proposes business collaborations and networks with regional investment banks.

“The multidisciplinary nature of my course exposed me to varied topics like environmental law, economics, biology and public policy, to name a few. Together with the variety of courses offered by NUS, I became more well-versed in various areas, which opened my mind to different perspectives.”

Jolene LIM
Executive Manager (Incentives)
Agri-Food & Veterinary Authority of Singapore
Bachelor of Environmental Studies (Hons), specialisation in Environmental Biology (2015)

Jolene manages incentive schemes to help local farms improve productivity by utilising technology.

“I gained knowledge of the agricultural sector from my studies. I am proud to be part of a team that ensures food resilience in Singapore by building the capability of our local farms.”
NUS Science graduates are armed with specialised domain knowledge and skills like problem-solving gained from their multidisciplinary science education. With these attributes, they can work in a wide range of general professional careers. They are employable at virtually any type of organisation, within and outside the field of science. Many of our alumni enjoy meaningful and rewarding careers in fields like policy-making, business, finance, management and administration. Some have attained leading positions in the public and private sectors while others have become successful entrepreneurs.

**Shirley Odelia KHNG**  
**Education Manager (Programmes)**  
**Singapore Art Museum**  
*B.Sc. in Applied Mathematics (2007)*  
*Diploma in Fine Art (2011), Nanyang Academy of Fine Arts*  
Shirley manages education and outreach programmes for schools, adults and people with special needs, such as the Think! Contemporary Programme, a museum-based school programme; Roundtable@SAM, a discussion with experts in diverse fields; and Quiet Hour at SAM, a programme designed with inclusivity in mind.  
“I believe there is an art and science to understanding and describing the world around us. This belief has spurred my career. I combine analytical skills from my mathematical background with a passion for the arts to initiate interdisciplinary programmes, talks and workshops which enhance the visitor experience in the museum.”

**CHAY Hong Leng**  
**Managing Director**  
**HSBC Private Banking**  
*B.Sc. in Chemistry and Physiology (1994)*  
*Master of Management (2004), Macquarie Graduate School of Management*  
Hong Leng manages investment portfolios for high net worth individuals from diverse industries.  
“In the financial world, we have to analyse copious amount of research, appraise market conditions and the economic environment, calibrate risks, evaluate investment portfolios and make informed investment decisions. The skills I acquired through my science education, such as observational abilities, data analysis, independent judgement and critical thinking, are integral to my work.”
TAN Wei Hao
Assistant Director (Registries of Patents, Designs and Plant Varieties Protection)
Intellectual Property Office of Singapore
B.Sc. (Hons) in Life Sciences (2013)

Wei Hao is part of the capabilities development and engagement pillars of the Registries responsible for driving operational excellence. He engages business and government stakeholders to promote the intellectual property regime in Singapore and the region, and to grow the local innovation space.

“My science education provided me a holistic and multi-cultural learning experience. The curriculum’s versatility and cross-disciplinary exposure in different faculties nurtured my curiosity and passion. These attributes, together with the intellectual rigour from scientific research, facilitate my work in serving the innovation ecosystem.”

Sean KONG
Chief Training Officer
Halogen Foundation (Singapore)
B.Sc. in Physics, Minor in Nanoscience (2008)

Sean undertakes youth research, training and development, and partners with schools to help them achieve student leadership development goals. He is part of INSPIRIT, co-founded by the National Youth Council and Singapore National Employer Federation to promote youth advocacy.

“My science training equipped me with communication skills, which are crucial in youth development. I prepare young adults to be career-ready, through acquiring character traits like resilience. This enables them to thrive in today’s uncertain and globalised world. By engaging millennials, I help them to discover their passion, purpose and place in society.”

Droston TANG
Advisor
Whizmeal Pte Ltd
B.Sc. in Statistics (2005)

Droston builds strategic partnerships with multiple stakeholders in school canteens. Whizmeal is a social enterprise supporting food education in schools through a healthy meal ordering platform, consultancy work and outreach programmes for schools, food operators and small canteen operators.

“My studies equipped me with the skills to be a data-driven business developer. This is useful in conducting surveys and interviews with stakeholders. Coupled with my commercial experience, I am able to engage parents, school administrators and food operators, and to improve business processes. The use of data has enhanced Whizmeal’s online platform and extended its benefits to the community, especially by providing meaningful insights to parents.”
UNUSUAL CAREERS

Contrary to perception, some of the most exciting careers are in the sciences. Science is a very broad field, covering a wide range of disciplines. Science careers can be atypical or unconventional. Some of our graduates are employed in niche fields such as forensic science. Others have set up their own businesses or work in advocacy for various causes.

Dr Jaipal Singh GILL
Executive Director
Society for the Prevention of Cruelty to Animals
B.Sc. in Life Sciences (2007); Bachelor of Animal Science and Management (Hons) (2009) and Doctor of Veterinary Medicine (2015), University of Melbourne

Jaipal oversees animal welfare services, such as emergency rescue, cruelty investigations, a shelter for abandoned animals, an adoption programme and a community animal clinic. He aims to help Singapore become a leader trendsetter in animal welfare in the region.

