

# CONSUMED

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New Zealand  
**FOOD SAFETY SCIENCE  
& RESEARCH CENTRE**

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1ST JULY**

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## BUGS WITHOUT BORDERS

NZFSSRC has  
**19**  
Research  
Projects  
on the go

and a further  
**13**  
Completed

The Avon Room at the new Christchurch Town Hall was packed with a record number of 125 participants for the third annual symposium of the NZ Food Safety Science & Research Centre.

This high level of engagement at such an early stage is in large part due to the leadership and reputation of founding director, Distinguished Professor Nigel French. He relinquished the position at the end of July, but is staying on

as Chief Scientist. Dr Cath McLeod has now been appointed as his replacement.

Nigel reported that the Centre has 19 research projects on the go, a further 13 completed, with nearly all co-funded by industry. He welcomed the poultry industry (PIANZ) joining the Centre and noted the success of the NZ-China network, which has established good relationships and research collaborations with several universities and food safety research groups in China.

For women attendees, the symposium started before sunrise with a breakfast, sponsored by Zespri, who were represented by Centre board member Dr Sonia Whiteman, a strong advocate for women in science. All the panellists emphasised to young women at the event that they should do what they enjoy, believe in themselves, and not hesitate to put their hand up for jobs (worry about the rest later!). Professor Juliet Gerrard gave credit to all the senior men who had been supportive on her way through. The panellists talked about the power of networking to make women more visible, and provide mutual support.



Ms Nori Parata



Professor Juliet Gerrard



Dr Prue Williams



Dr Jocelyn Eason



Dr Denise Conroy



# DR CATHERINE MCLEOD, THE CENTRE'S NEW DIRECTOR



Deputy Director of the Centre, Dr Tim Harwood, knows the new Director, Dr Catherine McLeod, well.

He says, "Her background and skill set make her ideal for this role. Cath has worked closely with industry abroad for well over a decade, designing and delivering food safety projects that reduce risk and ultimately benefit industry. She brings energy and an understanding of what motivates industry to invest in food safety research. Her PhD in virology, coupled with previous life as a regulator at what was the New Zealand Food Safety Authority, means she is well placed to understand what drives

all of the stakeholders involved with the Centre. And that is crucial."

Cath's most recent positions include Director of the consultancy company Seafood Safety Assessment Ltd, where she focused on providing food safety and market access advice to primary producing industries, retailers and government. She also led the Seafood Safety and Market Access Group within the South Australian Research and Development Institute (SARDI) from 2008 to 2013 and was a senior science advisor within the Ministry for Primary Industries from 2000 to 2007.

Cath's qualifications include a BSc (Hons) on marine biotoxins in shellfish and a PhD on food-borne viruses from Victoria University of Wellington (funded by an ESR post-

graduate scholarship), giving her an overarching perspective on two major human food safety issues. Dr McLeod took up the new role from 23 September and is based in Nelson.

## HOW TO BECOME A MEMBER OF THE CENTRE

If you want to discuss membership terms, and have an idea for a research project, call Director Cath McLeod, **021 954 337**, [C.McLeod@massey.ac.nz](mailto:C.McLeod@massey.ac.nz), or Industry Manager, Vivienne Hunt, **021 0804 2095**, [vivienne.n.hunt@gmail.com](mailto:vivienne.n.hunt@gmail.com). If you are a member, and the research project you have in mind is within our scope, the government will contribute 40% of the cost, and what's more, there will be NO administration fee.

## MORNING:

The morning session of the symposium was a 'deep dive' into the benefits of Whole Genome Sequencing (WGS) for rapid identification of risk, disease pathways, and outbreak sources.



Professor **Martyn Kirk**, ANU, began by reminding the conference that 30% of the global deaths due to food poisoning are children under 5, and

that this vulnerable age group comprises 38% of the 600M cases. Pathogens are global, not local. 'Bugs without borders'. Currently Australia is struggling with an exotic *Salmonella* contamination of eggs. Martyn said the graph keeps trending up despite their best efforts.

