EPSOM U3A Inc.

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Website https://www.epsom.u3a.nz

MEETING PLACE

Royal Oak Bowls, 146 Selwyn St, Onehunga

10am on the 2ND Thursday of most months

NEWSLETTER

April 2024

Next meeting
10-12 noon
Thursday 11th April 2024

Greetings to all members

I hope this newsletter finds you in good health and enjoying U3A activities, learnings and socialization. All very important things to be doing and much needed for our own well-being as we celebrate each day.

My wife, Julie and I have been on holiday in inland Canterbury where we spent 12 days going up as many braided rivers as we could, starting with snow on the hills behind us at Hanmer Springs. We then visited gorges and small inland lakes. The part we enjoyed most was near Erewhon Station. We stayed at Lake Camp and Lake Clearwater taking the opportunity to walk the 10km around one and 4 km around the other as we missed our U3A walking group. We finished up at Ashburton to visit Trott's gardens and the impressive Public Gardens. This trip confirmed for us how beautiful New Zealand is. We are surrounded by beauty in views, people, gardens and climate. We have much to celebrate.

We are also fortunate with the opportunities we have in U3A sharing and learning with others. I had a wonderful time with Bryn Smith who assisted me in beginning a genealogy process to track both sides of my family. He is a fantastic help.

In all our groups we have the opportunity to learn and share and increase our knowledge. Both in our lives and world our involvement is always about focussing on the large size of the doughnut not the small centre hole. Please join our groups or set one up yourself and give the committee members feedback as to what else Epsom U3A may be able to do by way of events, actions or learning.

So whatever we do, whatever we are learning, let us be positive and adopt Barack Obama's statement. Yes we can.

Blessings

Duncan Macdonald

EPSOM U3A EXECUTIVE

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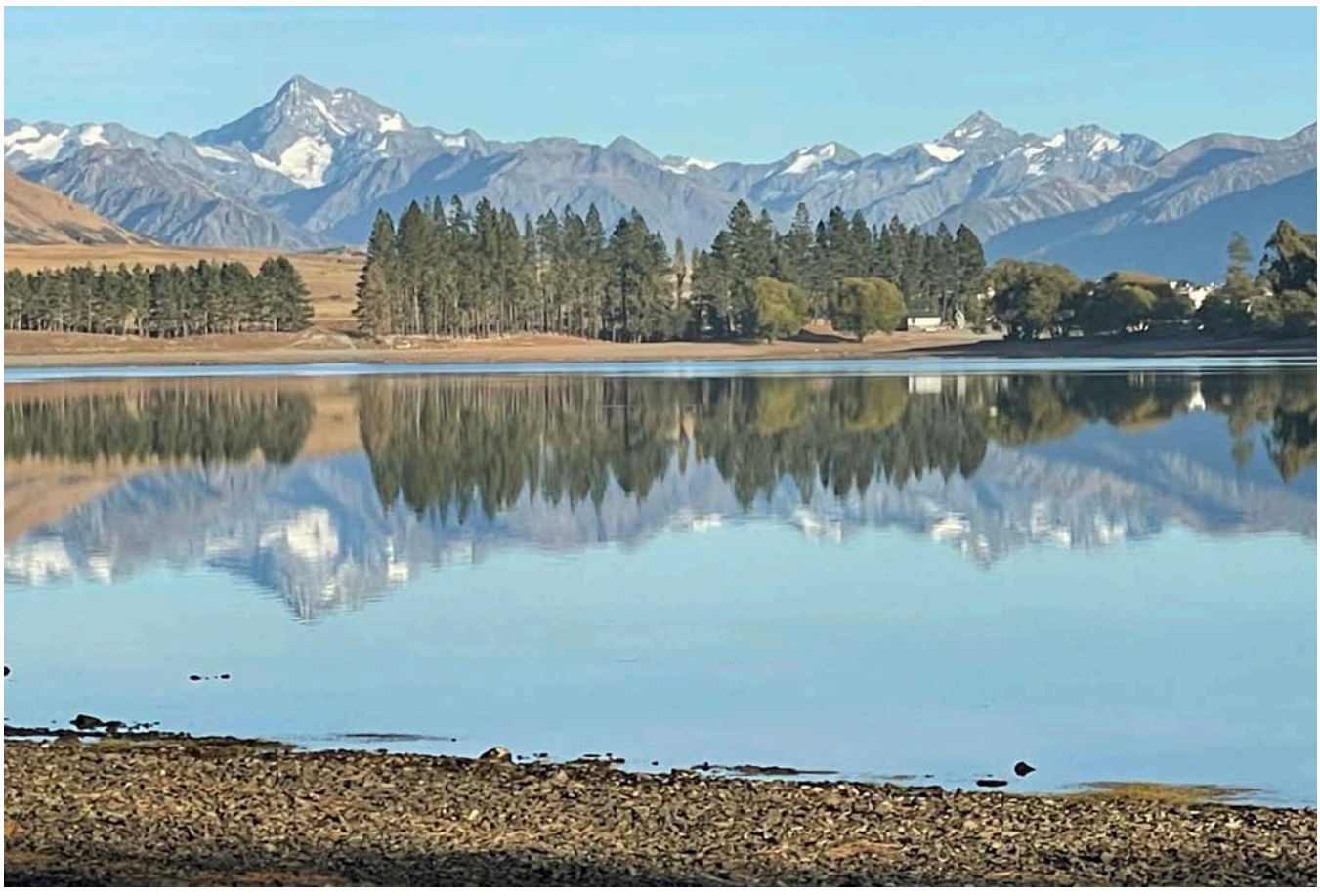
Mike Matson **-** 022-630 7968
Newsletter
Jeanette Grant – 638 8566
Greeters:
Don Buchanan - 620 7572
Ngaire Mune – 624 0226

