One Degree

Unlimited Opportunities

Contents

*By embracing our **Transformative Science Education**, you will enjoy a holistic educational experience, which will maximise your potential and empower you to make a difference when you graduate.*

DEAN'S FOREWORD

I am delighted to invite you to study this careers handbook as you embark on your journey with us in our Science degree programme. It is important for you to start and plan ahead to consider your future career options from day one. Through this handbook, I hope you will not only have a better understanding and appreciation of the value of a science education, which is becoming increasingly more important in today's innovation-driven and borderless economy, but it will also open your mind to the many possibilities and options you may have.

NUS TRANSFORMATIVE SCIENCE EDUCATION

Although our programmes are designed to train you to meet the complex needs of the future, you will need to play an equally active part in your learning and development in the next few years that you are with us. The future workplace will not be based on what you know but on how you think. This is why a science education, which hones and develops your thinking and problem-solving skills, will always be relevant. To continue to stay relevant, future workers must also have the passion for continuous and lifelong learning to keep up with the rapid changes in technology and in the globally connected environment. You would need to be able to adapt to change, be resilient and agile, and work collaboratively in a team setting.

Our NUS Transformative Science Education is not just about deep domain knowledge and transferable skills sets acquired through your science training. It also encompasses other aspects of soft skills that you will pick up through your learning process, including the choices you make in the modules you take and the other experiences you go through. Choose your pathways carefully based on your interests and passion. At the same time, do keep an open mind to venture outside your comfort zones to pick up skills sets that you may not already have but can acquire. By embracing our Transformative Science Education, you will enjoy a holistic educational experience, which will maximise your potential and equip you to be future-ready and employable in many organisations. We would have then prepared you well, not just for a career for life but a life of careers.

Since 1929, we have produced scientists, researchers, entrepreneurs and leaders in many diverse industries who drive Singapore's growth. Many of our alumni have made important contributions in their respective fields. We are proud to feature some of our young and illustrious alumni in this handbook. While not exhaustive, I trust you will find the employers' comments and our alumni's reflections informative and inspiring.

Let me take this opportunity to welcome you as a member of our Science family and I wish you a fulfilling journey with us.

Prof **SHEN Zuowei**
Dean, Faculty of Science

SCIENCE : DRIVER OF INNOVATION

Our Transformative Science Education helps our students become lifelong learners. We move students beyond acquiring knowledge to creating new knowledge, and from application to self-discovery and innovation. You will gain depth and breadth in knowledge, and transferable skills, to become career-resilient individuals who are ready for the complex workplace of the future.

GROOMING FUTURE-READY SCIENCE GRADUATES

Flexible Curriculum

Our flexible curriculum provides you varied learning opportunities, so that you can plan your learning pathways based on your interests and aspirations. We offer double degrees, double majors, joint degrees, concurrent bachelor's and master's degrees, minors, specialisations, multidisciplinary and cross-faculty programmes, as well as undergraduate research programmes.

Experiential Learning

Extending your learning by applying insights beyond the classroom is a key part of your student experience. You can participate in study abroad programmes at over 300 overseas partner universities. You can also gain hands-on entrepreneurship experience by attending the NUS Overseas Colleges (NOC) programme.

Career Preparation

We offer various programmes to help you develop personally and professionally. Our flagship Undergraduate Professional Internship Programme (UPIP), Honours year Applied Project and Co-operative Education Programme comprise structured credit-bearing internship modules offering on-the-job training at renowned local and international organisations.

We also organise career fairs, industry events / talks and company visits, where you can meet industry practitioners from diverse sectors on career opportunities. These programmes help you to explore viable career pathways, and enhance your readiness for the workplace.

TRENDING INDUSTRIES

Our graduates are employed in various high growth and high impact sectors. Many of these industries are key pillars driving Singapore's economy.

"HSA recruits NUS graduates and postgraduates for careers in health products regulation, transfusion, forensic and analytical sciences. With their strong foundation of broad-based scientific knowledge and essential technical training, NUS Science graduates are fast learners who can master the specialised knowledge and skills required relatively quickly, and carry out their responsibilities competently. They come across as confident and adaptable. Many also possess a keen mind and good problem-solving skills. As a scientific organisation responsible for regulating health products, securing the blood supply, and providing analytical and forensic science services, such attributes and qualities are invaluable to HSA."

Dr CHOONG May Ling, Mimi
CEO
Health Sciences Authority (HSA)

"NUS Science graduates are sought after for their analytical and problem-solving skills and their ability to adapt and grow in a dynamic environment. They possess the aptitude, empathy and professionalism to make impactful contributions to the health and well-being of our community through the various roles they play in healthcare organisations, be it in clinical diagnostic and research laboratories, management or operations. Science training is also useful as we partner clinicians to roll out and improve clinical services for our patients. The rigorous training enables them to mine meaningful information from data and put together strong and logical business cases to alleviate productivity issues, lower costs and increase value for our patients. These attributes put them in good stead to take on varied leadership roles in healthcare."

Adjunct Prof Eugene Fidelis SOH
CEO
Tan Tock Seng Hospital and Central Health (Medical Centre)
National Healthcare Group

Biomedical Sciences and Healthcare

Jobs in manufacturing, medical and regulatory affairs, headquarter activities such as sales and marketing, supply chain management, research and development, quality management and product development with medical institutes, pharmaceutical and medical technology firms

Financial Services

About 4,000* new jobs in financial services and financial technology annually

Jobs in corporate banking (e.g. structured and project financing, trade finance)

Jobs in insurance / reinsurance (e.g. actuarial, underwriting, broking)

Jobs in wealth and asset management (e.g. investment research, relationship management)

Jobs in risk management (e.g. credit / market risk management)

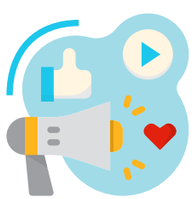
Jobs in compliance (e.g. anti-money laundering)

Jobs in financial technology (e.g. data and business analytics, cyber security)

** Pre-COVID-19 figures*

"We look for outstanding graduates with well-rounded backgrounds and personalities, as well as a track record of excellence. We have NUS graduates from Statistics and Quantitative Finance. They are serving in roles that cut across functions including data analytics and risk management. They are detailed, meticulous and analytical. They have an inquisitive mind, good research techniques and a structured approach towards problem-solving. They also possess a great capacity to learn."

Susanna LEE
Executive Director
Human Resource Department
Monetary Authority of Singapore



Infocommunication Technologies

Jobs in emerging technologies like Artificial Intelligence, cybersecurity, data analytics, immersive media, Internet of Things, network and infrastructure etc.