WGS may mean that the cause of an outbreak can be identified before it peaks and does most of the damage. Often a whole industry will suffer hurt to its reputation and a catastrophic drop in sales before the one supplier involved is identified as the problem, and even then it can take a long while for sales to recover. WGS will be at the centre of public health surveillance and control. It can also infer an organism's potential to be antibiotic-resistant.

Dr **Pierre Venter** described how Fonterra applies WGS as part of risk management. He gratefully acknowledged the Centre's help in understanding and applying it. WGS is being used to compare biomes from raw milk, cow udders, and soils. He said that Fonterra wants to be "the world's most trusted source of dairy nutrition".



**Kevin Marshall** chaired a panel on Emerging Food Safety Risks.

**Anne Astin** raised a pertinent question for all producers: how can we improve risk communication

with consumers? Centre deputy director, **Tim Harwood**, said that the key take-home message for him was that any future horizon-scanning system needs to be expert-led, and have strong engagement with industry.

Dr **Patrick Biggs** described his investigation into the ecology of *E.coli*, comparing two cohorts of calves on separate farms in the Manawatu. Young calves can be rapidly colonised by STEC O157 (a dangerous shigatoxin-producing species) after



birth, and quickly transmit the bacteria to each other in the close confines of sheds. They sampled each group of 10 calves, from birth to 7 weeks of age.



**Distinguished Professor Nigel French** described the current application of WGS to identify how food-borne pathogens are transmitted globally, underlining the

importance of biosecurity for food safety. On an individual human scale, he told the story of a patient who had *Campylobacter* for 10 years! The infection became chronic and more antibiotic-resistant over time.

**Professor Phil Bremer** from the University of Otago is striving to understand the origin, entry point and dissemination of the problematic *Listeria spp* in food production environments. He interviewed 19 people, across a range of food and beverage companies, to understand what controls and historical data exist, barriers to getting involved in research, and what they would like to know. Some expressed concern about WGS being used to implicate companies in historical outbreaks. *Listeria* is posing an ongoing challenge.



Dr **Rob Lake**, ESR, examined the whole fraught area of sharing WGS databases. Over the last year, NZFSSRC has created a prototype WGS database for *Listeria*

*spp*, adding data from about 400 historical clinical isolates, so far. This will give a genetic population structure for *Listeria* across New Zealand. Rob welcomes feedback from industry and companies. He pointed out that it is research to aid the prevention of contamination in production environments, not an outbreak investigation tool.

**"We need to find a way of sharing data that protects privacy and avoids risk."**

- Dr Rob Lake

## WELCOME TO THE THREE NEW INDEPENDENT BOARD MEMBERS

As part of the response to the mid-term review, the board is transitioning towards skills-based governance for the Centre. Three new independent board members have been appointed. The Centre is pleased to welcome:



**Meika Foster**, Independent board member, who brings experience in nutrition, food safety, law, future foods, mataūranga Māori and business enterprise.



**Greg McCullough**, Independent board member, who brings knowledge of food safety regulation, industry and business, as well as experience in the dairy industry.



**Catherine Richardson**, Independent board member, who brings extensive food safety, industry and governance experience, and deep knowledge of the horticultural sector.

These roles will formally commence on 1 January 2020. Greg McCullough is currently serving on the board as an industry member; his current role will cease as of 31 December 2019 and his new role will commence in January next year.

The Centre is grateful to current board members Neil Smith and Sonia Whiteman, for their significant contributions and leadership. Their terms conclude at the end of the year.

There will be a further new appointee to the board when the yet-to-be formed Industry Advisory Group (IAG) appoints its representative. A further new member will be appointed at the end of June 2020 when the current chair, Dr Kevin Marshall, comes to the end of his second term and so will not be eligible to be reappointed as chair.

## AFTERNOON:

The afternoon session was all about risk and opportunity.