INTEREST GROUP CONVENERS

Appreciating Performing Arts
Shirin Caldwell – 630 1662
Architecture
Brian Murray – 021 026 68396
Art Appreciation
Kaye Buchanan – 620 7572
Big History
Emily Flynn- 021 0902 5094
Christine Keller Smith - 021 140 9021
Book Chat
Helen Holdem - 021 260 3510
Current Affairs
Shirley McConville – 622 3542
Fabric & Fibre Crafts
Charmaine Strang – 027-4177 556
Famous & Infamous Group
Gary Preston – 021 297 3087
Foodies
Graham Gunn – 027 445 0929.
Garden Appreciation
Betty Townley - 626 6673
Introduction to Family History
Bryn Smith – 027 280 5235
Latin
Phyllis Downes - 630 5867
Lunch Club
Shirley McConville – 622 3542.
Medical Matters
Diana Hart – 021 284 4402
Music Appreciation
Carleen Edwards – 624 6298
19th Century History
Helen Holdem - 021 260 3510
NZ History
Kaye Buchanan - 620 7572
Philosophy
Jocelyn Hewin - 634-1552
Recreational Drawing
Grant Coupland – 638 7496
Scrabble
Joslyn Squire – 021 168 0680
Te Reo Maori
Jenny Whatman – 027 353 2487
Travel
Diana Hart- 021 284 4402
Walkers & Talkers Group
Don Buchanan ph:620 7572.



SPEAKER REPORT
14 March 2024

Professor Stephen Hoadley, an Associate professor of Politics and International Relations at Auckland University, gave a very interesting and enlightening talk entitled Clash of Narratives- The Palestinians and the Israelis.

He traced the changes of boundaries historically since biblical times, and the development of attitudes towards Jews through the ages, the influence of the Great Plague, the Spanish Inquisition and Lutherism, the Ottoman Empire, the Roman Empire and the division of territory that occurred with the Balfour Declaration in 1948 after World War II; all these leading to the current conflict.

He pointed out the two main narratives and encouraged the audience to decide which has more validity.

Palestinians believe that:

1 All the Holy Land is Palestinian, "from the river to the sea".
2 Hebrews, Zionists and Jews are Western colonists.
3 The Israeli state is illegitimate and should be extinguished
4 Israell displaced and expelled Palestinians in 1948.
5 Israel desecrated Aqsa Mosque.
6 The West Bank settlements are illegal.

Currently the prevailing Palestinian narrative around the world seems to be supported by many people, as seen in the protests internationally and in the media, though Hammas are also seen as terrorists and a legitimate more moderate elected government is needed.

Current biases favouring the Palestinians are widespread anti-semitism, envy of Jewish achievements, photogenic media coverage showing explosions, destruction and refugees, blame for colonialism, and the branding of the USA as an accomplice of Western Imperialism. China, Russia, Qatar and Iran feed these biases with disinformation, amplified to create social divisions which attract even more media interest, thus amplifying them.

