

# exposure

April 2019

The combined magazine for the nuclear community



## Daids Story

A personal story of one veterans experience

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## AVF Phase 1 Final Report

An in depth report on the results of the NCCF phase 1 Portfolio

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## Assessment of Risks from Combined Exposure to Radiation and Chemicals

Research into the effects of Radiation and Chemicals

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## Follow-Up Commission

The consequences of nuclear testing

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# Foreword

Welcome to the fourth edition of Exposure Magazine. We are overwhelmed by the messages of support and appreciation we received in response to the previous editions.

This edition has a slight change of format in that the NCCF has just produced the end of Portfolio report for the Phase I projects they ran using the monies provided by the Aged Veterans Fund (now the Armed Forces Covenant Fund Trust). This report gives an in-depth insight not just to the delivery of the projects but also to the history behind the projects.

Clearly, without the success of the Recognition Campaign delivered by the old BNTVA, these projects would not have been created or monies made available. Our cover photograph harks back to the beginning of this campaign capturing the moment when Nigel Heaps and Jeff Liddiatt, armed with a unanimous Conference mandate, first enter Portcullis House in Westminster to begin negotiations.

We have come a very long way since those early days, the campaign success, creation of the CHRC and the success of the bids for Phase II funding has firmly established the NCCF as the primary organisation promoting research and providing support to the members of the British Nuclear Community.

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**Exposure**

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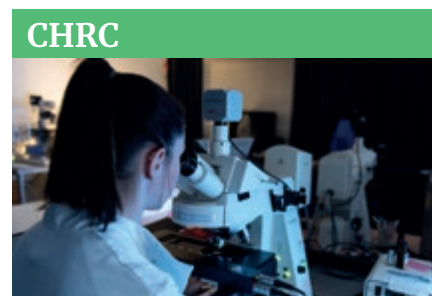


**The NCCF**

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# Dauids Story

I met Amelia at Latimer Camp Chesham. It was an officer camp where Amelia worked as a silver waitress with the WRAC, we fell in love.

Shortly after meeting I was posted to Rheindahlen (Munchen Gladbach) Germany where I was in the 68 Company Royal Army Service Corp (RASC) Driver Training and then moved on to a posting at NORTHAG not far from Rheindahlen.

After a month or so I was summoned to see the Officer in Command, Major Carter. I had no idea why he needed to see me as I was led to his office by Sgt Major Marchard. Once in his office there sat Major Carter. He looked at me for a moment and then spoke "I have a letter for you from London, it's from a young lady who is working in Kensington, her name is Amelia Jaques and she is pregnant". I hadn't written to Amelia as I thought the relationship was over. I was given 2 weeks leave to go and see her.

I travelled to London and met Amelia where we decided to get married. The arrangements were made and we married at Amersham. We then travelled on to visit my mother who lived in Scotland. It was decided that Amelia would stay with my mother till she had had our baby and I would go back to Germany and look into having Amelia move to be with me. While in Scotland she gave birth to our daughter Marie.

When back in Germany I applied for married quarters and was lucky to get a brand new 2 bedroom flat. We were happy living there and life was going well.

That was until some time later it was apparent that Marie wasn't very well. We took her to the doctors explaining that she cries every time she is pressed on the tummy. The doctor examined her and gave her something for the pain. After a while it was evident that she was still in pain and crying a lot because of this. We took her back 3 or 4 more times but the doctor just kept telling us that there was nothing wrong with her. Strangely he was insisting there was a problem with Amelia and so he prescribed her valium, which I later found out was deadly in the beginning.

During this time I was having to have time off to look after Amelia and Marie when she gave birth to our Son David Jr. She returned home from hospital and all went well until that night when I woke up to find myself and Amelia lying in a pool of blood. I immediately called the emergency services who took Amelia straight to hospital, I stayed at home with Marie and baby David Jr. Amelia had an emergency operation to find out the cause of the bleeding. She asked an RAF doctor did they leave a bit of the afterbirth, his reply was "my dear, they left it all". Thankfully she came home 2 days later.

I was still having to take time off to care for the three of them. Amelia was having hallucinations of her mother and her dead sister. This carried on and on while she was still being prescribed valium.

I had signed up for 22 years of service, so it was a bit of a surprise when Major Carter had me in office and informed me that I would be discharged as I couldn't perform my duties.

A week later while we were leaving married quarters, Marie closed the living room door and a large piece of plaster fell off the wall to the floor. Because of this we had to stay in the sergeants mess until our flight the following morning. I had to pay mess fees and the bill for the plaster repair. This left me with £1 7/6p, all the money I had in the world.

They took us to Düsseldorf airport and then we had a flight to London, I can't remember which airport we arrived at. I found a taxi rank and was about to ask him "how much to Euston" when I realised he was a sergeant that I met when I was travelling to Christmas Island, he had left the army and wouldn't take any money off me. We travelled from Euston to Scunthorpe and got a taxi from the station to my mothers house costing 7/6p, we were pretty much penniless.

We lived at my mothers until we managed to get a council house. Amelia through all of the travelling and moving was still taking valium along with a whole host of other tablets. The tablets made Amelia very sleepy. I was having to give up job after job to look after Amelia and the children. Possibly foolishly we went on to have 2 more children before Amelia had to have a hysterectomy.