**Gale Prince**, SAGE Food Safety Consultants, USA, traversed a horrifying list of serious food poisoning, adulteration, contamination, and threats/extortion events over the last five decades. He began with the appalling case of someone who cut a baby's tongue to allege product tampering. Many innocent-sounding products were involved in these events, such as apple juice, spinach and peanut butter. Someone added antifreeze to toothpaste, and *Listeria* in soft cheese caused 52 deaths in one outbreak in the 80s.

Gale presented a graph showing that, over time, increasing percentages of consumers have stopped purchasing products following a recall. He cited the following issues, in order of importance, when it came to producer failure: sanitation, pest control, process controls, and lack of maintenance.



**Alison Turnbull** from SAFE Fish, Australia, emphasised that safe food equals market access. She said you "have to understand drivers of change – climate change is the big one. We need to rethink all of our safety profiles."

When Tasmania was the centre of a marine heatwave in 2015, an algal bloom down the whole east side of the island closed the door on all seafood exports to Japan, resulting in millions of dollars of lost revenue.

Alison listed the top 10 consumer trends, including:

- Back to basics for status
- The conscious consumer
- Everyone's an expert
- I want a plastic-free world
- I want it now
- Loner living



**Dr Cushla McGovern**, University of Auckland, explained the potential of light to rapidly detect pathogens and adulterants in meat

and milk. "It's fast, it's harmless, and you can look at multiple samples at once." Cushla is working together with Professor Cather Simpson. The basic principle involves distinguishing how the nuclei of different molecules move relative to each other when you shine light on them. There are currently very strict meat sampling regimes. Intensity of fluorescence would indicate the numbers of bacteria present, and also relative numbers of live versus dead bacteria.

**Peter Cressey** from ESR discussed biocides and nuisance contaminants, such as traces in milk of the disinfectants used to clean cow teats to prevent mastitis.

He said that biocide residues are very low in New Zealand dairy products, and that quaternary ammonium compounds in raw milk have now disappeared.



**Dr Andrew Kralicek**, Plant & Food Research, ended the session on emerging risks and opportunities with a presentation about his aptasensor for the detection of *Listeria monocytogenes*.

The day ended with a serious, but highly entertaining, panel discussion chaired by Kim Hill, on plastic packaging, coincidentally on the very day – 1 July – that single-use plastic bags became outlawed. You can hear 'The Packaging Dilemma', recently broadcast on RNZ National (20 and 22 October) at [www.rnz.co.nz](http://www.rnz.co.nz)

### THREE-MINUTE THESIS PRESENTATIONS

The after-lunch slot was enlivened by 11 superbly concise, informative and entertaining three-minute thesis presentations. There have to be winners; there were certainly no losers. Associate Professor Miranda Miroso, University of Otago, chaired the session, and announced the winners:

**1<sup>ST</sup>** **Felicity Prendergast, University of Otago** Consumer perceptions of the safety of "upcycled" foods, i.e. food waste that is remanufactured into other products.

**2<sup>ND</sup>** **Nilukshi Liyanagunawardena, Massey University** *Salmonella* in poultry.

**3<sup>RD</sup>** **Manasweeta Angane, Plant & Food Research** Investigations of market access risk mitigation technologies using air blast freezing and frozen storage to eliminate *Escherichia coli* from seafood.

Dr Vivienne Hunt, Centre Industry Manager

# PIANZ WELCOMED UNDER NEW CENTRE MEMBERSHIP SCHEME

The Poultry Industry Association of NZ (PIANZ) was one of the first organisations to join the Centre under the new membership scheme, designed to enable smaller companies and industry associations to enjoy the benefits of access to New Zealand's food safety science and technology network, and government co-funding for research projects targeting problems such as *Campylobacter* and *Listeria monocytogenes*.



PIANZ, however, is no minnow. The Association represents nearly all NZ poultry producers, large and small, that together produce over 125 million chickens per annum for local consumption and export. In 2008, chicken overtook beef and lamb as the number one animal protein consumed in New Zealand. It is affordable and adaptable to different cooking styles.



