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Careers that help make people healthier are in huge demand

## HEALTH SPORTS

#### LEARN MORE:

Join the Icon Athlete podcast for tips on nutrition and fitness: bit.ly/lconPod Get helpful hints on encouraging inclusion, diversity and player wellness: playbytherules.net.au

#### STUDY OPTIONS:

**Bachelor of Applied Science** (Exercise and Sport Science): University of Sydney: bit.ly/BASUSYD Master of Sports Medicine: UQ: bit.ly/MSMedUQ

SHARE THIS: Youtube: bit.ly/TedSportSci Instagram: bit.ly/SportGram

#### HOT JOBS: Sport physiotherapist: \$50k - \$108k\*

Doctor/physician of sport medicine: \$49k - \$202k

> \*Salaries according to PayScale.com

## LET'S GET Physical

#### TUGUY ESGIN IS TACKLING NONCOMMUNICABLE DISEASES IN INDIGENOUS COMMUNITIES THROUGH EXERCISE AND SPORTS SCIENCE

🕇 n Tuguy's first day as an Aboriginal health worker, he igcup was shocked by his first patient's health markers: their blood glucose was twice the healthy level and their blood pressure was dangerously high. He was even more surprised to hear the markers described by other staff as "normal". Tuguy, a Noongar man from Perth, decided to tackle chronic non-communicable diseases in Indigenous communities. Tuguy worked in Indigenous communities as part of his

health sciences degree, and was frustrated with the standard biomedical approach to health treatment. "There needs to be a greater focus on preventative, holistic approaches," he says.

His PhD thesis was based on the concept of 'exercise as medicine'. Tuguy tracked the physiological and psychological effects of Indigenous people training in gyms and his findings provided quantitative evidence of how exercise can improve quality of life outcomes.

The study facilitated a community approach to exercise. "I learnt so much about the Noongar culture," says Tuguy.



BACHELOR OF HEALTH SCIENCES (ABORIGINAL HEALTH AND COMMUNITY DEVELOPMENT). UNIVERSITY OF SYDNEY



ABORIGINAL HEALTH WORKER DERBARL YERRIGAN HEALTH SERVICE, PERTH, WA



MASTER OF HEALTH SCIENCE (INDIGENOUS COMMUNITY HEALTH). UNIVERSITY OF SYDNEY



PHD (EXERCISE AND PORT SCIENCE), EDITH COWAN UNIVERSITY

LECTURER IN EXERCISE AND SPORT SCIENCE. UNIVERSITY OF SYDNEY

BACHELOR OF EXERCISE AND MOVEMENT Science/bachelor of **BEHAVIOURAL SCIENCE, QUT** 

#### MORE CAREERS WITH HEALTH! VISIT CAREERSWITHSTEM.COM FOR INSPIRING STORIES, AMAZING PEOPLE, INTERACTIVE QUIZZES AND MORE. ISCOVER I

STUDENT INTERNSHIP.

RUGBY UNION

(QUEENSLAND REDS)

QUEENSLAND

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## WANT MORE?

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## GAME ON

Luke Stutter is using his passion for fitness and mental wellbeing to help rugby players compete at an elite level

uke Stutter studied a dual degree in exercise science and physiology at QUT because he was interested in how our mental health affects our physical health. Now he's making a successful career in

providing strength and conditioning training, and mental health support, for rugby union teams like the Queensland Reds and the women's national team, the Wallaroos.

Luke was an intern with the Queensland Reds for nearly three years. His favourite part of that job? "I was training with the best of the best in the country, and having a hand in their career success. It was really awesome."

Constant mental stresses can really affect a player's game. "Returning from a shoulder injury, for example, players lack the confidence to tackle or play hard. It's so important for athletes to be able to stay in the right mindset."

With Australia's ageing population and declining exercise and activity in kids, sports therapists are going to be more important than ever in schools and communities to keep us healthy and active.







**GUT** Health Clinice

Exercise and Movement So

CONDITIONING COACH,

ST JOSEPH'S NUDGEE

COLLEGE, BRISBANE

## Top 9 industries for science graduates

Science will take you far beyond the lab – here's just a glimpse at today's biggest, brightest and best career outcomes. Go ahead, choose your future!