## St John's Hospital, Bracebridge Heath

The hospital was designed by John Hamilton and James Medland in the Italianate style, as the Lincolnshire County Lunatic Asylum and opened in 1852. It became Bracebridge Pauper Lunatic Asylum in 1898 and Bracebridge Mental Hospital in 1919. It served as an Emergency Hospital during the Second World War and, having been renamed Bracebridge Heath Hospital in 1939, joined the National Health Service in 1948. It went on to become St John's Hospital, Bracebridge Heath in 1961. The hospital closed in December 1989 and the site was sold to a property developer who converted it to luxury homes and apartments. The original hospital buildings are classified as Grade II listed buildings.



Amelia was seeing a Doctor Allerdyce who asked her to go to a Hospital at Bracebridge Heath in Lincolnshire. This was an old assylum that was then a mental hospital. Over the next 30 years, Amelia was a frequent visitor to the hospital. I found out years later that during one of her stays she ran away with another female patient and got to London before they were found.

Amelia was given electric treatment which didn't help her at all and actually made her worse. I visited her often and would thumb a lift to the hospital as money was short. One day whilst visiting her with my mother, we walked along the corridor to her room, we passed a padded cell and the door was open. In the cell was Amelia, she was drugged, asleep and totally naked. It was a shocking sight to see and was greatly upsetting to both my mother and myself, I played hell with the staff about the incident.

On another visit to see Amelia, I walked to her ward and around 20 patients were all sat in chairs watching a member of staff walk up a down a row of padded rooms and hit any of the patients who happened to get in her way. Something happened or made them agitated and they all started to throw cups and plates. I asked Amelia what it was all about and she just said it was nothing, it happens every day.

They would let me take Amelia home every now and again, and while it was lovely to have her home she would cry every time I had to take her back. It was heartbreaking but I knew if I didn't take her back they would come for her themselves.

This went on and on for years until they began to let her out for longer periods of time. And then one day Amelia just turned to me and said "I'm not taking any more pills".

There were still ups and downs, our children Marie and David Jr on returning home managed to save her life when they found her trying to commit suicide. Amelia stuck to her promise of giving up the pills and she did start to get better and after 25 or so years life was getting back to normal.

Unfortunately Amelia began to feel pain in her chest so we went to the hospital to get her checked. She had an X-ray which showed a shadow, but a doctor told us it was OK. I had already arranged to take Amelia to Canada to meet her Fathers family. Her father was a Canadian soldier over in England for the D-Day landings. We still took the journey to Montreal but as we got off the plane Amelia collapsed at the bottom of the stairs. She was rushed to St Guys Hospital in Montreal but after 14 days of agony she died of cancer.

Before Amelia met me she had had a terrible life and from the age of 3 to 15 lived in an orphanage where she was abused by nuns. She had a bad fall while there and was given the last rites but she did recover.

The story of my time with Amelia was documented in local newspapers and in Woman's Own Magazine.

When Marie was 14 she had an operation for a growth in her tummy. A friend who was an Operation Sister was told by the doctor that the growth was probably in her tummy from birth. My youngest son has a growth on his Pituitary Gland and has for years and to this day taken tablets for it. Belinda my other daughter has crumbling bones.

When I had an operation for for a kidney stone I was told that it would be a small incision to remove the stone. When I woke up after the operation I was stitched from the middle of my belly all the way around to my back. A sister in the opp room told me they had never seen an operation like it for

just a stone, all my insides were taken out and laid on the opp table. The stone itself was about the size of a 5p and multicoloured. It disappeared from my bedside cabinet that night. I later found out that the doctor who operated on me was struck off for incompetence.

I was posted to Christmas Island in February 1959 via, Aden, Karachi, Delhi, Sri Lanka, Singapore and Australia. On the Island we did ship to shore via DUKW's (amphibious craft). Occasionally we were ordered to go to a camp near the airport, load a box and take it out as far as possible and dump it overboard.

Seven of us went down Island for a weeks holiday to a lagoon. All the trees there were blackened and burnt with branches lying around on the ground. We enjoyed swimming everyday.

One day we heard this buzzing noise, there among the trees was a scientist head to toe in green clothing with a glass type helmet with gloves and boots. He stared at us for a moment and then went on his way, Geiger counter buzzing. We never thought much about it at the time but it must have been a blast area of the island.

I forget a lot, I'm on Thyroxine tablets as my thyroid doesn't work properly. I've heard that this is often caused by radiation, I got plenty of that on the island.

**David McIntyre**

# Maralinga Memories

Terence Bambridge wrote to exposure magazine to ask if anyone can remember Corporal O'Brien who served with him at Maralinga.

Dear Sir/ Madam,

I am writing in regards to my own personal experience of my time at Maralinga. I was stationed with the balloon unit as a mechanic, with the role of looking after all of the vehicles and machinery being used by our unit. This included the winch which raised the nuclear device to 800ft below a barrage balloon. We had previously rehearsed this procedure at Aldermaston in England.

My task was to make sure the winch was able to raise the nuclear device and that the balloon that suspended it was then anchored to a concrete block that had been installed in the ground. The winch was then driven away and our electrician Corporal O'Brien had to then connect the device to a cable that fed back to the headquarters where they would press a button to detonate the device. Corporal O'Brien and myself then had to drive away in a truck as fast as possible along a track that had speakers every quarter mile which the countdown played out over. When only a few minutes were left to go we were instructed to jump out of the truck and bury ourselves in the sand. Without a doubt we were the nearest that people had ever been to a pre-arranged atomic explosion.

The following day we were issued protective clothing but were instructed not to expose ourselves and if we wanted to go to the toilet we had to do it in our trousers. We then had to return to the site of the detonation in order to record the damage that had been caused to the surrounding equipment that had been set up around the site, when in fact we had been used as



© Frank Walker, author of the book 'Maralinga'.