Demand for infocommunication professionals is projected to grow by another 61,600 until 2021

Education

Over 33,600 education officers in over 350 schools for primary, secondary and pre-university education as at end of 2018

Other jobs include allied educators, and executive and administration staff

"Singapore needs science teachers who are committed to developing a strong science foundation among our young. This ensures that we have a scientifically literate population and a pipeline of Science, Technology, Engineering and Mathematics (STEM) professionals who can harness science and technology to improve our lives. Many NUS Science alumni are teachers, school leaders and education specialists. They are strong in subject mastery and committed as educators."

Clarence TANG
Divisional Director
Finance and Procurement
Ministry of Education

Safety and Security

Jobs related to development and deployment of high-technology security solutions and equipment, including sensors, biometrics, analytics, command and control, communications, systems design and integration of security systems

"NUS Science graduates have the foundation to understand natural phenomena, a rigorous approach to problem-solving and the confidence to venture into the unexplored and the unknown. They have distinguished themselves in diverse areas including materials, lasers, optics, chemical defence, information security, artificial intelligence and signal processing. Many have achieved breakthroughs which rival the best in the world, ultimately making a difference to the defence and security of our nation."

QUEK Gim Pew
Chief Defence Scientist
Ministry of Defence

TRENDING INDUSTRIES

Research and Development

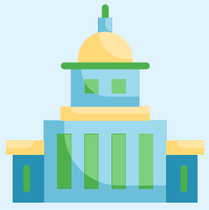
Jobs in universities and research institutes in varied areas including the physical sciences and engineering, biomedical sciences and growth areas like food and nutrition, environmental technologies, consumer care, and digital media

"Science develops both specialists and generalists. Science also sets no limit. That is why science graduates are relevant on all fronts - from business to politics, consultants to inventors and academia to corporate executives. Your choices are limitless."

Prof Andy HOR
Deputy Chief Executive (Research)
Agency for Science, Technology and Research

"NUS Science graduates have always been able to apply their knowledge and skills at TLL. They are well-rounded individuals who continue to learn, stay interested and are effective in interacting with scientists from different parts of the world to harness the power of the life sciences to improve lives. My senior faculty and I are impressed by the quality and professionalism of NUS Science graduates. It is rewarding to see many of them become authors of high impact publications, inventors of important discoveries, and senior scientific leaders and administrators."

Peter CHIA
CEO
Temasek Life Sciences Laboratory (TLL)



Government

"The NUS Science graduates we have employed have sound foundations in biology and nature sciences. This combined with their passion in science make them effective science communicators, playing vital roles to educate and inspire our next generation."

Prof LIM Tit Meng
Chief Executive
Science Centre Singapore

"We value our science graduates' strengths in analytical thinking and resourcefulness. With their versatility, they undertake roles ranging from research and statistical analysis, to data analytics, corporate planning and human resources. They also serve at the frontline, implementing housing policies and engaging residents in our heartlands. Many of them have grown with us and have taken up leadership positions."

Dr CHEONG Koon Hean
CEO
Housing & Development Board

Consumer Businesses

Jobs in brand management, consumer intelligence, marketing communications, quality assurance etc. In a wide range of sectors such as food manufacturing, food services, infocommunication technologies, media, retail, tourism etc.

Urban Solutions and Sustainability

Focus areas include clean energy, environment and water, built environment, urban mobility etc.

Jobs in urban solutions and sustainability, research and development, sales and marketing, smart city technologies, product development, and system integration in areas like energy efficiency, pollution control, water treatment, waste management etc.

"Many NUS Science graduates are responsible for managing our nature reserves, gardens, parks and verdant streetscapes, playing a part in achieving Singapore's vision of a City in a Garden. They exhibit a strong foundation in the natural sciences and have a passion for the environment, made possible by the all-rounded curriculum in biology and environmental sciences."

Kenneth ER
CEO
National Parks Board

"PUB scientists put their training and knowledge to good use so that Singapore will have enduring water security. They ensure that our drinking water is of the highest quality. They possess intimate knowledge of the micro-ecology in our reservoirs and waterways. Their expertise in chemistry and separation science safeguards our wastewater treatment. They engage in basic and applied research in water science and technology, and also collaborate with international colleagues in numerous studies. Without our scientists, not a drop of water would be made, not an ounce of sewage treated, and our streets would be flooded."

NG Joo Hee
Chief Executive
PUB, Singapore's National Water Agency

Pharmaceuticals

"Employees who can grasp and analyse problems or opportunities, identify contributing causes and synthesise effective solutions, are a valuable asset in today's disruptive workplace. NUS Science graduates are confident, analytical and smart. They can apply their knowledge at the workplace with minimal supervision. They are also independent and resourceful and can solve workplace issues, individually and in teams."

KWAN Yew Huat
Managing Director
Pharmaforte Singapore Pte Ltd

Energy and Chemicals

1,400 new jobs anticipated to be created by 2025 with S$12.7 billion in value added to the Singapore economy

Jobs in research and development, and application and product development in a wide range of sectors such as petrochemical products, consumer care, agriculture, chemicals and industrial biotechnology

Jobs information and figures from government agencies including Agency for Science, Technology and Research, Info-Communications Media Development Authority, Ministry of Education, Ministry of Finance, Ministry of Health, Monetary Authority of Singapore, National Research Foundation, Singapore Economic Development Board

I Will Be **Future-Ready**

Analytical & Creative Thinker • Effective Communicator • Scientifically Proficient
Technologically Savvy • Lifelong Learner • Dynamic Leader
Problem Solver • Globally Minded • Enterprising • Resourceful
Systematic • Innovative • Adaptable
Versatile • Resilient

Discipline-Based Careers
EDUCATION

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 nuture 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."

WEE Chorng Shin
Senior Teacher (Chemistry)
Hwa Chong Institution
B.Sc. (Hons) in Chemistry (2006)
M.Phil. in Chemistry (2008), Hong Kong University of Science and Technology

In addition to teaching, Chorng Shin mentors new teachers, experiments with new teaching pedagogies and collaborates with schools and the Ministry of Education on curriculum matters.

"I have a passion in helping our youths realise their potential and aspirations. I would like to continue nurturing young minds to stay receptive to learning opportunities and to improve the chemical education landscape in Singapore."

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

CHEMISTRY

The NUS Chemistry Department 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.

This programme will prepare you for a wide range of career opportunities, in both scientific and non-technical domains, in many sectors such as the chemical, pharmaceutical, energy and the manufacturing industries, amongst others.

We also offer direct admissions to the Double Major programme in Chemistry and Food Science to prepare students for the fast-growing food industry.