“My science education taught me an evidence-based approach which is useful in my work in advocacy, campaigns, policy research and analysis. I care about people, animals and the environment. Working in animal welfare allows me to positively impact these areas and contribute to society.”

Joey WANG
Director (Technology and Innovation)
Appiloque Pte Ltd
B.Sc. in Chemistry (2013)

Joey oversees operations at the marketing agency he founded. His team in Singapore and the United States uses cutting-edge technologies like analytics to enhance business operations with end-to-end digital solutions.

“Science spurred my curiosity to take things apart, to learn how they work at the micro- and macro-levels. As an entrepreneur, I am empowered with the time and space to work on products and services that can change the lives of many.”
Shawn FOO
Senior Crime Scene Specialist
Singapore Police Force
B.Sc. (Hons) in Chemistry, Minor in Forensic Science (2013)
M.Sc. in Analytical Toxicology (2014), King’s College London

Shawn applies science to law enforcement. His work includes recovering forensic evidence at crime scenes to aid investigations and court cases, preserving evidence for laboratory analysis, and using emerging technologies to improve forensic capabilities.

“My studies, laboratory training and exposure to the Forensic Science programme gave me excellent appreciation of the science behind forensics. The application of scientific knowledge to real-world problems makes me adept in managing highly individualistic crime scenes that I encounter daily.”

Mark QUEK
Pilot, Singapore Airlines Group
Co-Owner / Research and Development Head
FAMC Farming Ltd
B.Sc. (Hons) in Life Sciences (2008)

Mark completed training as an Ab-Initio Cadet Pilot with Singapore Airlines in 2011 and has been flying since. He also embarked on a sustainable farming venture to provide affordable quality protein products to consumers. He plans to expand the farms in Indonesia.

“The rigorous science training gave me confidence to diversify into alternative careers as a pilot and entrepreneur. As I can view problems critically from different angles, I am able to devise new processes for smoother farm operations, to improve our product quality and yield.”

Verleen GOH
Chief Food Fighter / Co-Founder
Alchemy Foodtech Pte Ltd
B.Appl.Sc. (Hons) in Food Science and Technology (2010)

Verleen uses food science and technology to fight diseases arising from food and lifestyle choices. She previously created award-winning Soyato, a soy frozen dessert to serve as a healthy alternative to ice cream.

“The Food Science and Technology programme equipped me with the knowledge to create healthier food that benefits consumers. We incorporate food technology into refined carbohydrate staples, to prevent and manage diabetes. We create food that keeps blood sugar levels steady, enabling people to enjoy their meals and improve their health.”
CONTINUAL EDUCATION

Our programmes serve as an excellent springboard for the pursuit of further studies. Some of our graduates embark on postgraduate studies or careers in academia as researchers or lecturers in top universities and research institutes, thereby contributing to the further advancement of science.

We have various postgraduate scholarships for continual learning. The **NUS-Overseas Graduate Scholarship** is for young and outstanding individuals to pursue academic careers. The **NUS-Overseas Postdoctoral Fellowship** is awarded to fresh Ph.D. holders with notable accomplishments in teaching and research, and upon acceptance for postdoctoral training at a leading overseas academic or research institution. The **NUS Research Scholarship** is awarded to outstanding graduates for research leading to a higher degree at NUS.

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**Dr TING Yuan-Sen**  
Postdoctoral Fellow  
Institute for Advanced Study, Princeton University  
Observatories of the Carnegie Institution for Science  
*B.Sc. in Physics, Minor in Mathematics (2011); M.Sc. in Physics (2012)*  
*Ph.D. in Astrophysics (2017), Harvard University*

Astrophysicist Yuan-Sen’s work operates at the cross-section between theoretical modelling, observational astronomy and machine learning to study the Milky Way. He was awarded the NASA Earth and Space Science Fellowship (2015) and Dr Pliny and Margaret Price Prize in 2016.

“I feel extremely privileged to have a job that allows me to pursue the quest of understanding who we are and where we are from. I am amazed how many youths venture into studying science as they are fascinated by the beauty of the universe.”

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**Dr TAN Yaw Sing**  
Senior Postdoctoral Research Fellow  
Bioinformatics Institute  
Agency for Science, Technology and Research  
*B.Sc. (Hons) with Double Majors in Chemistry and Life Sciences (2009)*  
*Ph.D. in Chemistry (2014), University of Cambridge*

Yaw Sing conducts computational modelling and design of drug molecules to modulate protein-protein interactions, which have emerged as attractive drug discovery targets in recent years.

“I gained appreciation of the multidisciplinary nature of research through numerous opportunities offered to me at NUS. My current research helps to guide the design of potent drug molecules in collaborative drug discovery projects. This can immensely reduce the time and cost to bring a new drug to market.”
Dr TAN Beng Thye
Research Scholar
Singapore Nuclear Research and Safety Initiative
B.Sc. (Hons) in Physics (2006)
Ph.D. in Earth Sciences (2018), University of Cambridge

Beng Thye applies analytical techniques and theoretical modelling to study the alteration mechanisms of spent nuclear fuel. He also drafts policy papers to support high-level decisions that safeguard Singapore’s interests amidst global nuclear energy developments.