Guinea pigs. When we arrived back in camp we were ordered into a decontamination unit where we were showered continually for hours until our radiation exposure levels were reduced. This process took at least 24 hours.

Prior to detonation of the device we were responsible for caring for the device which was placed out in the bush and attached to a generator which was kept running 24 hours a day. Naturally this was in a very remote region and at night we used to sit round a log fire about 60ft from the generator. We were always surrounded by a ring of dingoes and the only way to check the generator was to pick up a burning stick and charge at the dingoes to scare them away.

The whole balloon unit was stationed miles from the main camp and lived under canvas with all the scorpions, funnel web spiders and dingoes who used to walk around our tents at night,

often one side of the dingoes totally exposed to their rib cage, having had all the flesh burnt off of them by a previous detonation.

I would be extremely grateful if you would ask your readers if anyone had any knowledge of Corporal O'Brien's whereabouts and I would like to contact any members of the balloon unit who were out there on the Antler mission.

Regards, **Terence Bambridge**

If anyone has any information on Corporal O'Brien please write or email us at [editor@exposure.press](mailto:editor@exposure.press) and we will pass your details to Terence.



# Joining Forces Befriending Scheme

Age UK is a national charity that works to help everyone make the most of later life, whatever their circumstances. The Charity and local Age UK's across the country have a long history of providing services which help address loneliness, for example through offering a range of different local activities for older people to enjoy, including lunch clubs, cooking classes, dance lessons and crucial advice when there's no one else to turn to.



As part of this, Age UK has teamed up with SSAFA, the Armed Forces charity to provide a dedicated support service called Joining Forces.

Joining Forces is a scheme to support the quality of life and wellbeing of veterans born before 1950. Delivered in partnership with SSAFA, the Armed Forces charity and funded by the Armed Forces Covenant Fund Trust, this initiative provides tailored advice and support to help older veterans, as well as their families and carers, maintain their independence, stay connected and feel included within their local community\*.

As well as accessing advice via a dedicated online hub ([www.ageuk.org.uk/joiningforces](http://www.ageuk.org.uk/joiningforces)), veterans are also able to access face-to-face support, available at twelve locations across the country. Older veterans who are feeling lonely and isolated can sign up to befriending schemes to be matched with another veteran, or a befriender through Age UK's Call in Time telephone befriending service.

One of the veterans who has benefited from the Joining Forces scheme is Michael, 78, who lives in West Cumbria. Michael worked in the Navy for 20 years, eight of which were spent working on submarines. However, more recently he had been suffering from health and mobility problems, which made it difficult for him to do things round the house and get out and about.

Michael's second wife struggled to cope with his health problems and after the relationship broke down he moved into a new flat. He found it hard to manage as it was upstairs, resulting in a couple of falls. "I couldn't climb in and out of the bath and the place was so cold," Michael recalls. He became more self-conscious and found himself feeling low.

"I couldn't go to sleep because I feared not waking up and there being no one to discover me for weeks. The loneliness was hitting me terrifically."

Michael had problems walking long distances and was unable to cut his toenails. He knew that his local Age UK, based in West Cumbria, ran a toenail cutting service, so he found the courage to go along.

After speaking with Michael, Age UK West Cumbria put him in touch with the Joining Forces team. Michael now goes to twice weekly lunch clubs and day trips to local museums and places of interest, which take place once a month. He has attended Christmas parties for local veterans and has also been able to move into a ground floor flat in a residential complex for older people.



One of my problems was that I hadn't been sociable because of my time spent working in the Navy and the effect this had on my life.

**Michael**  
Veteran



A veteran using the befriending service

Veterans can also benefit from Call in Time, a free telephone befriending service offering a weekly phone call from volunteers. Not having someone to talk to regularly can be lonely and isolating, particularly if you're used to sharing your home and time with others. The friendship and wellbeing programme provides older people with a friendly voice and a safe and comfortable environment to chat. The service's trained volunteers make weekly phone calls which last for around half an hour, providing a chance to chat about anything from and hobbies to day-to-day issues.

To find out more about what support Age UK offers and to find your local Age UK visit [www.ageuk.org.uk](http://www.ageuk.org.uk) or contact the Charity's Advice Line **0800 169 6565**. Calls are free and lines are open 365 days a year.

“

They have done so much for me, I have lots to look forward to and feel a lot better, a lot happier.

**Michael**  
Veteran



\*Joining Forces is supported by the Aged Veterans Fund funded by the Chancellor using LIBOR funds. Joining Forces is delivered in 12 locations across England, which will involve a partnership between the local Age UK and local SSAFA branch, offering person-centred conversations to older veterans and their family or carer. These local projects will take place in the following areas: Cheshire East, North Yorkshire and Darlington, Gloucestershire, Lancashire, Leicestershire & Rutland, Nottingham & Nottinghamshire, Portsmouth, Tyne & Wear, West Cumbria, Wirral, Wolverhampton and Herefordshire and Worcestershire.

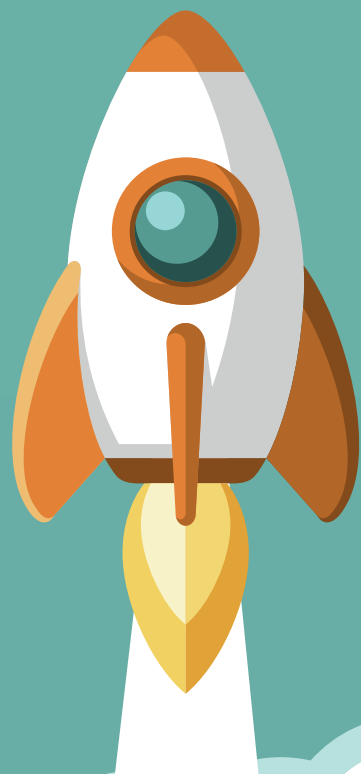
# Big Move for NCCF Web Services

At the end of February, some of you may have noticed the NCCF web services running slower than usual or even becoming unobtainable for a while. This was all in a good cause as BH Associates were busy migrating our web services to a new host provider.