### CODE, CREATE AND CONNECT

mathematics, statistics

and technology Jobs: Computer scientist, information systems professional, systems analyst, web developer Study: Science majoring in computer science, information systems,

Tech careers in industries like robotics, communications, gaming and security are set to explode. The Australian ICT workforce is expected to expand to 700,000 workers by 2020, with growth nearly 1.5 times greater than the rest of the job market (Deloitte Access Economics, 2015).

#### GET SMART ABOUT BUSINESS Business, management

and consultancy

Jobs: Entrepreneur, business owner, human resources manager, business/ management consultant Study: Science majoring in maths, statistics, economics, business, management

Entrepreneurs are making their mark in economics, finance, agriculture, healthcare and many more industries, while in 2017, 35,000 consultants will sell \$8 billion worth of advice in Australia alone (University of Sydney, 2017). Due to their high-level, complex reasoning skills, science graduates are highly valued in the consulting industry (University of Sydney, 2017).

#### MAKE A BETTER WORLD Sustainability and energy

Jobs: Environmental scientist, environmental consultant, environmental protection officer Study: Environmental science, environmental systems

Job prospects are looking great for the next wave of 'green collar' workers. The global green economy is worth \$6 trillion and is the world's fastest growing market, whether in buildings, infrastructure, water or mining. In Australia, the green workforce will grow to 850,000 by 2030 (University of Sydney, 2017) – great news for the environmentallyminded science graduate.

#### **GET FASTER, FITTER + BETTER** Health and sports sciences

Jobs: Dietitian/nutritionist, biomechanist, sports statistician, exercise physiologist, sports/exercise scientist, sports psychologist, sports dietitian Study: Dietetics, nutrition, physiology, anatomy, psychology

As our global obsession with living a healthy lifestyle grows, so does the job market in the health sciences. Employment for dietitians has risen by a rate of 5.6% over the past five years and is expected to continue to grow (Open Universities, 2017). Sports scientists – who assist athletes with their training and rehab – are also in high demand.

## WANT MORE?

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#### TEACH THE NEXT GEN Education and training

Jobs: Science teacher, school administrator, curriculum developer, science presenter, training content writer, training consultant, research officer

Study: Education, communication

Looking to inspire the next generation of scientists? There are a range of government incentives and scholarships to encourage young people to work in STEM education, particularly in rural areas. Always in demand, education and training jobs are projected to increase by 500,000 in 2025 (Federal Government Future Focus Report, 2013).

#### FIGHT DISEASE AND DISABILITY

Medicine and biotechnology Jobs: Analytical chemist, biomedical scientist, health physicist, microbiologist, neuroscientist, laboratory technician, clinician, policy and business developer Study: Biochemistry, microbiology, neuroscience, statistics

It's not just doctors who save lives – scientists are frequently at the origin of medical advances. There are currently more than 40,000 jobs in the biotechnology and pharmaceutical sectors (University of Sydney, 2017).

#### SEE THE BIG PICTURE Data science

Jobs: Data scientist, data analyst, computer scientist, mathematician, bioinformatician Study: Data science, computer science, mathematics, statistics, bioinformatics

The Harvard Business Review called data science "the sexiest job of the 21st century" for a reason! Industries such as medicine, life sciences, insurance, retail and security rely on data scientists and analysts. The big data global market will grow to more than \$200 billion in 2020 (IDC, 2015) and in Australia, demand for data scientists is far outstripping supply.

#### FARM THE FUTURE Agriculture and food

Jobs: Agricultural/environmental scientist, agricultural advisor/manager/consultant, agronomist, food scientist, food microbiologist, food quality assurance officer Study: Environmental studies, soil science, agribusiness, food science

From the farm to our plates: the complete agricultural supply chain provides more than 1.6 million jobs to Australians, and the food industry accounts for about 15 per cent of all jobs. There's currently a huge demand for agricultural science graduates, with six jobs available to every graduate (University of Sydney, 2017).

#### SCAN THE SKIES Astronomy

Jobs: Astronomer (in observatories, universities, and research organisations such as CSIRO and CAASTRO), science presenter (in museums) Study: Astronomy, physics, computer science, mathematics

The sky's the limit for Australian astronomers. We're at the forefront of the industry, playing a huge role in the construction of the next-generation radio telescope with the international Square Kilometre Array organisation, which will be used to make ground-breaking discoveries about the universe. Astronomers also gain skills that are translatable across climate science, data analytics, engineering and much more.