Possible Careers

Chemical 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 agencies[1]
Manufacturing
Pharmaceuticals
Research and development
Specialty chemicals

[1] Agency for Science, Technology and Research, Energy Market Authority, Health Promotion Board, Health Sciences Authority, Ministry of Education, Ministry of Health, Ministry of Trade and Industry, National Environment Agency, Singapore Economic Development Board, Singapore Food Agency are some examples.

CHEMICALS

Ryan LIN

Senior Research Scientist
Solvay Singapore
B.Sc. (Hons) in Applied Chemistry (2013)

Ryan is involved in the research and development of new products that contribute to the sustainable development of the chemical industry.

"I believe that green chemistry is a key focus now, and my training equipped me well in this area. At Solvay, I help coatings companies to develop sustainable products with minimal adverse environmental impacts. These products include environmentally friendly functional additives for a new generation of coatings that capture pollutants."

FORENSICS

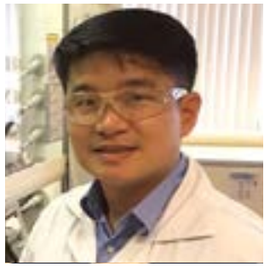
Dr Alaric KOH

Acting Laboratory Director /
Consultant Forensic Scientist (Forensic Chemistry and Physics Laboratory)
Health Sciences Authority
B.Sc. (Hons) in Chemistry (2006); Diplôme d'Ingénieur, Engineering Sciences (2006), École Polytechnique; M.Sc. in Chemistry (2007)
Ph.D. in Physical and Analytical Chemistry (2009), Pierre and Marie Curie University

Alaric applies scientific principles to support the administration of criminal justice. He has worked on hundreds of cases, including high-profile ones such as the Shangri-La shooting incident, and has analysed evidence ranging from micron-sized particles to a large oil tanker.

"My job gives me a great sense of satisfaction because I give voice to physical evidence – the 'silent witness' of a crime. The challenge lies in coaxing these 'witnesses' to speak, as they can be of very different nature, and hence, no one-size-fits-all approach. I benefitted from NUS Science's broad-based education, which equipped me with the ability to recognise and apply different scientific principles to different cases."

PHARMACEUTICALS



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 experiements 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."

Discipline-Based Careers

DATA SCIENCE AND ANALYTICS

The Data Science and Analytics programme offered by the Department of Mathematics and Department of Statistics and Applied Probability, NUS in conjunction with the NUS School of Computing, is the first degree programme of its kind 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, and a capstone module, where you will work on research and projects that are related to real-life data and workplace challenges, through a structured sequence of credit-bearing internships.

You can choose to read a Second Major in Data Analytics, which prepares you well to apply computing and statistical methods to analyse complex data.

The programme grooms data science and analytics professionals with interdisciplinary expertise in statistics, mathematics and computer science, who can turn data into actionable insights for businesses. There are career opportunities in Smart Nation-related work in diverse industries, such as consumer businesses, financial services, healthcare and manufacturing, amongst others, that deal with voluminous data.

Possible Careers

Actuary
Artificial Intelligence specialist
Big Data analyst
Biostatistician
Business analytics specialist
Consumer insights analyst
Data analytics specialist
Data scientist
Educator
Machine learning scientist
Statistician

Examples of Industries / Sectors

Biomedical sciences
Consumer businesses
Education
Financial services
Government agencies[1]
Healthcare
Infocommunication technologies
Insurance
Manufacturing
Pharmaceuticals
Research and development
Safety and security
Telecommunications
Transportation

[1] Agency for Science, Technology and Research, Government Technology Agency, Health Promotion Board, Health Sciences Authority, Housing & Development Board, Info-Communications Media Development Authority, Land Transport Authority, Ministry of Education, Ministry of Finance, Ministry of Health, Ministry of Manpower, Ministry of Trade and Industry, Ministry of Transport, Monetary Authority of Singapore, Smart Nation and Digital Government Office are some examples.

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

ENERGY

Arnold DORAY

Chief Executive Officer
Terra Weather
B.Sc. in Physics (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. His 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."

FINANCIAL TECHNOLOGY

Geraldine CHIA

Chief Data and Analytics Officer
Moka Technology Solutions Pte Ltd
B.Sc. (Hons) in Mathematics (2001)
M.Sc. in Statistics (2007), Stanford University

Geraldine built the company's data strategy and infrastructure from scratch. Moka, one of the first financial technologies startups in Indonesia, provides cloud-based point of sales systems for businesses.

"My Science course laid the foundation for my career as a data scientist. I oversee all aspects of data, including data engineering, analytics, science and governance. My work also contributes to data-driven decision making within the company."

GOVERNMENT

Eric TAN

Data Scientist and Technical Product Manager
Government Technology Agency
B.Sc. (Hons) in Applied Mathematics (2016); M.Sc. in Business Analytics (2019)

Eric designs and builds the next generation virtual assistant for the *Moments of Life* platform, a national project where government services across different agencies are brought together seamlessly. This reduces the need for users to transact with multiple government agencies.

"The foundational computational skills and mathematical insights I acquired enable me to contribute to Smart Nation initiatives, where technology is harnessed for the public good. I derive great career satisfaction knowing that my work improves the delivery of public services."

Discipline-Based Careers
FOOD SCIENCE AND TECHNOLOGY

The NUS Food Science and Technology (FST) Department offers the internationally accredited, multidisciplinary FST course which enables you to acquire specialised and hands-on knowledge of the science and technology of food, especially in the areas of food quality and safety, new food product innovation, food processing and nutrition.

Our Second Major in Food Science, offered through direct admissions, provides training and applied perspective for food beyond its physical and chemical properties. Upon graduation, you will be well-equipped for specialised and broad-based management and operational careers in today's fast-growing food industry.

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

Examples of Industries / Sectors
Consumer insights
Consumer products
Education
Flavours and fragrances
Food ingredients
Food production and processing
Food testing laboratories
Government agencies[1]
Healthcare
Pharmaceuticals
Quality control
Research and development

[1] Agency for Science, Technology and Research, Health Promotion Board, Health Sciences Authority, Ministry of Education, Ministry of Health, Singapore Food Agency are some examples.

CONSUMER BUSINESSES

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 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."

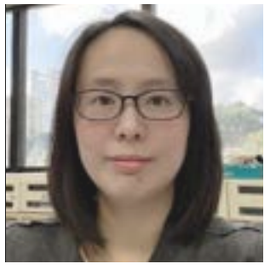
CONSUMER BUSINESSES

Dr LIU Yeting
Global R&D Director
Barry Callebaut Group
B.Appl.Sc. (Hons) in Food Science and Technology (2004); Ph.D. in Food Science and Technology (2009)

Yeting works with cross-functional teams in Asia, Europe and the Americas, to lead Barry Callebaut's chocolate innovations for its global ice cream brands.