All the NCCF and Exposure Magazine web services are now hosted with with a new provider who offer some of the fastest most reliable and secure hosting available in the UK. The new provider is also committed to protecting our environment for future generations. They are a proud partner of **Carbonfund.org**, a leading organisation in the battle against global climate change.

Since 2007, they have supported their reforestation efforts and continued development of clean, renewable sources of energy. They have also implemented a number of their our own green policies like employee telecommuting practices and the re-use of older hardware.

If you were inconvenienced by the occasional outage of our service we do apologise but hope you enjoy the huge improvements in speed and accessibility the move has provided.

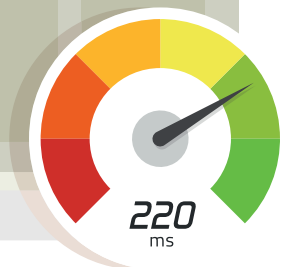


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# The Nuclear Community Charity Fund

## AVF Phase 1 Final Report

An in depth report on the results of NCCF Phase 1 Portfolio

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The Nuclear Community  
Charity Fund



Making that difference

# Aged Veterans Fund Phase I Projects Final Report

We have great pleasure in bringing you the final report of the NCCF Phase I Portfolio. A record of the great work undertaken by a dedicated group of Trustees first working in the old BNTVA and then in the NCCF. Working between BH Associates and the board members we have put a great deal of effort into managing the portfolio to ensure the projects all deliver to their best potential.

It has not all been plain sailing and a significant number of obstacles have had to be overcome. BH Associates have given their skills and abilities to help the board navigate the troubled waters and we are really pleased that we have emerged with some great results.

The approach used by everyone associated with the portfolio has been to take any obstacle or issue and turn it to an advantage, as you will read when one project began to fail the prompt action of all involved ensured the funds were not only protected but diverted to a project that was not only able to address the issues of the failed project but was also able to widen the scope of the support and deliver a more impacting service to the community.

There have been no free lunches delivering this portfolio and all concerned have worked above and beyond expectations.

As Phase II is now becoming fully active it has been a worthwhile exercise reviewing how we got here and the lessons learned. This drives our ethos of continual development and we look forward to delivering even greater things with Phase II.

## Background - The Initial Ideas

The British Nuclear Test Veterans Association abandoned its confrontational campaigning stance in 2009 when it became a charitable organisation no 1131134. The previous 30 years of confrontation had done significant damage to the

organisation's reputation within the British establishment and, aside from a small number of war pension victories, had achieved little for the benefit of the nuclear veterans or their families. The long journey of changing this perception and gaining acceptance as the reasonable voice of the nuclear community was undertaken.

Working with the membership the new Trustees consulted and listened to their beneficiaries. Information from the previous years "British Nuclear Test Veterans Health Needs Audit" by Miles and Green was used to consider how they could move forward as a community and the driving concept of 'going forward together' gave the organisation a direction and goal.

In 2012 The BNTVA unanimously supported the launch of the 'Recognition Campaign' at its annual conference. One of the key aims of the campaign was to secure a fund of monies from which the needs of the entire nuclear community could be addressed.

Describing this, the then Chairman, Nigel Heaps, detailed how such a fund could operate; rather than giving each living Veteran compensation of £6-8000 whether they needed it or not, it would be much better to bring that fund together and create some really meaningful activities that would reduce suffering, increase wellbeing, increase knowledge and develop understanding across the whole community, providing care and support for many years to come.



Former Chairman Nigel Heaps MBE address's the BNTVA AGM at the Heathlands Hotel Bournemouth 2012

© BH Associates

This also had the advantage that it could not be viewed as a compensation payment and although a few veterans wanted compensation, there was a clear majority who believed compensation was 'get off the hook blood money' and would be a door closer to any future assistance for our community.

The uniqueness of the nuclear community, with genetic damage potentially being passed down through the generations, also creates a situation where compensation is not the most effective answer to our problems. We do not know how long our offspring will suffer the ravages of the nuclear tests, echoes of genetic damage certainly seem evident in great-grandchildren and it is to the future generations, their health and support, that many veterans look.



John Baron, Jeff Liddiatt and Nigel Heaps MBE, meeting with MPs at Portcullis House March 2013 as part of the recognition campaign



Nigel Heaps MBE and Jeff Liddiatt at Portcullis House March 2013

These were the driving ideas that the BNTVA membership unanimously adopted and made real in 2015 when, following the successful delivery of the Recognition Campaign, our 'Expression of Interest' for the Phase One of the Aged Veterans Fund Grants were submitted.

### First Steps

At the BNTVA 2015 Conference in Bournemouth, the Trustees knew that the offer of financial support for the community was 'in the air' and it could only be a matter of time before formal proposals were being made. Nigel reminded the Conference that at the previous year's conference in Manchester, he had announced his intention to stand down once the fund had been secured. He agreed to remain in post as there were still final negotiations taking place.

Later that year the Aged Veterans Fund was launched and the BNTVA Expression of Interest submitted. Nigel wrote the EOI which was immediately hailed as a 'model submission' by the AVF and became the 'yardstick' for future applications. With this work complete Nigel resigned from the BNTVA Board and Jeff Liddiatt took over the chairmanship.