The Israeli narrative is that:

1 Jews are heirs of indigenous Hebrews.
2 Jews need protection from the 1.5 billion Muslims surrounding Israel. (2 million Palestinians are already 20% of the Israeli population)
3 Land in the Palestinian Mandate was purchased for Jewish settlement and much of it was uninhabited desert.
4 For 30 years Palestinians had authority in the West Bank and Gaza but continue to be corrupt, anti-democratic, anti-semitic and murderous.
5 Travel restrictions are in place only to curb terrorism, and legitimate trading and travel movement is permitted.
6 Israeli casualties, funerals, hostage treatment and incursions are often not reported by the media.
7 Aid agencies have failed to condemn Hammas and Iran for supplying weapons and much Israeli supplied aid is stolen by Hammas and doesn't reach the people.

The dilemma in solving the problem is that both sides have entrenched attitudes, the UN cannot intervene and the USA has lost credibility. Professor Hoadley predicts that after 70 years of skirmishes, the Arab neighbours will eventually continue to deal with Israel for their mutual benefit, via trade, cultural and scientific exchanges and the Palestinians will be sidelined. It is interesting that many Arab countries (eg Saudi Arabia, Libya, Turkey, Morrocco, Egypt) have not become involved in the conflict and are remaining neutral, while the Chinese are only interested in trade and economic advantages and don't want to take sides.

SUBSCRIPTIONS INFORMATION	The 2024 Epsom U3A subscription is $50 per person. It is now overdue. Please pay as soon as possible. **Membership will cease if not paid by 30 April**. No cash will be accepted. This should be paid into our **ASB bank account – 12 – 3067 – 0204618 – 00.** Please enter **subs** in the "code" section and your **name** in the "reference" section in order for us to have a record of your payment. We have 197 members to date, 147 (75%) of whom have paid their subs.
MAIN SPEAKER Dr Shaun Forgie	"My talk will focus on how the humble dung beetle is able to improve New Zealand's water quality by 80%!! I will discuss the types of benefits farms get from the services provided by dung beetles which include significant improvements to: soil health; soil biology; earthworm biomass ; soil fertility; and, above ground productivity. I also mention how dung beetles reduce forage foul on the pasture surface, gut parasites and pest flies".
INTEREST GROUPS	Please note that I have a new gmail address from now on. Email to: joslynmsquire@gmail.com We have a number of new members and some of the groups are getting very large. We need more people prepared to volunteer as convenors. Give me a call and I will let you know what is involved - 021 168 0680. Interest Group Lists – Joslyn will only display the lists for those groups with vacancies at the Branch Meetings. Those groups with full membership will not be available to new members until vacancies arise.
2024 MEETING DATES Thursdays, 10am	11 April 9 May 13 June 11 July 8 August 12 September 10 October 14 November AGM **NB Always wear your name badge** and be seated ready at 10am

JEANETTE'S JOTTINGS

MOON MYSTERY SOLVED

Thanks to a pair of tiny lunar rovers, the mystery of Japan's crippled SLIM Moon lander has been solved. Images returned by the two robots show that the spacecraft bounced and is sitting on its nose, preventing its solar panels from charging.

When JAXA's SLIM spacecraft touched down on the Moon on January 19, 2024, it was a real cause for Japan to celebrate. Not only was the country the fifth to successfully land on our satellite, it did so with an unprecedented degree of precision. Unfortunately, while the lander was intact and its systems were operating as predicted, the solar panels weren't charging the battery, giving SLIM only hours to live.

To prevent a premature end to the mission, JAXA engineers ordered the lander to power down into sleep mode while the problem was addressed. By a stroke of good fortune, SLIM had deployed two tiny rovers called Lunar Excursion Vehicle 1 (LEV-1) and Sora-Q before landing. Shaped like a toy ball, Sora-Q has a camera aboard, which it used to take images of the landing area and of SLIM. It then relayed the images back to Mission Control using LEV-1, which has a powerful enough transmitter to directly contact Earth, though at a very low data rate.

The result of these images was to show that SLIM was sitting on its nose with the solar panel pointing west. The attitude is probably the result of the lander bouncing on impact in the low lunar gravity.

The good news is that the mission is continuing and JAXA hopes that the lander will be able to charge its battery as the 14-day lunar day progresses enough for sunlight to fall on the panel.

Source JAXA

SHORT OF SAND?

When you think of resources we're running out of, sand might not be high on your list, but it's up there thanks to our high demand for concrete. Scientists at Rice University have now shown that substituting graphene can not only save sand, but makes concrete lighter, stronger and tougher.