"The basic and applied research skills I acquired gave me in-depth insights of consumer preferences. These skills enable me to offer consumers new food experiences, like chocolate in ice cream with new taste and a better nutritional profile."

GOVERNMENT



Angela LI
Director (Research and Risk Assessment Department)
National Centre for Food Science
Singapore Food Agency
B.Appl.Sc. (Hons) in Food Science and Technology (2005)
M.Sc. in Chemistry (2012), University of York

Angela harnesses cutting-edge science and technology to address food safety problems. This ensures that food remains safe for consumption, which contributes to Singapore's food resilience.

"As the food supply chain becomes more globalised, tracking the journey our food takes from farm to fork is more challenging. The internationally benchmarked laboratory testing capabilities acquired from my studies prepared me well to detect and analyse foodborne hazards through risk assessment."

Discipline-Based Careers
LIFE SCIENCES

The Life Sciences Major is the undergraduate course in biological and biomedical sciences in NUS. With a common foundation in the underlying knowledge vital to all areas of life sciences in the first year of study, selection of relevant advanced-level modules will pave the way to one of the three specialisations – Biomedical Science; Molecular and Cell Biology; and Environmental Biology – as well as the many diverse disciplines in life sciences.

You will acquire a solid foundation in the fundamental concepts as well as the latest research techniques relevant to the rapidly changing world of biological and biomedical sciences.

A four-year Joint Degree Programme combining NUS' B.Sc. (Hons) in Life Sciences and University of Dundee's B.Sc. (Hons) in Biological Sciences / Biomedical Sciences will equip you with the skills and expertise in drug discovery and design, cell and developmental biology, and plant science.

Upon graduation, you can consider diverse career opportunities in the public and private sectors, across many areas including agriculture, biomedical sciences, conservation and sustainability, and environmental technology, amongst others.

Possible Careers
Biotechnologist
Clinical analyst
Clinical trial coordinator
Conservation biologist
DNA profiling scientist
Educator
Environmental sustainability specialist
Forensic scientist
Lawyer
Medical technologist
Parks manager
Process engineer
Prosecutor
Public health officer
Quality control specialist
Senior crime scene specialist

Examples of Industries / Sectors
Agriculture
Biomedical sciences
Biotechnology
Conservation and sustainability
Education
Environmental technology
Food production
Government agencies[1]
Healthcare
Horticulture
Law enforcement
Pharmaceuticals
Research and development
Scientific services

[1] Agency for Science, Technology and Research, Health Promotion Board, Health Sciences Authority, Ministry of Education, Ministry of the Environment and Water Resources, Ministry of Health, Ministry of National Development, National Environment Agency, National Parks Board, Singapore Economic Development Board, Singapore Food Agency are some examples.

ENVIRONMENT

FUNG Tze Kwan
Researcher
Singapore-ETH Centre
B.Sc. (Hons) in Life Sciences (2011); M.Sc. in Biology (2016)

Tze Kwan leads ecological research in the Future Cities Laboratory. Her research quantifies the provision of ecosystem services by different vegetation types in Singapore to understand how urban green spaces can be better designed to benefit people and meet conservation goals.

"The research experience I gained allows me to deepen and apply my knowledge and skills in field studies and ecology. I hope that my work contributes to more informed environmental planning and management that is science-based and sustainable, including the need for biodiversity conservation in the face of rapid development."

GENOMICS

Dr TAM Wai Leong
Group Leader
Laboratory of Translational Cancer Biology
Genome Institute of Singapore
Agency for Science, Technology and Research
B.Sc. (Hons) in Biology (2003); Ph.D. in Stem Cell Biology (2008)

At his research laboratory, Wai Leong and his team investigate and decode cancer processes, and translate research findings into new therapeutic targets. He also works closely with oncologists to design better ways to manage and treat cancers.

"My training in biomedical science research taught me the value of creativity. This insight carried me through as my research interests evolved to the area of improving human health. The work I do currently addresses unmet medical needs in cancer treatment."

HEALTHCARE

Dr Meera GURUMURTHY
Clinical Research Advisor (TREAT TB)
Vital Strategies / International Union Against Tuberculosis and Lung Disease (The Union)
B.Sc. (Hons) in Life Sciences (2006); Ph.D. in Microbiology (2012)

Meera is part of an initiative contributing to new knowledge on shorter, more tolerable treatment regimens for multidrug-resistant tuberculosis (MDR-TB). She also conducts research for global and regional TB control efforts.

"The research exposure gained from my studies was fundamental to my scientific career. I am involved in implementing the first large-scale, multicountry clinical trial to examine shortened regimens for MDR-TB. My work helps to address a major gap in global public health policy stemming from limited, costly and often toxic treatment options."

Discipline-Based Careers

MATHEMATICS, APPLIED MATHEMATICS AND QUANTITATIVE FINANCE

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.

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.

In Applied Mathematics, you can choose to specialise in either Mathematical Modelling and Data Analytics, or Operations Research and Financial Mathematics.

The multidisciplinary Quantitative Finance course covers mathematical theory and applications, statistical tools, computing theory and techniques, financial theory and principles, and core financial products.

You can choose to read a Second Major in Data Analytics, which prepares you well to apply computing and statistical methods to analyse complex data.

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 mathematics in wide-ranging sectors, including financial services, healthcare, insurance and transportation, amongst others.

Possible Careers

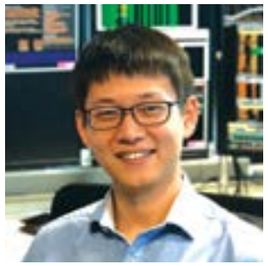
Actuary
Blockchain developer
Business analyst
Computer programmer
Cryptanalyst
Data analyst
Data scientist
Educator
Financial analyst
Financial engineer
Fund manager
Operations research analyst
Quantitative modelling analyst
Researcher
Risk management analyst
Software engineer

Examples of Industries / Sectors

Education
Financial services
Government agencies[1]
Healthcare
Infocommunication technologies
Insurance
Operations management
Research and development
Safety and security
Transportation
Wealth management

[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 are some examples.

FINANCIAL SERVICES



GUO Zhijian

Equity Derivatives Trader
Macquarie Group
B.Sc. (Hons) with Double Majors in Quantitative Finance and Statistics (2015)

Zhijian's work includes pricing, trading and market-making portfolios of stocks and index options stemming from warrants and institutional flows, as well as 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."

HEALTHCARE

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."