### Managing the Portfolio

Once the BNTVA Expression of Interest was accepted by the AVF the hard work of formalising the bid and delivery plan was undertaken. The BNTVA constituted a Sub-Committee to manage all matters relating to the AVF funding and projects, The Nuclear Community Charity Fund was created.

The AVF advised the NCCF that specialist help would need to be retained to manage the portfolio of projects on a daily basis, neither the BNTVA nor the NCCF employed full time staff.

In 2015 the average salary was £27,600 rising to £54,000 in London, on top of this the Charity would have had to meet and administer all the costs of employment, so even with a reasonable wage deal the charity would have had to find the best part of £50,000 per year for one full-time member of staff. Clearly, £150,000 was much too high a cost to administer the three-year project. The NCCF decided to hold a costing comparison and approached a number of service providers to explore the costs of a bespoke support system for the portfolio.



The then Chancellor George Osborne announced the creation of the Aged Veterans Fund in 2015

When Nigel informed the board he intended to resign he agreed to continue providing a range of support services to the Charity through his already established business, as a result of this, the Trustees decided to invite BH Associates to submit a proposal for the management of the AVF Portfolio to the Costing Comparison. Once the Comparison was convened it was clear that BH Associates not only provided the best value for money but also that their experience and commitment to the nuclear community would drastically increase the synergy of the entire portfolio. Following a full review by the AVF, BH Associates were duly contracted to the fund at a cost of just over £21,000 per year.

### BH Associates

Going back to early 2014 Nigel Heaps and Stephen Bexon had decided to take the hard-learned skills they had gathered running the BNTVA and its Recognition Campaign and offer them to other small charities and business startups. BH Associates was formed initially as a partnership in April 2014 and in January 2015 it became a Limited Liability Partnership, in October 2015 BH Associates were contracted to provide Portfolio and Project management services to the NCCF, as the business client base and operations grew the LLP evolved into a limited company in May 2017.



Dr Rhona Anderson leads the research at the CHRC at Brunel University



Dr Becky Alexis-Martin, University of Southampton Nuclear Families



The new extended memorial stone at the NMA

All Photographs © BH Associates

### Developing the Projects

The various projects that had been mandated by the BNTVA membership were evaluated against the funding on offer for Phase One of the AVF provision. The NCCF had to select the ones that would ensure the £1m budget garnered the best value for money whilst providing the biggest impact for the community.

Genetic research was a cornerstone desire amongst the community, any research that may shed light on the potential for genetic damage to be transmitted down the germline would address the long-held fears of veterans and their families.

Dr Rhona Anderson at Brunel University London was keen to take research forward. Dr Anderson was already well versed in the issues of our nuclear community having peer-reviewed the work of Professor Al Rowland on the New Zealand veterans. The project was constrained by the available finances but the research design would ensure that a meaningful result could be achieved.

Mental health within the nuclear community was also an area of keen interest and Combat Stress proposed a research and treatment program to address mental health issues within the veteran population of the nuclear community.

With the main scientific issues addressed it was decided that social research was required to help identify and quantify the nuclear community to provide the human story from an academic perspective. Southampton University was contracted with Dr Becky Alexis-Martin as the principal researcher to deliver the 'Nuclear Families' project.

Remembrance, which is also a key activity within the nuclear community, was incorporated in the form of a project to complete the development of the National Memorial to British Nuclear Test Veterans at the National Memorial Arboretum in Alrewas.

The final project was the creation of a Care and Wellbeing fund to reduce suffering and increase wellbeing. The initial budget for the fund was £110,000

with £85,000 ringfenced specifically for grants and the remaining £15,000 for the administration of the project. A Grant Panel was established and various support projects initiated.

The portfolio management and all the constituent projects were subject to strict contractual agreements which were thoroughly vetted along with the finalised bid documentation by the Aged Veterans Fund before any awards were made.

### The Fund Goes Live

On the 21st May 2016 the launch of the Phase I portfolio projects were presented to members of the British Nuclear Community at the BNTVA 1131134 AGM. Welcomed by all, plans were also approved for the future projects for Phase II submission.



Jeff Liddiatt address's the BNTVA conference with the launch of the Phase I portfolio projects