Despite being a sheet of carbon atoms just one atom thick, graphene has a reputation for being incredibly strong. As such, it's no surprise that this 'wonder material' has been mixed into concrete before, usually to make it stronger and more durable. But that usually involves just adding graphene to the recipe – for the new study, the Rice team wanted to replace sand completely.

Concrete is made of three main ingredients: water, an aggregate like sand, and cement to bind it all together. Sand is the largest component by volume, and given modern humanity's insatiable appetite for concrete, sand mining is increasing. Not only is this process destructive, but it risks running out of sources.

The research comes from the lab of Rice University chemist James Tour, whose team has been making graphene for years using a technique they developed called flash Joule heating. Essentially, a carbon-rich base material is quickly superheated with a zap of electricity, converting it into graphene flakes. In this case, the base material was metallurgical coke, a fuel source created from coal.

"*Initial experiments where metallurgical coke was converted into graphene resulted in a material that appeared similar in size to sand,"* said Paul Advincula, lead author of the study. "*We decided to explore the use of metallurgical coke-derived graphene as a total replacement for sand in concrete, and our findings show that it would work really well*."

Saving sand wasn't the only benefit, either. The resulting concrete was 25% lighter than concrete made with a normal aggregate, and showed a 32% increase in toughness, 33% in peak strain, and 21% in compressive strength. On the down side, there was an 11% reduction in its Young's modulus, a measure of a material's resistance to deformation by stretching.

While the team says graphene is currently too expensive to make this method commercially viable at scale, it at least shows that there are alternatives that could be pursued.

The research was published in the journal ACS Applied Materials.

NASA'S MARS HEICOPTER RETIRES

NASA has declared the end of its Ingenuity Mars helicopter mission. Originally scheduled to last a month with five flights, it lasted for three years with 72 flights before being grounded by damaged rotors after its last flight.

Brought to Mars as part of NASA's Perseverance rover mission, the tiny robotic Ingenuity helicopter entered the history books on April 19, 2021 when it took to the air. As it left the ground, it became the first aircraft ever to fly on another planet.

The original goals of the program were very modest. Ingenuity was meant to be a demonstrator which simply showed that it was possible to build a helicopter that could fly under Martian conditions. Instead, it went on to operate for over 1,000 Martian days on a large variety of terrains and 48 "airfields." Not only did it push the envelope of Martian aerodynamics, it also acted as a scout to help the Perseverance rover seek out new areas to explore.

According to NASA, the end of Ingenuity came on January 18, 2024. On its previous flight, the copter made an emergency landing and couldn't be located. To find it, Mission Control ordered Ingenuity to take off and fly back into view. This flight took it to an altitude of 40 ft (12 m) before descending. Unfortunately, communications with Perseverance were lost and Ingenuity landed hard.

Why this happened is still under investigation, but images returned by Perseverance showed that the rotor blades were damaged, grounding the helicopter after clocking up a total of over two hours of total flight time during its service life.

"The historic journey of Ingenuity, the first aircraft on another planet, has come to end," said NASA Administrator Bill Nelson*. "That remarkable helicopter flew higher and farther than we ever imagined and helped NASA do what we do best – make the impossible possible. Through missions like Ingenuity, NASA is paving the way for future flight in our solar system and smarter, safer human exploration to Mars and beyond."*

Source: NASA

ALARM FOR AMERICANS

Americans aged 25-65 years are dying at far higher rates than their peers from other high-income countries, even surpassing death rates in Central and Eastern Europe.

Compared with high-income peers and CEE countries, the US has higher mortality rates for many causes. For example, while deaths from transport accidents have fallen for most countries since 1990, the rates for US males aged 25 to 44 flatlined in the late 1990s and early 2000s and have increased since 2010. By 2019, they were around 3.5 times higher than peer countries and 1.7 times higher than CEE countries.

MEDICAL MONITOR

Researchers have used off-the-shelf components to create a sensor device that is not only cost-effective but can quickly detect 32 different pathogens and has sensitivities on par with the state-of-the-art biosensors used in pathology labs. The novel device could have a range of applications, from monitoring the effectiveness of cancer therapies to predicting the course of viral illnesses.

Diagnosing diseases early benefits patients and doctors. It enables treatment to slow disease progression and reduces the risk of complications, thereby improving long-term health outcomes. With early diagnosis in front of mind, a team from Helmholtz-Zentrum Dresden-Rossendorf (HZDR) research laboratory in Germany has used off-the-shelf components to construct a cost-effective, palm-sized device that can detect 32 different pathogens simultaneously.