TECHNOLOGY

Leonard LOO

Speech Algorithm Architect
BIGO Technology Pte Ltd
B.Sc. (Hons) in Applied Mathematics (2016); M.Sc. in Applied Mathematics (2017)

Leonard writes audio fingerprinting programmes to capture the signature of a piece of sound, that differentiates it from other sounds. This has applications for social media live streaming, short videos and social networking services.

"The rigour of mathematics training has fresh relevance in a time when Internet-enabled social communities are growing. Trending music causes many duplicates of audio to be uploaded, which slows processing. An efficient method to detect these duplicates speeds up subsequent tasks, hence enabling greater scalability."

Discipline-Based Careers
PHARMACY AND PHARMACEUTICAL SCIENCE

The NUS Pharmacy Department, the sole provider of university-level pharmacy education in Singapore, trains pharmacists for the fast evolving healthcare and pharmaceutical sectors.

The transformed Bachelor of Pharmacy (Hons) degree programme features a fully integrated curriculum as its signature. The overhauled curriculum combines with modern pedagogy to develop healthcare practitioners who are competent in navigating the dynamic health system and are prepared for the challenges of contemporary practice. You will be trained as care providers, health advocates, communicators, collaborators, scholar-innovators, leader-managers and professionals.

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.

The B.Sc. in Pharmaceutical Science, a four-year direct honours programme, provides broad-based knowledge on drug design, discovery and development, and the regulatory and commercial environment. It opens many doors across the entire spectrum of career options within the pharmaceutical industry.

Possible Careers

B. Pharm. (Hons)

Patient-Care Practice as Registered Pharmacists	*Non Patient-Care Areas*	*Examples of Industries/Sectors*
Community pharmacies	Clinical research coordinator	Clinical research and trials
Healthcare services	Regulatory specialist	Government agencies[1]
Hospitals	Research associate	Health product regulation
Polyclinics	(Some positions in Non Patient-Care areas may also require you to be a registered pharmacist)	Healthcare informatics
		Pharmacovigilance
		Sales and marketing

B.Sc. (Pharm Sci) (Hons)

Typical Sectors of Employment	*Roles and Career Opportunities*	*Examples of Industries/Sectors*
Biomedical sciences	Medical affairs specialist	Basic sciences research
Consumer healthcare	Pharmaceutical scientist	Clinical trials
Medical devices	Quality control/assurance scientist	Government agencies[1]
Pharmaceutical	Regulatory specialist	Health product discovery and development
	Supply chain and logistic manager	Pharmaceutical manufacturing
		Sales and marketing

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

CONSUMER BUSINESSES

Anson LIM
Cluster Pharmacy Manager
Watson's Personal Care Stores Pte Ltd
B.Sc. (Hons) in Pharmacy (2011)
Masters of Health Administration (2017), Flinders University

Anson manages dispensaries in Watsons for pharmacy operations. He is also the Chief Preceptor in charge of recruiting and training pre-registration pharmacists.

"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."

HEALTHCARE

Prof Valerie CHEW
Senior Research Scientist
SingHealth Translational Immunology and Inflammation Centre
B.Sc. (Hons) in Pharmacy (2003); Ph.D. in Immunology (2008)

Valerie leads and develops cancer immunology projects for biomarkers and therapeutic recovery. Her work has gained recognition with multiple grant awards and publication in high impact journals.

"The NUS Pharmacy degree laid a strong foundation in understanding human diseases and drugs discovery, which serve me well in my career in research towards translation to the bedside."

PHARMACEUTICALS

Dr THAM Lai San
Principal Research Scientist
(Global Pharmacokinetics, Pharmacodynamics and Pharmacometrics)
Eli Lilly and Company
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 a project leader and research scientist for global drug development. She utilises pharmacometrics 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, including modelling and simulation techniques, applications of quantitative pharmacology, and understanding of regulatory requirements. These skills serve me well in finding the right dose for the right patient."

Discipline-Based Careers
PHYSICS

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, Nanophysics or Quantum Technologies.

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 sectors ranging from defence to engineering, electronics, infocommunication technologies and materials, amongst others.

Possible Careers
Computer architecture designer
Data scientist
Educator
Engineer
Geophysicist
Industrial design planner
Instrumentation specialist
Materials scientist
Medical and radiation physicist
Medical technologist
Meteorologist
Renewable energy expert
Researcher
Science journalist
Solar energy physicist
Structural engineer

Examples of Industries / Sectors
Defence
Education
Energy
Engineering
Environment and climate
Financial services
Government agencies[1]
Healthcare
Infocommunication technologies
Materials
Microelectronics
Physical sciences
Research and development
Scientific consultation
Semiconductors
Service industries

[1] Agency for Science, Technology and Research, Central Provident Fund Board, Defence Science and Technology Agency, Ministry of Defence, Ministry of Education, Ministry of Home Affairs, Ministry of Transport, Singapore Economic Development Board are some examples.

ENERGY

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."

HEALTHCARE

Dr James C L LEE
Chief Radiation Physicist (Division of Radiation Oncology)
National Cancer Centre Singapore
B.Sc. (Hons) in Physics (1990); Ph.D. in Physics (1996)

James is a medical physicist specialising in radiotherapy physics. He serves on the Ministry of Health advisory committee on Proton Beam Therapy. He was the President of the Southeast Asian Federation of Organizations for Medical Physics (2016 to 2019).

"My physics team pioneered the use of intensity modulated radiotherapy in 2001, which introduced advanced radiotherapy treatment in Singapore. This treatment destroys cancer cells while significantly sparing nearby healthy tissues, hence improving the quality of life for patients."

TELECOMMUNICATIONS

LUM Chune Yang
Co-Founder and CEO
SpeQtral Pte Ltd
B.Sc. (Hons) in Physics (2004)
M.Sc. in Physics (2006), Pennsylvania State University
MBA (2010), INSEAD

Chune Yang combines business insights with deep knowledge of space-based quantum communications to offer business solutions for the security of communication networks in the quantum-enabled world.

"My interest and background in science, as well as commercial experience, motivated me to explore the intersection of diverse disciplines and to translate deep research into commercially viable products and services. This served me well when I ventured into the business world."

Discipline-Based Careers
STATISTICS AND APPLIED PROBABILITY

The NUS Statistics and Applied Probability Department, 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 about the scientific application of mathematical principles to data collection, analysis and presentation, that is crucial for data-driven decision-making. Examples include: how to design an experiment to answer a scientific question within resource constraints; how to conduct a survey that will yield reliable conclusions; and how to put together knowledge from experiments and surveys to make predictions.

You can opt to read a Second Major in Data Analytics, which equips you with the skills to apply computing and statistical methods to analyse complex data.

Upon graduation, you will have strong statistical and analytical skills, which will stand you in good stead to manage voluminous data in diverse sectors, including consumer businesses, electronics, financial services, manufacturing and pharmaceuticals, amongst others.