# Phase I Project 01

A Cytogenetic Assessment of British Nuclear Test Veterans and their Offspring

**Project Organisation:** Brunel University and the London School of Hygiene and Tropical Medicine

**Project Cost:** £450,070

## Project Activity

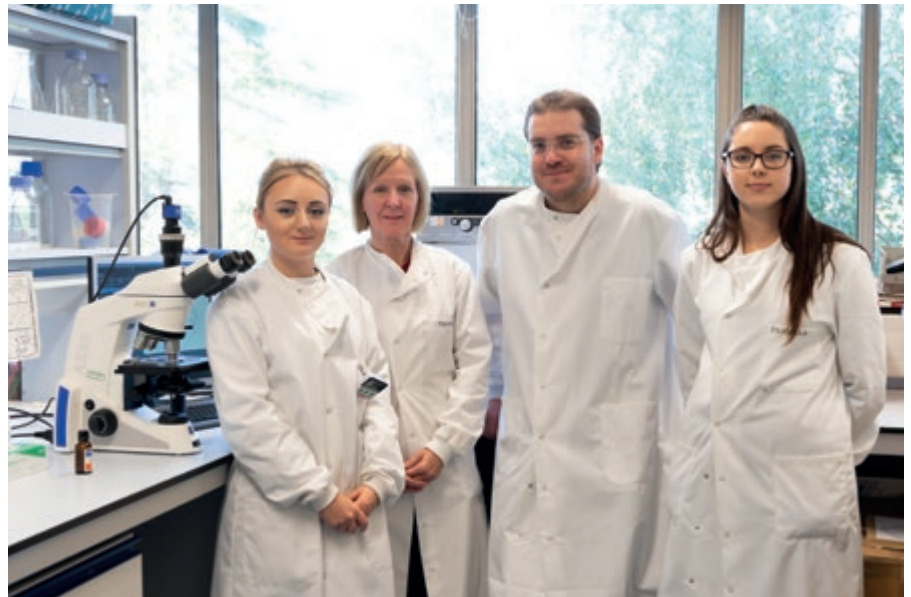
The project will identify cytogenetic alterations in cells sampled from British Nuclear Test Veterans which may provide evidence of previous and/or ongoing exposure to high-LET radiation and, to ascertain whether any acquired changes to the germline genome have been inherited by offspring. An identified cohort of 50 father-mother-child trio's and matched control group will be identified and recruited to provide samples of blood and sperm (father), or blood only (mother and child). Samples will be assayed by a number of FISH-based techniques ascertaining (i) if there is any evidence of complex chromosome aberrations in BNTV fathers' blood, (ii) if there is any evidence of elevated frequencies of chromosomal aberrations in the germline (sperm) of BNTV fathers, (iii) whether there is any cytogenetic evidence for genomic aberrations in the blood of BNTV offspring and (iv) to ascertain which parent any observed genetic abnormality was inherited or, whether it arose de novo.

## Beneficiaries

Outcomes from this project will directly benefit participating families by providing them with the first comprehensive cytogenetic exploration to examine for possible differences between BNTV and control family groups. Importantly, this project will address the need that many respondents in the NTV Health Needs Analysis 2011 expressed; 'access to cytogenetic testing'.



**Brunel**  
University  
London



Part of the team at the CHRC Brunel University London

© BH Associates

Knowledge gained from this project will make significant in-roads into clarifying on-going uncertainties about the possible impact on the future health of BNTV offspring and, will also inform the development of a larger-scale proposal. Accordingly outputs from this work will benefit the broader BNTV community and health professionals by providing a scientific rationale that will improve understanding and contribute to reducing the reported 'anxiety and depression' associated with the aforementioned uncertainties of BNTV members.

## Progression & Future Activity

This project is seeking to address an ongoing concern within the nuclear test community whether veterans of nuclear testing programmes could have received sufficient radiation exposure to cause genetic damage (changes to the DNA). Veterans are concerned that this possible genetic damage may have increased their risk of developing various diseases. This concern extends to whether they might also have passed on genetic alterations to their children, thereby potentially affecting their family's health.



Cytogenetic analysis at the CHRC

To address these concerns Brunel University London and their collaborating partners, London School of Hygiene and Tropical Medicine are undertaking a cytogenetic (NCCF Phase 1) study. They are also undertaking a genetic (NCCF Phase 2) study in collaboration with the University of Leicester. These studies will compare the amount and type of genetic alterations found in a sample population of nuclear test veteran family trios (father, mother, and child) with that seen in veteran family trios who have no association with nuclear test participation.

The project organisation successfully gained full Health Research Approval (HRA) in August 2017 after a lengthy process of ethical and legal scrutiny. This enabled the English and Welsh health board authorities to give their approvals for these studies to proceed with veterans who were in their jurisdiction. This in turn, allowed the process of recruitment of 50 test and 50 control family trios by informed consent to begin in January 2018. The recruitment process is complex and requires liaising with families' GPs across the Country and, with individual families prior to obtaining their consent.

However, good progress continues to be made and they have recruited more than half of the required participants. This is in-line with expectations based on the age of the veteran couples and our study requirement for complete trios.

Blood samples are being received at Brunel University London and are being processed for cytogenetic (NCCF Phase 1) and genetic (NCCF Phase 2) analysis. In-depth analysis is underway and is continuing in parallel with ongoing recruitment to the study. To align the outputs of the NCCF Phase 1 Cytogenetics study with the NCCF Phase 2 Genetics study, The project organisation with the support of the NCCF requested and gained a no-cost extension to the term of the former study to the end of August 2020.

Brunel University London will report their findings after the studies have been completed and have undergone the peer-review process for publication.



# Phase I Project 02

Nuclear Community psychiatric and psychological assessment and treatment program.

**Project Organisation:** Combat Stress  
(Ex-Services Mental Welfare Society)  
**Project Cost:** £243,900



## Project Activity

Combat Stress will deliver a mental health outpatient service to the nuclear community. This will comprise psychiatric and psychological assessment and treatment. Treatment will comprise evidence based NICE Guideline recommended medication and therapies.

Clinics will be run by Combat Stress suitably qualified and professionally registered Psychiatrists, Psychologists and Therapists. Patients will be seen as required, for follow-up by psychiatrists for mental state reviews and medication monitoring. Psychiatric follow-up could range between very few to more significant numbers of outpatient sessions depending on clinical need.

Individual therapy sessions will be delivered by psychologists and therapists. An average of 12 -16 hours of therapy is required to treat most common moderately severe mental illnesses.

Clinics will be held at selected Royal British Legion 'Pop in Centres' alongside mainstream community health services already delivered by Combat Stress at these sites. Outcomes will be measured; Clinical Governance policies and procedures will be in place.