To create their novel device, the researchers borrowed from the field of electronics, using field-effect transistors (FETs) as the basic concept. FETs use an electric field to control current flow in a semiconductor. There are three components: source, gate, and drain. Applying a voltage to the gate surface alters its electrical potential and controls the current flow between the source and drain. The device is 'energized' only when the gate voltage reaches a certain threshold. Different pathogens generate different electrical potentials and, therefore, different currents. Cancer cells, for example, produce a current different from the flu virus. No significant change in the current means that no disease-relevant biomolecules have bound to the sensor (gate) surface and vice versa.

A major disadvantage of traditional FET-based biosensors is that the test surfaces aren't reusable, requiring the entire transistor to be discarded after use, which is costly and not very environmentally friendly. To address this issue, the researchers used a separate electrode connected to the transistor's gate to measure the changes in electrical potential… They found that their device produced results quickly and achieved sensitivities and limit of detection (LOD) values comparable to state-of-the-art FET-based biosensors

"*This allows us the opportunity to use the transistor multiple times*," said Larysa Baraban, the study's corresponding author. *"We separate the gate and refer to it as an 'extended gate' – that is, an extension of the test system."*

The study was published in the journal 'Biosensors and Bioelectronics'.

CHERNOBYL CANCER CURE?

Mutant wolves roaming the wasteland of Chernobyl have developed a new superpower that could have life-saving implications for humans. A team of researchers found the animals in the Chernobyl Evacuation Zone (CEZ) have genetically altered immune systems that show a resilience to cancer. For years, researchers have visited the CEZ to understand how animals have been able to thrive

These findings gave researchers hope that the results can be used to find cures for human cancer patients.

Since the powerplant explosion in 1986, humans were evacuated from Chernobyl and the surrounding areas to avoid the extreme levels of radiation. The absence of humans allowed wildlife to flourish and thrive in the CEZ, which contains 11.28 millirem of radiation – six times the allowed exposure amount for human workers.

The researchers examined the genetic differences between the DNA of mutated wolves in the 1,000-square-mile radius of the CEZ and those outside it.

The results showed that, despite receiving potentially deadly daily radiation doses, the wolves appeared remarkably resilient against its effects. Analysis showed that a number of their genes which are linked to cancer had new mutations to them, suggesting they had evolved to protect against the radiation.

It is hoped that the discovery could pave the way for experts to identify mutations in humans that reduce the risk of cancer.

BENEFITS OF ADHD

While current diagnostic definitions of attention-deficit hyperactivity disorder (ADHD) are relatively new, the general condition has been identified by clinicians under a variety of names for centuries. Recent genetic studies have revealed the condition to be highly heritable, meaning the majority of those with the condition have genetically inherited it from their parents. Depending on diagnostic criteria, anywhere from two to 16% of children can be classified as having ADHD.

What is relatively clear, however, is that the behavioural characteristics that underpin ADHD have been genetically present in human populations for potentially quite a long time. And that has led some researchers to wonder what the condition's evolutionary benefits could be.

In the early 2000s a team of scientists set out to study the genetics of a unique tribe of people in Northern Kenya. Known as the Ariaal, this population has traditionally been incredibly nomadic. Some members of the Ariaal settled down in one place over the 20th century and adopted modern methods of agriculture while other tribe members continued to live as nomadic pastoralists. They compared the genetic and health differences between these two cohorts of Ariaal and discovered something incredibly interesting. Generally, all of the Ariaal people carried a unique genetic mutation, dubbed DRD4/7. which had previously been identified commonly in people with ADHD.

In modern children diagnosed with ADHD, the genetic mutation generally correlates with restlessness and distractibility and in those Ariaal children who had settled into sedentary Western behaviours, the gene was linked to poor health and distracted classroom behaviours. But in those Ariaal who still practised a traditional nomadic life, the gene mutation was linked to strength and better nutritional health.

"*The DRD4/7R allele has been linked to greater food and drug cravings, novelty-seeking, and ADHD symptoms,"* explained study leader Dan Eisenberg back in 2008. "*It is possible that in the nomadic setting, a boy with this allele might be able to more effectively defend livestock against raiders or locate food and water sources, but that the same tendencies might not be as beneficial in settled pursuits such as focusing in school, farming or selling goods*."

The new study was published in the Proceedings of the Royal Society B.