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

Examples of Industries / Sectors
Biomedical sciences
Chemicals
Consumer businesses
Education
Electronics
Financial services
Government agencies[1]
Healthcare
Infocommunication technologies
Insurance
Manufacturing
Pharmaceuticals
Research and development
Telecommunications
Transportation

[1] Agency for Science, Technology and Research, Government Technology Agency of Singapore, Info-Communications Media Development Authority, Ministry of Education, Ministry of Finance, Ministry of Health, Ministry of Manpower, Ministry of Trade and Industry, Ministry of Transport, Monetary Authority of Singapore, Smart Nation and Digital Government Office are some examples.

FINANCIAL SERVICES

TAN Zhang You
Senior Credit Risk Analyst
Maybank Singapore Ltd
B.Sc. (Hons) in Statistics (2017)

Zhang You analyses credit data to identify and evaluate credit risks, enabling accurate budget forecasting for consumer and corporate loan portfolios. He also provides solutions to minimise potential loan loss.

"I utilise the statistical tools from my course daily, to manage the bank's credit risk portfolio effectively. The data mining and programming skills I acquired also enable me to better compute risks in determining credit reserves, and to improve the automation for credit risk reporting."

HEALTHCARE

Carol CHEN
Biostatistician (Biostatistics Unit)
NUS Yong Loo Lin School of Medicine
B.Sc. (Hons) in Statistics (2008); M.Sc. in Biostatistics (2012)

Carol's work helps to enhance the quality of research and biostatistical knowledge of the medical community through collaborations on research projects and biostatistical training courses.

"I perform statistical analysis on wide-ranging studies, from classic epidemiology to cutting-edge clinical trials. I also provide statistical consultation and course training for researchers and clinicians from various healthcare and research institutes. This enables them to advance biomedical research and healthcare."

TRANSPORTATION

TAY Yu Heng
Data Scientist
GrabTaxi Holdings Pte Ltd
B.Sc. (Hons) in Statistics (2014)

Yu Heng conducts data analysis to assess Grab customers' credit worthiness. This enables him to provide them financial mobility solutions.

"I acquired analytical skills and statistical knowledge from my course, which I now apply to solve data-driven problems facing the transport sector. These skills enable me to model Grab drivers' credit risks, using their productivity metrics and app usage frequency."

Discipline-Based Careers
COMPUTATIONAL BIOLOGY

NUS offers a four-year programme in Computational Biology, an exciting new field of data-intensive biological science. This multidisciplinary programme is offered by the Faculty of Science, involving 10 departments across three faculties: the Departments of Biological Sciences, Chemistry, Mathematics, 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 and Immunology, 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 biotechnology, healthcare, and infocommunication technologies, amongst others.

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

Examples of Industries / Sectors
Biotechnology
Government agencies[1]
Healthcare
Infocommunication technologies
Pharmaceuticals
Research and development
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 are some examples.

AGRO-BIOTECHNOLOGIES

Lakshmi ALAGAPPAN
Assistant Research Officer
Wilmar International Ltd
B.Sc. (Hons) in Computational Biology (2019)

Lakshmi integrates photonics and Artificial Intelligence to develop fast methods for detecting food toxins, which improves quality control and ensures food safety.

"The programming skills I acquired give me an edge in developing computational methods to analyse biological and chemical data. My degree also allowed me to explore my passion for both the science and art of research, which greatly contributed towards my growth as a researcher."

BIOINFORMATICS

MIYAJIMA Jhoann Margarette Tristeza
Research Officer
Bioinformatics Institute
Agency for Science, Technology and Research
B.Sc. (Hons) in Computational Biology (2019)

Jhoann conducts computational analysis of protein sequence and structure to predict various aspects of molecular and cellular functions. She develops mutational pipelines for drug resistance and explores the computational design of proteins to improve biological function.

"My course provided a strong biological foundation and leveraged on quantitative tools such as machine learning and algorithm design that aim to solve biological problems computationally. It motivated me to pursue an Artificial Intelligence-driven research to which innovation is fundamental to any industry."

Discipline-Based Careers
ENVIRONMENTAL STUDIES

The Bachelor of Environmental Studies is a four-year programme offered by NUS. It is jointly hosted by the Faculty of Science and the Faculty of Arts and Social Sciences with participation from the Faculty of Engineering, Faculty of Law, School of Design and Environment, NUS Business School, and the Saw Swee Hock School of Public Health.

In this cross-disciplinary 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 will participate experientially in real-time field studies in the region, and acquire insights into varied approaches in addressing today's complex environmental challenges such as climate change, exploitation of land and water, pollution and building liveable high-density cities.

Upon graduation, you will be competent in developing robust policies and processes to address pressing environmental issues, for careers in both the public and private sectors.

Possible Careers
Conservation biologist
Ecologist
Educator
Environmental consultant
Environmental health officer
Environmental impact assessor
Environmental quality specialist
Environmental sustainability specialist
Environmental technologist
Forest conservationist
Parks manager
Public policy analyst
Researcher
Wildlife biologist

Examples of Industries / Sectors
Ecotourism
Education
Environmental consultancy
Environmental management
Environmental planning
Government agencies[1]
Natural resource management
Research and development
Sustainable development

[1] Housing & Development Board, Ministry of Education, Ministry of National Development, Ministry of the Environment and Water Resources, National Environment Agency, National Parks Board, Singapore Food Agency, Urban Redevelopment Authority are some examples.

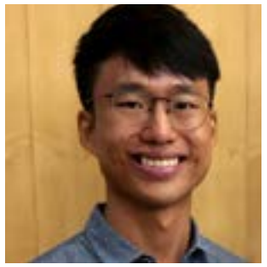
ENVIRONMENTAL CONSERVATION

Cheyenne Alexandria PHILLIPS
Education Facillitator
Wildlife Reserves Singapore
Bachelor of Environmental Studies (Hons), Specialisation in Environmental Biology (2016)

Cheyenne educates school children about animal life and welfare, as well as the impacts of human activities on the environment.

"This groundbreaking course enabled me to explore complex modern environmental issues, and enhanced my understanding of the interconnectivity between society, culture and the environment. It also shows how small actions can have major impacts, an insight that is relevant for both environmental issues and different life scenarios."

GOVERNMENT



Dillen NG
Manager of Biodiversity (Terrestrial)
National Parks Board
Bachelor of Environmental Studies (Hons), Specialisation in Environmental Biology (2019)

Dillen's work on conserving terrestrial biodiversity involves managing conservation projects, and contributing to policies for the long-term sustainability of Singapore's biodiversity. He also organises outreach events to generate environmental awareness.