## Beneficiaries

In the 1950s, 21,542 service personnel were exposed to Nuclear Experiments. Many married and have descendents. Veterans and family members from the Nuclear community will access this service. High levels of mental illness were evident in a BNTVA Needs report of 2011. This audit included 633 respondents.

Higher than expected levels of 'stress', 'depression' and 'anxiety' and 'mental illness' were found. Much of this was attributed related to concerns related to possible exposure to radiation and passing on genetic diseases to descendents. High levels of self-reported physical illness perceived as attributable to the Experiments were demonstrated as well.

The audit demonstrated high levels of difficulty in making NHS health professionals understand issues surrounding the nuclear experiments impeding engagement with statutory NHS services. Combat Stress is the largest veterans' mental health charity delivering bespoke mental health services to veterans. It has high treatment engagement and completion rates.

## Progression

Following a promising start the project began to flounder and toward the end of 2016 action had to be taken against the Project Organisation.





During the initial stages Combat Stress imposed restrictive conditions as to the membership of the pilot study group resulting in a very low uptake. By December 2016 the pilot group was deficient by 70%. The issue of the restriction had been raised with the Project Organisation a number of times, but there was no relaxation of the criteria in question.

Without the delivery of the pilot there would have been little possibility of developing a coherent national picture of any specific mental health issues within the Nuclear Community. This, in turn, prevented the development of a national treatment regime.

The Grant Agreement under which the Project Organisation was engaged was found to be in material breach by virtue of failing to provide monthly reports on progress as required under the Grant Agreement. Requests for the reports to be produced made under 6.1 of the Grant Agreement, which should have been addressed within 30 days went unanswered. The failure of the Project Organisation to remove their constructed restriction also breached the Grant Agreement by virtue of being in contravention of the terms of the Project Schedule and Bid Documentation.

On 25th October 2016 a letter was issued to Combat Stress advising them of these facts, and that in failing to rectify notified breaches within the prescribed time had resulted in the termination of the agreement.

We requested Combat Stress finalise the financial aspects of the project, and provide a full account relative to the aims of the project prior to our settlement.

Revision of the project and reallocation of the funding: In considering what actions that could be undertaken to address the identified increased level of mental health problems within the nuclear community served by the Aged Veterans Fund Grant, we turned to the bid being developed for Phase II. The mental health treatment provision was being planned to be encapsulated within a new extended Care, Wellbeing and Inclusion Project.

As a result of developing the Phase I bid we had realised that, aside from the initial investigatory work that was to have been completed by Combat Stress, assessment and treatments could be delivered by mental health practitioners anywhere in the country.

With the demise of the Combat Stress project, we had the opportunity to redirect the residual funding into the Phase I Care and Wellbeing Fund Project and a reasoned application for this redirection was made to the AVF board which was approved.

### **Project Outcomes**

Only a small number of veterans took part in the initial trial. With the transfer of funding following the closure of the project we were able to greatly increase the Care and Wellbeing Fund resource which enabled the addressing of both physical and mental suffering resulting in a palpable increase in the wellbeing not just of the direct beneficiaries of the project but of their extended families too.

### **Further Activities**

Although this project was cancelled and the funding redirected the need to address mental wellbeing across our community has been evidenced within the outcomes of the Nuclear Families Project. In developing the Phase II bid we incorporated the support for mental health within the inclusion concept of the CWI Fund The Centre for the Health Effects of Radiological and Chemical Agents (CHRC) have begun to examine both mental and physical health within the community from a number of interesting perspectives.

# Phase I Project 03

## Nuclear Families: Understanding the Experiences of the Test Veteran Community

**Project Organisation:** The University of Southampton

**Project Cost:** £150,000

### Project Activities

The psychosocial experiences of the families of nuclear test veterans are still academically unexplored, despite arguable anecdotal evidence. Nuclear Families will apply a cross-disciplinary approach to understand and describe this unique cohort.

Nuclear Families consists of four phases. Phase 1 will review literature on the veteran community experience within other challenging scenarios, to provide background context to the project. Phase 2 will quantitatively assess the past and present health and wellbeing of participants by interview and statistical analysis, to provide direction to the main body of work. Phase 3 will give insight into the lived experiences of participants through a large-scale targeted cross-disciplinary and collaborative academic study. Family, home, perception of risk, and life experience will all be included. Phase 4 will publicise the study through conferences, national media and feedback groups. This work will be of significant value, by providing hope and insight for both academic and veteran communities.

### Beneficiaries

The nuclear test veterans, their families, friends and the academic community will all gain immediate benefit from this work. Work will be shared directly with these groups by scientist-veteran community workshops and group events.

Nuclear Families will produce newsletters updating the 100 participants and their families as research progresses. Nuclear Families will help to improve everyone's understanding of the nuclear test veteran's family experiences, and start to pave the way for better help for these people.

However, the results of this project will be also disseminated across the international academic community and national media, by publication of papers and journalism. This will raise awareness of the challenges faced by nuclear veteran communities, benefiting thousands of families of all types of veteran, and the academic community; whilst creating a significant new field of research.

### Progression

The principle researcher Dr Becky Alexis-Martin, progressed the research and reporting for the project. A project website was constructed and along with other articles in the nuclear community media began to raise awareness of the work. The ethical applications for the research necessary to deliver the project were written and obtained approval. The project recruited a cohort of nuclear test veteran families and undertook phased research across the community. Topics that were explored included: wellbeing, mental health, physical health, perceptions of risk, hidden care, and memorialisation and death. The qualitative methodology for this study included questionnaires, semi-structured interviews and oral histories, workshops, and participant observation. It also included the collection and analysis of secondary data, including academic literature, veteran biographies, material from the National Archives, and artefacts from personal collections.