Michael Brooks  
Executive Director of PIANZ

Executive Director of PIANZ, Michael Brooks, says that membership of the Centre was a 'no-brainer' because, "We want to be leaders in the food safety area, globally, and so we want to take advantage of the Centre's science and research capability and, to be honest, the government money supporting it."

A major research project initiated by PIANZ and the Centre aims to reduce the possibility of that hardy pest *Campylobacter* entering broiler flocks. "The results will be of great interest internationally, as managing *Campylobacter* is a world-wide challenge," says Michael Brooks, Executive Director of PIANZ.

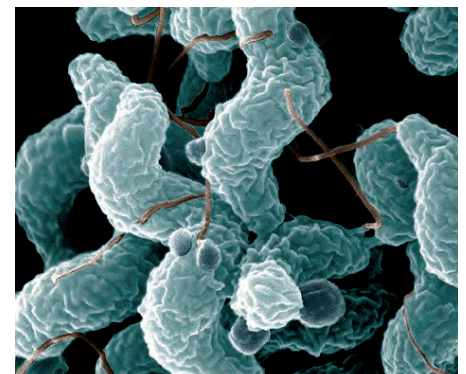
The Centre's Chief Scientist, Distinguished Professor Nigel French, has special expertise in this area and leads the project. His study aims to provide a better understanding of pre-processing sources of *Campylobacter* contamination in the New Zealand broiler industry.

The Centre's fee structure is scaled according to turnover. Bringing in smaller industry groups and companies will broaden the representation of the Centre. Industry manager, Dr Vivienne Hunt, says that over 95 per cent of NZ businesses are small- to medium-sized enterprises, and that while many of them are very innovative, most cannot afford to do the research they would like. She says, "The Centre can play a role by initiating, designing, and participating in research to test and develop new technologies that measure results in real time. One example is the programme to develop a rapid on-site screening tool using aptasensor technology to detect *Listeria monocytogenes*. This research was initially fully funded by the Government. The Centre is now looking for industry partners to support the work and tailor it to their processing environments. "Only very large companies or industry sectors could afford to run a research programme like that on their own," says Vivienne.

*Listeria monocytogenes* is an intolerable risk that can arise from ready-to-eat foods, which include cooked meats, cheese, mussels, raw salmon and even some vegetables. Infected women can lose their unborn babies, and vulnerable people can die from it.

"We're a small country, but according to KPMG our food feeds around 40 million consumers each year. To have good food control systems that reduce food safety risk, we need to club together to ensure we have the latest science and technology, and share best practice within the network. This will help all members guard against risk, and anticipate future developments. There are so many on the horizon, such as whole genome sequencing, new packing technologies, shifts in consumer behaviour with strong demands for biodegradable packaging, guarantees of provenance, authenticity, animal welfare and absence of biocide residues, to name a few. No one company can keep on top of all that. The collaboration between industry, government and science institutes helps make private and public R&D expenditure go further by combining it," says Vivienne.

If you want to learn more about the new Centre membership conditions and fees, the benefits of joining the Centre, or want to invest in the aptasensor programme, please contact Vivienne at [Vivienne.n.hunt@gmail.com](mailto:Vivienne.n.hunt@gmail.com) or call **021 0804 2095**.



*Campylobacter* digital colorization, by Chris Pooley

Professor Phil Bremer and Dr Lucia Rivas

# GETTING A HANDLE ON LISTERIA



*Listeria* infections (listeriosis) are a fearful prospect for food producers. Thankfully they are rare, but can be very serious when they do occur. New Zealand women have lost unborn babies, sometimes at a very late stage in the pregnancy, and in 2012 two people lost their lives in Hawke's Bay hospital after eating infected processed meat from a local supplier. More recently, a yoghurt company was fined half a million dollars for failing to report to MPI the presence of *Listeria* in their factory, over a long period.



Listeriosis is especially dangerous for young and old people, pregnant women and those who are immune-compromised - they call them YOPIs for short in the health sector, as these groups are generally more exposed to infectious diseases. There are between 20 and 40 cases reported each year.