"I apply my passion in sustainability and love of fieldwork in my daily work, where I survey sites and analyse biodiversity information to identify trends for application in species and area management. This gives me great job satisfaction as I can make a tangible difference to the future of biodiversity conservation in Singapore."

CONTINUING AND LIFELONG LEARNING

Our programmes serve as an excellent springboard for continual learning. Some of our graduates embark on postgraduate studies or careers in academia or research, contributing to the further advancement of science. Others pursue Continuing Education and Training (CET) courses, to stay competitive in a disruptive economy.

Dr TING Yuan-Sen

Postdoctoral Fellow
Institute for Advanced Study, Princeton University
Observatories of the Carnegie Institution for Science
NASA Hubble Fellow
B.Sc. in Physics (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."

Dr TAN Yaw Sing

Research Scientist
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 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."

Fadhli Z I ADESTA

Patient Care and Product Manager
Nalagenetics Pte Ltd
B.Sc. (Hons) in Pharmacy (2015)

Fadhli read two modules - Pharmaceutical Marketing and Entrepreneurial Marketing - under NUS' Lifelong Learners (NUS' L³) Programme to complement his pharmacy training.

"The business skills I acquired helped me advance my career, from being a frontline pharmacist to a strategic business role. I am now better equipped to assess business plans and manage commercial clients."

NG Jinsheng

Director and Co-Founder, Training and Consulting (Data Analytics)
The New Norma Pte Ltd and AnaVantage Management Consultancy LLP
B.Sc. in Statistics (2008)
M.Sc. in Knowledge Management (2011), Nanyang Technological University

Jinsheng took several modules under NUS' L³ programme related to data science, machine learning techniques and the Internet of Things, so that he can deliver advanced analytics training solutions to clients.

"The courses deepened the programming and computing software knowledge I picked up from my studies, and boosts my career development in the space of data analytics training and consulting. I plan to read more modules like deep learning to stay relevant amidst rapid technological change."

CHAN Joy Seng

Director and Accredited Nutritionist
Alive Nutrition Consultancy
B.Appl.Sc. in Food Science and Technology (2004)
M.Med.Sc. in Human Nutrition (2015), The University of Sheffield

Joy Seng took two modules under NUS' L³ programme on Nutritional Biochemistry and Evidence-Based Functional Foods. This enables him to better deliver nutrition knowledge and applications through his health talks and workshops.

"As a nutritionist involved in public education and training, it is important to stay abreast of new knowledge in nutrition science. This enables me to present the latest scientific evidence through different platforms to create awareness on healthy diets amongst corporate organisations and community groups."

CAREERS IN ENTERPRISE

The process of entrepreneurship mirrors the process of charting new paths through innovation in science. Some of our alumni have ventured into the unknown by starting their own businesses. Others transform their research into deep technology startups. All of them overcame challenges and translated their dreams into products and services that benefit society.

CONSUMER BUSINESSES

Dr GAO Jing *(left)*
Co-Founder and CEO
B.Appl.Sc. (Hons) in Food Science and Technology (2012); Ph.D. in Food Science and Technology (2017)

JIN Xiaoxuan *(right)*
Co-Founder and CTO
B.Appl.Sc. (Hons) in Food Science and Technology (2016)
AuroraFood

AuroraFood is a food technology platform that reformulates sweet indulgences to diabetic-friendly bakery products with lower glycemic index levels.

"It is highly fulfilling that we can apply our research experience in functional foods development to provide consumers healthier, nutritious and sustainable food choices. This helps them to manage and prevent diabetes and other diseases arising from lifestyle choices."

EDUCATION

Betty ZHOU
Founder and CEO
Miao Academy (Singapore)
B.Sc. (Hons) in Quantitative Finance (2014)

Betty leverages machine learning and Artificial Intelligence to help students aged 13 to 18 to learn STEM (Science, Technology, Engineering, and Mathematics) subjects and access educational resources more efficiently.

"I learnt to view everything through alternative lenses. This was invaluable as I had no experience in a startup and no coding expertise. Miao would not have taken off without guidance from diverse domain experts, or if we had adopted a closed mindset to trying different technical programmes."

ENTERPRISE TECHNOLOGY

Charmain TAN
Co-Founder and CEO
QuickDesk Pte Ltd
B.Sc. (Hons) in Statistics (2012)

QuickDesk helps sales professionals improve productivity, by seamlessly managing the entire sales and marketing process. It serves over 900 Small and Medium Enterprises in Singapore and is now widening its footprint to Malaysia. Charmain was named in *Forbes 30 Under 30* list (2019).

"I now realise the immense practical value of statistical skills. The solid foundation from my course provided the foundation for me to evolve QuickDesk into an Artificial Intelligence-enabled, sales automated customer relationship management system."

ENVIRONMENTAL SUSTAINABILITY

Kelvin LING
Co-Founder
Oleum Levo Pte Ltd
B.Sc. (Hons) in Chemistry (2011)

Oleum Levo delivers cost-efficient technology-driven solutions for treating oily wastewater. The improved quality of treated water reduces the discharge of oil and grease into the sea, which severely disrupts marine life.

"My science training encouraged me to be innovative and adaptive. These attributes serve me well in navigating the complex and fast-paced world of entrepreneurship."

HEALTHCARE

Dr GOH Wei Jiang *(left)*
Co-Founder and CEO
B.Sc. (Hons) in Pharmacy (2012); Ph.D. in Pharmaceutical Science (2018) MBA (2018)

Dr LIM Seng Han *(right)*
Co-Founder and COO
B.Sc. (Hons) in Pharmacy (2011); Ph.D. in Pharmaceutical Science (2018)
Craft Health Pte Ltd

Craft Health is a personalised nutrition and medicine platform leveraging on 3D printing technologies. It simplifies medicine taking and reduces patients' pill burden. This improves their health outcomes.

"We had learning opportunities in both pharmaceutical science, on the technical foundations for formulation work, as well as pharmacy practice, which gave us insights into healthcare systems. This knowledge is useful and actionable to the real-world setting."

HUMAN RESOURCES

Jackie TAN
Co-Founder
UpLevel
B.Sc. (Hons) in Life Sciences (2010)

UpLevel helps technology companies discover and develop data science talent by co-designing data science training projects to assess candidates, thereby closing the gap between coding education and employability. Jackie was named in *Forbes 30 Under 30* list (2018).

"Both science and entrepreneurship call for the same intellectual rigour and the ability to conduct iterative testing of hypotheses and ideas. The resilience acquired from my training helped me to bootstrap two startups, with limited resources."