## e a planet saver

## Want to tackle climate change and famines? A career in science can take you there!

e live in a time where global temperatures are reaching record-breaking levels, millions of people go hungry every day and entire ecosystems are under threat. Thankfully, people with science degrees are helping to solve the world's toughest problems, using their knowledge to create smart, renewable energy solutions and develop healthier food.

From cars to electricity, the things we use every day pump enormous amounts of greenhouse gases into the atmosphere. The CSIRO has developed a powdered material that could help cut the harmful emissions produced by industry.

With more than 700 million people around the world going hungry, scientists are also exploring ways to make food more nutritious for those who need it the most. A team from UNSW Sydney are developing methods for fortifying wheat flour with more nutrients, such as iron, zinc and niacin, to help communities get the most out of their food. There's many other ways scientists are helping to improve lives and create a better, healthier environment. - Gemma Conroy

## PROFILE HUNGER FIGHTER BRENDAN BROWN IS USING HIS SCIENCE KNOWHOW TO HELP FARMERS IN AFRICA GROW FOOD

took a career guidance survey in high school, and the first career that came up for me was agricultural scientist. I loved the idea of working outdoors while solving some of the world's biggest problems, from food security to environmental sustainability.

"While I was studying agriculture and soil science at university, I got involved with social justice issues. I became aware of how my scientific skills could be used to make a positive impact. I developed a passion for helping farmers improve their livelihoods after doing work experience in Tanzania.

"Through my research, I have helped farmers and aid organisations better understand technological change so that they can grow more food and earn a better income. With climate change and economic challenges, millions are still going hungry. We need motivated and skilled young scientists to solve these problems for good."

### WANT MORE?

BRENDAN

🖪 BROWN

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# Amazing Aussie inventions that are saving the planet



You've obviously heard of solar and wind energy, but the ocean can also be a powerful energy source. Carnegie Clean Energy has invented an underwater unit that harnesses the massive amounts of energy produced by ocean waves to produce electricity and desalinated water. Visit: www. carnegiece.com/wave

## FROM TYRES TO FUEL

Discarded tyres are a common sight in bushland and riverbanks, creating a breeding ground for disease-carrying mosquitoes. Green Distillation Technologies has found a way to convert tyres into carbon, oil and steel – without producing harmful emissions. Visit: gdtc6.com

## FLOATING RUBBISH BIN

It is estimated that by 2050 there will be more plastic than fish in our oceans! Developed by two eco-savvy surfers, Seabin is a floating device that can collect up to 1.5 kilograms of trash, oil and detergents from waterways each day. Visit: seabinproject.com



## **HEAT-BOUNCING PAINT**

To reduce the need for energy-sucking air conditioners in summer, SkyCool have invented a paint that deflects heat from the sun. The paint is applied to the roof to reflect heat before it enters the building. Visit: skycool.net.au

## SUN-CATCHING

With more people switching to solar energy, there's a push to make the technology even more efficient. Tractile have created solar roof tiles that are the only tiles in the world that can provide a home with electricity and heated water. Visit: tractile.com.au

## SCIENCE-SAVE THE PLANET

### MAKE IT YOURSELF

Play **OFFSET!**, a free mobile app/educational game by NASA. Find ways to reduce carbon emissions and tackle global warming.

Track the world's food production and waste in real-time with the World Food Clock.

Learn about renewable energy and power sources by playing Save The World on your computer.

### STUDY OPTIONS

Bachelor of Science (Environment and Sustainability), University of Southern Queensland: bit.ly/USQBofS

Bachelor of Technology (Renewable Energy Systems), University of Newcastle: bit.ly/UNBofTRES

Diploma of Conservation and Land Management, OTEN TAFE NSW: bit.ly/TAFEDipCons

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**с** 

according

\*Salaries

### HOT JOBS

Environmental scientist: \$50k - \$97k\* Engineer, renewable energy: \$66k - \$100k Senior energy consultant: \$73k - \$150k Ecologist: \$48k - \$78k Policy analyst: \$50k - \$110k

DIGITAL TECHNOLOGIES