*Listeria* is a potential food safety risk for many companies and food sectors. It is a hardy survivor, and high on the Centre's list of research priorities. The bacteria can live and reproduce at refrigeration temperatures, so chilled, ready-to-eat foods that are consumed without further cooking, as well as raw milk and cheeses, are off the menu for pregnant women and other YOPIs.

NZFSSRC is funding a programme of research focusing on *Listeria*. In Phase 1, Professor Phil Bremer and Associate Professor Miranda Miroso at University of Otago interviewed 19 companies and regulatory bodies to find out what pitfalls or drawbacks there might be, real or perceived, to using whole genome sequencing as a method of monitoring and managing pathogenic bacteria. Interviewees were mostly very supportive and could see multiple benefits for their companies and 'NZ Inc'.

The take-home messages were that, prior to working with a company, the research team will need to understand the company's food control plan or risk management programme and the steps it takes to ensure that its products are *Listeria*-free. The research plan must include an agreed protocol if *Listeria* is found, and MPI must be involved in the development of the response plan.

With these results in mind, the next part of the programme is now underway. Phase 2, led by ESR, in collaboration with Massey University and Plant & Food Research, is building a comprehensive

Access to the data will be very tightly controlled, however, the unidentified aggregated data could be used by an approved user to help companies gain a better understanding of *Listeria* and where isolates found in their factories fit into the larger New Zealand *Listeria* population. Further, a better understanding of NZ *Listeria* isolates may help researchers provide better ways to control this pathogen in their factories.



database containing whole genome sequencing information on *Listeria* isolates collected from various sources in New Zealand. This will reveal, in detail, which *Listeria* strains are common in New Zealand and how they move around.

*Listeria* is widespread in the environment and can inhabit any part of a factory or supply chain, sometimes forming a persistent 'biofilm' on equipment, benches and drains, which can make them difficult to eliminate. Whole genome sequencing is a new tool that is now routinely used

to finely differentiate bacteria. It can help locate contamination sources and places within the food processing chain. For example, if the genome of one *Listeria* isolate from a food product matches another obtained from the factory slicer, and only the slicer, then that piece of equipment can be disassembled for thorough disinfection, rather than pulling the whole factory and supply chain apart, or casting suspicion on imported ingredients. Some *Listeria* can also become resistant to certain chemicals. The mutations that confer certain tolerances or resistance to disinfectants and cleaning solutions can be identified using whole genome sequencing, and cleaning regimes changed accordingly.

Dr Lucia Rivas, who is working on the programme at ESR, says, "Whole genome sequencing currently takes about 10 days to complete once an isolate is provided to the laboratory, so it's not an overnight service, but it is very useful if a food producer is facing a chronic problem with *Listeria* in their factory."

Another Centre initiative is the development of a *Listeria* aptasensor that can warn food producers by rapidly detecting *Listeria* on environmental swabs taken from the factory. If successful, the use of this aptasensor tool will accelerate the time taken to obtain a result and help a food producer act quickly when a contamination issue arises.

Lucia says, "Exact source identification is the way to implement intelligent risk-management systems. Isolating *Listeria* from across the food production environment is key. Whole genome sequencing is exactly like forensic fingerprinting. We'll soon be able to track down suspects very quickly. The system is designed to help all our very responsible food producers, not to catch them out," Lucia emphasises.

# WHOLE GENOME SEQUENCING – THE 21ST CENTURY IS NOW!

On 31 October, the Centre and ILSI SEAR Australasia co-hosted a conference at Massey University on Whole Genome Sequencing (WGS) – as it can be applied to public health and food safety practice. The 55 participants wanted to learn more about the benefits and challenges of using this powerful technology, which can be used to identify the source of pathogens, such as *Listeria* and *Salmonella spp*, in environments ranging from farm to factory. Just under half of those attending were industry stakeholders.

**Hosted by the NZ Food Safety Science and Research Centre, CSIRO and ILSI (International Life Sciences Institute) SEAR Australasia, 31 October, Massey University, Wellington.**

Centre Chief Scientist, Professor Nigel French, who gave the keynote presentation, said that WGS can provide information at multiple scales; from tracking the global circulation of pathogens, to identifying the source of contamination within food processing facilities. He demonstrated some real-world examples showing how this technology can be used for source attribution and tracking of food-borne pathogens.