GENERAL PROFESSIONAL CAREERS

NUS' multidisciplinary science education arms our graduates with specialised domain knowledge and transferable skills like problem-solving. Many of our alumni enjoy meaningful and rewarding general professional careers, at virtually any type of organisation, within and outside the field of science.

FINANCIAL SERVICES

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."

HEALTHCARE

Raphael ONG

APAC Head (Strategic Initiatives and Commercial Excellence)
Teleflex Incorporated
B.Sc. (Hons) in Life Sciences (2012)

Raphael works closely with regional and country leadership teams to plan and execute key strategic initiatives and build commercial excellence capabilities to drive organisational effectiveness.

"My life sciences domain knowledge, understanding of the regional healthcare landscape, and prior experience in management consulting enable me to deliver high-impact analyses with implementable business strategies. My science education also gave me global exposure, and equipped me with qualitative and quantitative reasoning skills to address critical business issues."

HEALTHCARE

PNG Yong Koh

Vice President
DCH Auriga Singapore
B.Sc. (Hons) in Pharmacy (1987)
Master in International Business (1999), Curtin University

Yong Koh oversees the company's overall operations, covering commercial, business development and logistics aspects, with profit and loss responsibilities.

"The versatile curriculum opened doors to rewarding careers in the pharmaceutical and healthcare industries. The domain knowledge in pharmaceutical sciences, anatomy, microbiology, pharmacology, biostatistics and pharmacy law was very relevant in my varied roles over the years which included marketing management, training, regulatory affairs and product management."

HOSPITALITY

William CHUA

Director (Revenue Generation and Distribution)
HPL Hotels & Resorts Pte Ltd
B.Sc. (Hons) in Applied Mathematics (2000)

William manages room revenue, develops strategies for generating room sales and overseas revenue management efforts for each hotel in the group.

"My broad-based science education prepared me to think with rigour, as well as innovatively. I am thus able to work effectively with our hotel properties to analyse their respective market segments for revenue opportunities. This requires rigorous customer analysis, product realignment for market competitiveness and room usage optimisation."

NON-PROFIT ORGANISATIONS

Sean KONG

Chief Training Officer
Halogen Foundation (Singapore)
B.Sc. in Physics (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 Employers 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."

EXCITING CAREERS

Contrary to perception, some of the most exciting careers are in the sciences. With such an extraordinary breadth of fields to study, our graduates are able to branch into countless jobs, including newly emerging, unconventional and niche jobs.

ADVOCACY

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 trend-setter 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."

ARTS AND CULTURE

KOK Heng Leun

Artistic Director
Drama Box Ltd
B.Sc. in Mathematics (1990)

Heng Leun, formerly Singapore's Arts Nominated Member of Parliament (2016 to 2018), started Drama Box, a socially-engaged theatre company, after graduation. He is known for championing artistic discourse across different segments of society.

"The seemingly diverse fields of arts and mathematics share parallels in thought and processes, such as similar ways of looking for patterns and structures, and the demand for rigour in both."

SOCIAL INNOVATION

Kat NEO

Co-Founder
Timeliss Pte Ltd
B.Sc. (Hons) in Chemistry (2007)

Timeliss is a one-stop, go-to portal which enables families to manage end-of-life matters in an accessible and affordable way.

"Science geared me to be both a 'problem-finder' and 'problem-solver', while my experiential entrepreneurial education taught me to continually reflect upon, and improve ideas. These attributes helped in my startup journey to empower families and provide them peace of mind in legacy planning."

TRANSFORMATION IN CAREER PATHWAYS

Our broad-based education equips our graduates with crucial foundational skills, such as resilience, adaptability and the passion for lifelong learning. This enables them to make transitions into multiple careers in diverse domains. Some of our alumni have diversified into unfamiliar domains. They remain highly employable as they can quickly integrate into fast evolving work environments.

CHAN Kailin

Co-Founder
AlfaCloud HK
B.Appl.Sc. in Computational Finance* (2004)

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

Dr INTAN Azura Bte Mokhtar

Assistant Professor
Singapore Institute of Technology (SIT)
B.Sc. in Physics (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 SIT. 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 22 years is proof that the possibilities for science graduates are limitless."

Dr Intan started her career teaching physics and mathematics and thereafter, ventured into consulting in information science, public administration, change management and leadership and thereafter, academia.

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)
B.A. in Fine Art (2001), Royal Melbourne Institute of Technology
B.A. in Translation and Interpretation (2018), 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
CEO, 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. In January 2018, he assumed the role of Deputy Chief Executive of the National University Health System.

"The Faculty of Science's collegial environment of working closely with peers of diverse backgrounds gave me a wonderful university experience. The learning stuck with me and has helped me through the years in my career."

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

Dr Bernard LEONG

Head of Machine Learning and Artificial Intelligence (ASEAN)
Amazon Web Services
B.Sc. in Physics and Materials Science (1998)
Ph.D. in Physics (2003), University of Cambridge

Bernard develops the strategy and drives business development for Amazon Web Services' Artificial Intelligence and machine learning services across ASEAN.

"My science training provided valuable skills which greatly helped my careers in academia, startups, and in the corporate sector. I acquired the learning agility to figure out solutions to new challenges, be it a problem in genomics or leading a technology and business team. A science degree is the best education to stay relevant, given the accelerating pace of technology in most industries."

Bernard started his career as a theoretical physicist, before venturing into the startup and corporate world, where he held leadership roles in SingPost and Airbus Aerial Asia.

TRANSFORMATION IN CAREER PATHWAYS

TUNG Soo Hua

Presenter / Executive Editor
MediaCorp Pte Ltd
B.Sc. (Hons) in Mathematics (1997); M.Soc.Sc. in International Studies (2007)

Soo Hua is a multiple award-winning news and current affairs presenter on Channel 8, MediaCorp. Besides presenting, she also oversees *Morning Express*, a daily info-news programme in the morning time belt.

"My science education gave me resilience to manage change. Now, I live the change daily as a journalist."

Soo Hua started as a broadcast journalist and has assumed bigger editorial responsibilities at MediaCorp.

Dr YANG Jie An

Trainee Patent Attorney
Davies Collison Cave Asia Pte Ltd
B.Sc. (Hons) in Chemistry (2009)
Ph.D. in Chemistry (2014), University of Illinois at Urbana-Champaign

As a trainee patent attorney, Jie An facilitates the protection and commercialisation of inventions in technical areas such as pharmaceutical sciences, nanotechnology and materials sciences.

"My research background in pharmacokinetics, inorganic chemistry, nanotechnology, polymer sciences and composites prepared me well to work in patent analytics, management and prosecution for clients in government institutes, academia, multinational companies and startups around the world."

Jie An started his career in research with a multinational company in the chemicals industry, before switching to a new career in intellectual property law.

1

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