“My studies opened many doors to graduate research in numerous scientific fields. It cultivated an inquisitiveness to ask probing questions of scientific phenomena. This benefits my research career as I articulate questions on my findings and in further experiments, I arrive at a more comprehensive explanation for my observations.”

Dr Cedric TAN
Lecturer and Researcher, Innovative Education in Conservation
Wildlife Conservation Research Unit, University of Oxford
College Lecturer, Wadham College and St Catherine’s College, University of Oxford
B.Sc. (Hons) in Life Sciences (2009); Ph.D. in Zoology (2012), University of Oxford

Cedric develops and teaches courses in wildlife conservation for Southeast Asia, China and Africa, utilising innovative tools such as games and e-learning. He also conducts research on the effects of these tools on learning, motivation and capacity-building among conservationists.

“My science education has developed my acuity in research designs and analysis, and enhanced my teaching skills. I had many opportunities to develop my leadership and communication skills, which are useful in forging collaborations and leading outreach and research projects. I hope to inspire future leaders in conservation and environmental education.”
Our broad-based education with cross-disciplinary learning opportunities equips our graduates with crucial foundational skills, such as resilience, adaptability and lifelong learning. This enables them to make transitions into multiple careers in diverse domains. Some of our alumni have ventured into unfamiliar domains, after gaining rich and myriad experiences across industries. They remain highly employable as they can quickly integrate into new and challenging work environments.

**CHAN Kailin**

Co-Founder  
AlfaCloud HK  

Kailin’s vision is to be the region’s industry-leading provider of data analytics business cloud solutions uniquely designed for Asian businesses. She harnesses her award-winning cloud computing technologies to enable business transformation.

“My science training gave me a competitive edge in the digital economy, in the emerging areas of data analytics, cloud computing and artificial intelligence. My course also instilled foundational skills in programming, creativity in numerical applications and a forward-thinking mindset. This prepared me well to build my business and to venture to the international stage.”

*Now known as Quantitative Finance programme*

Kailin started as an engineer and thereafter became an investment banker. She set up her own business in 2015 to address market demand for cloud technologies.
**TRANSFORMATION IN CAREER PATHWAYS**

**Jeremy CHOONG**  
CEO and Owner  
Paksong Coffee Pte Ltd  
B.Sc. in Chemistry, Minor in Mathematics (2002)

Jeremy aims to turn his family’s ailing small-time coffee business into a high-end one that focuses on specialty coffee.

“Although I had no prior knowledge about the coffee industry, my organic chemistry knowledge was very useful in developing unique coffee flavours, and improving fermentation and processing methods. By farming specialty coffee, I gained an edge over more than 20,000 local coffee growers.”

**Dr Intan Azura Bte Mokhtar**  
Assistant Professor  
Singapore Institute of Technology  
B.Sc. in Physics, Minor in Mathematics (1998)  
M.Sc. and Ph.D. in Information Studies (2003, 2008), Nanyang Technological University  
Master in Public Administration (2008)

Dr Intan has served as a Member of Parliament for Ang Mo Kio Group Representation Constituency since 2011. Currently, she teaches change management to undergraduates across different programmes in the university. She has served the community through Mendaki, the Singapore Muslim Women’s Association, Singapore Children’s Society and Central Singapore CDC.

“When I was appointed a grassroots advisor, I had virtually no experience. My science training equipped me to swiftly adapt to new environments. My varied career paths over the last 19 years is proof that the possibilities for science graduates are limitless.”

**Dr Intan started her career teaching Physics and Mathematics and thereafter, ventured into academia and consulting in information science, public administration, and change management and leadership.**
TANG Ling Nah
Visual Artist and Part-time Lecturer
LASALLE College of the Arts and Nanyang Academy of Fine Arts
B.Sc in Pharmacy (1993)
Bachelor of Arts (Translation and Interpretation), Singapore University of Social Sciences

Ling Nah is a multiple award-winning artist who exhibits her work locally and internationally. She also curates exhibitions and works on commissions, teaches art and attends artist residencies abroad. “An inquiring mind, being meticulous and having the resolve to steer a project to fruition are attributes from my science education that are also necessary for art creation. We apply soft skills like teamwork and empathy through community art. Art raises awareness on societal issues, by encouraging audiences to appreciate the finer things in life.”

Ling Nah first worked in a retail pharmacy and a community hospital pharmacy. She later pursued a fine arts degree and has been practising art since 2001.

FOO Hee Jug
Deputy Chief Executive, National University Health System
Chief Executive Officer, Ng Teng Fong General Hospital
B.Sc. (Hons) in Mathematics (1990);
MBA and Master of Public Health (1998), University of California, Los Angeles; Advanced Management Programme (2007), Harvard Business School

Hee Jug led the planning, designing and construction of Singapore’s first integrated healthcare development comprising Ng Teng Fong General Hospital and Jurong Community Hospital. Since January 2018, he assumed the role of Deputy Chief Executive of the National University Health System.

“Hee Jug started his career with the Singapore Police Force before moving on to a distinguished career in public healthcare.”