Professor Steve Musser of the US Food & Drug Administration (FDA) joined the conference by video link and spoke about the role of the FDA and environmental surveys using WGS to track *Listeria spp* in the environment, noting that water-borne *Listeria* proved to be the highest risk in one study. He said that the US has now sequenced 409,000 different organisms as part of their GenomeTrakr network.

Other speakers included Dr Jeremy Hill, Chief Scientific Officer at Fonterra, who spoke about the application of WGS to help identify the risk of contamination. Dr Brent Gilpin and Dr Sarah Jefferies from Institute of Environmental Science & Research (ESR), which provides WGS for the Ministry of Health, gave an update on the Redcap software they use to ensure data security. Professor Deborah Williamson from the University of Melbourne discussed how WGS could be used to understand more about antimicrobial resistance, and Associate Professor Amy Jennison, Queensland Department of Health, shared insights on the way WGS has been used in Australia to track infections and mitigate risk. Graham Fletcher, from Plant & Food Research and

Roy Biggs gave some illustrations of industry use of WGS in New Zealand, while Professor Phil Bremer from the University of Otago presented insights from the Centre's research with potential end-users of the technology.

There were lively panel discussions in the afternoon about data sharing and security, and regulatory and IP issues, with: Kate McHaffie, lawyer from A.J. Park; Glen Neal, GM, Food Standards Australia New Zealand (FSANZ); Dr Anne Marie Perchec Merien, Ministry for Primary Industries; and Dr Tom Kiedrzyński, Ministry of Health. The two panel discussions facilitated by Professor Phil Bremer concluded that WGS is a critically important tool that can be used by industry to identify the source of pathogens in processing plants, help understand whether organisms are becoming antimicrobial-resistant, and track the source of public health outbreaks with speed and efficiency. The challenges were noted, too. These include the need to protect confidential data if shared with publicly available

databases, and IP that could arise through collection of specific insights about a company – and for clear risk-mitigation protocols for food control should the research identify a pathogen. Panelists also recognized the need for more bioinformatic capacity in New Zealand to understand and interpret the data.

While the cost of WGS is reducing, limited budgets could be a potential barrier to small-to-medium-sized enterprises using this technology, so it is worth remembering that industry can access co-funding, through the Centre, for aligned research applications. Please contact Vivienne Hunt on **021 0804 2095** or email [vivienne.n.hunt@gmail.com](mailto:vivienne.n.hunt@gmail.com) if you would like more information about this.

Dean Stockwell, Vice President of ILSI Australasia, closed the meeting, thanking the speakers and the organizing committee including Chris Dowdall, Dr Vivienne Hunt and sponsors, ESR, Asure Quality and Illumina.





Photo by Lulucmy

# CAFÉ SCIENTIFIQUE - TAURANGA

Café Scientifique in Tauranga, organised by business consultant Julia Banks, has long since outgrown any café. Members of the group now meet in the spacious Yacht and Power Boat Club. Attendance averages 150, even in midwinter, so it's well worthwhile scientists taking the time out to travel there to present their work, and gratifying to have such an interested audience.



Following the talk by the Centre's US visitor Dr Robert Tauxe, in 2018, Nigel French promised to return to give a local, NZ perspective on food safety.

The Tauranga audience were clearly surprised by our still high incidence of *Campylobacter* infections, and intrigued that even vegetables like lettuce can cause other significant food poisoning outbreaks. Lettuce and carrots were suspected as the initial source of a serious outbreak of *Yersinia* in 2014, with a cluster of cases in central Christchurch.

Nigel pointed out that the key public health intervention that has slashed food- and water-borne disease and death rates in the last 150 years is keeping human and animal faeces separate from our food and water supplies! This is not always easy in a country with 40 million sheep and cattle. *E.coli* and *leptospirosis* are two common human infections associated with cattle dung and urine, respectively, which particularly affect people in rural locations.

Apart from the major water-borne contamination event in Havelock North, chicken is still the main concern when it comes to *Campylobacter* poisoning. Nigel told them about the science investigation he led that identified the source of our soaring *Campylobacter* rate in the early 2000s, and the subsequent handling recommendations that resulted in a 50% reduction, and savings of \$50M per year in associated costs (time off work, hospitalisation costs etc.).

Not many in the audience seemed to know about the outbreak of *Salmonella* DT160 fifteen years ago that killed thousands of sparrows and then quickly spread through the human population. In 2003 it travelled from Auckland to Sydney in passengers on a cruise ship.

Nigel issued his usual warning about raw milk, advising people to scald it before drinking as our grandparents on the farm used to. Chicken liver pate is also high risk, he said, as *Campylobacter* can concentrate in the liver, and people often do

not cook them sufficiently, preferring the juicier, light pink state. Nigel also reminded people that minced meat can mix the bacteria on the surface right through the meat, so it's important to cook burgers well to avoid *E.coli* poisoning. Undercooked burgers have caused major outbreaks of infection in the US, and the deaths of children.

**At the end of the talk, Nigel flagged some of the emerging trends and technologies:**

- Food adulteration and bioterrorism
- Product tracing and provenance
- Global tracing of pathogens
- Raw food
- Functional foods

The Centre is vigilant on all fronts, in order to protect New Zealand's reputation, he said.

If you want to contact Julia Banks to offer a possible talk for this science-savvy group, email her at [Julia.banks@saffronconsulting.co.nz](mailto:Julia.banks@saffronconsulting.co.nz)



# CENTRE MANAGER AWARDED CHURCHILL FELLOWSHIP TO STUDY US/UK FOOD SAFETY BEST PRACTICE

Wendy Newport-Smith, who manages both NZFSSRC and the New Zealand China Food Protection Network (NZCFPN), has been awarded a highly sought after Churchill Fellowship to compare our food safety network with more established and extensive UK and Northern American networks.

“The Winston Churchill Memorial Trust was created by legislation in 1965 as a living memorial, with funds from both the New Zealand government and the public. Since then, the income from investments has been used each year to fund fellowships that provide ordinary New Zealanders with extraordinary travel opportunities. Fellowships assist people to travel overseas to learn from others and study topics that will be of personal benefit, help them advance their occupation, trade, industry, profession or community and New Zealand in general.”



The Trust expects recipients to contribute matching funding. Wendy will pay 40% of the travel costs out of her own pocket.

Wendy, who has an MBA and Master of Management, is also embarking next year on a PhD study programme through Massey University, on food safety governance. The knowledge gained from her Churchill study will directly benefit and kick-start her research.

She says, “Our Centre is virtual, and different from other types of research institutions in New Zealand. I am really interested in learning about ways to bring industry, government and science organisations together – for mutual benefit – to achieve the larger goals of public health, economic benefit, and guarding our all-important national reputation for safe food.”

Wendy intends to travel to the UK and US in the Centre’s less busy period over Christmas and January. She will cram in as many visits as she can to relevant organisations including,

- Institute for Food Safety & Health, Chicago
- University of British Columbia – Birnet, Bidesign, BioAlliance
- UK Food Standards Agency
- Agriculture and Horticulture Development Board (ADHB), UK
- Centre for Innovation Excellence in Livestock (CIEL), UK
- Food Valley, Wageningen
- DISARM Project
- One Health Joint European Programme

**GOT SOMETHING THAT YOU’RE PASSIONATE ABOUT?**

[WWW.WCMT.CO.NZ](http://www.wcmt.co.nz)



## A VIRTUAL CENTRE

The NZFSSRC pools the existing resources of partner organisations from across New Zealand. Current NZFSSRC partners are:

## CONTRIBUTING PARTNERS:



**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
HĪKINA WHAKATUTUKI

Ministry for Primary Industries  
Manatū Ahu Matua



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