### Project Outcomes

In February 2019 the final project report titled "Nuclear Families: A Social Study of British Nuclear Test Veteran Community Families" by Dr Becky Alexis-Martin, Dr Emma Waight and Dr Mwenza Blell was published for review by the NCCF prior to undergoing formal peer review.



Dr Becky Alexis-Martin, Principle researcher  
Nuclear Families

### Further Activities

Once peer review has been completed copies of the report will be placed in notable resource collections like the House of Commons Library and the CHRC. The report makes a number of recommendations and these will be taken onboard by the NCCF and considered shape future policy and planning to address the needs of the beneficiary community. Additionally the examples NHS Health Cards will be presented to Public Health England and the Department of Health to inform and increase awareness of our beneficiary community amongst health care delivery professionals. The identified problems of somatic and mental health issues amongst descendents will be taken on board by the NCCF with a view to further examination to try to provide additional resource to address this type of suffering.

# Phase I Project 04

## Nuclear Community Remembrance Project

**Project Organisation:** Nuclear Community Charity Fund

**Project Cost:** £6,000

### Project Activities

Remembrance is a crucial part of developing and raising wellbeing amongst both veterans and their survivors. Around the United Kingdom there are some 14 memorials to British Nuclear Test Veterans, they serve as focal points for remembrance by veterans, their spouses and their offspring.

The primary objective was the creation and installation of two stone benches depicting information about the test sites used by Britain to the British Nuclear Testing Memorial sited at the National Memorial Arboretum. The dedication of these was to coincide with the 2016 National Atomic Veterans Day, creating an event to draw together members of the nuclear survivor community from across the country increasing comradeship and wellbeing.

### Beneficiaries

British Nuclear Test Veterans their families and supporters.

### Progression

After drawing together all the necessary elements to create and install the benches at the National Memorial Arboretum the project ran into a major issue in the form of a new policy decision by the Trustees of the NMA to impose a complete restriction on permanent benches. We entered into negotiations with the NMA management to try and resolve the situation and this proved to be a very protracted process.

### Revision of the Project

The National Atomic Veterans Awareness Day event on the 3rd of October 2017 was rapidly approaching and it became clear that there would not be time to make any changes to the National Memorial during that year. The nuclear test memorial at Manchester had been moved during the installation of the cities tram network and we were approached by Manchester Council regarding the possibility of reinstalling the memorial and conducting a remembrance and rededication event.

Because Phase II of the AVF had been approved by this time, it was decided to deliver the Manchester event from this funding to cover NAVAD 2017 and defer the NMA activity to the following year.

### Project Outcomes

Negotiations with the NMA reached a successful conclusion with the decision to abandon the bench concept as the vehicle to carry the detail of British Testing sites in favour of actually extending the memorial with two new stones accommodating the information. BH Associates worked with the contractors, Natural Cut Stone to create the new memorial and obtain final planning approval. This was achieved and the extensions to the memorial were created and installed in time for NAVAD 2018.

An unveiling and rededication ceremony was conducted by the Very Reverend Nicholas Frayling, Chaplain of the BNTVA. Over 100 members of the British Nuclear Test Community attended the event and an afternoon tea was provided.

The development at the NMA has been the culmination of six years of work aimed not only at creating an appropriate remembrance memorial as a fitting tribute to those veterans who served at British Nuclear Tests but also as an educational piece to tell the story of our community to over 300,000 guests that visit the NMA every year.

### Further Activities

This project was developed into the Remembrance Project within the AVF Phase II bid. The project aims to restore and re-dedicate all NTV memorials across the country, a service not provided by central government or local councils although some other charitable support may be available for us to use at some of the memorial sites. Additionally each rededication event will be delivered to raise awareness of the nuclear community and the story of the veterans within the local area, Remembrance is a key cathartic process increasing wellbeing amongst both veterans and their families. The memorials are also to be linked in a virtual museum reinforcing the presentation of the nuclear community to the wider population.



The nuclear test memorial at Manchester



A wreath at the National Memorial Arboretum



The nuclear test memorial at Leeds Minster with test veteran Brian Gay and his wife

# Phase I Project 05

Nuclear Community Care and Wellbeing Fund

**Project Organisation:** Nuclear Community Charity Fund

**Project Cost:** £110,000



## Project Activities

Provide direct grants to applications within the nuclear survivor community for items and adaptations designed to ease suffering and enhance wellbeing that are not available from the public health service or social service provisions.

## Beneficiaries

Members of the Nuclear community identified as most in need of assistance by assessment of their application. We anticipated being able to help around three hundred people in the first year of the project with varying grants on anything between £30 and £3000 this will be reviewed and inform development of the project in future years.

## Progression

A 'Grant Panel' was formed from amongst the NCCF Trustees and a number of initial principles of operation were established: The Grant Panel members were not identified prevent lobbying. Applications were anonymised to further reduce Grant Panel members from having to declare conflicts of interest or responsibility.

After the initial six months of operation the activities of the project fell into three areas: Main application process, Simplified application process and Assistance to attend events. The Trustees monitored the progress of these three aspects of delivering care and wellbeing support to potential beneficiaries.

## Revision of the Project

With the demise of Project 02 - Nuclear Community psychiatric and psychological assessment and treatment program, a case for the transfer of the residual funding to the Care and Wellbeing Fund was produced at the request of the Trustees of the BNTVA 1131134 by BH Associates. This case was accepted by the AVF and the funding was reallocated, this provided a significant increase to the monies for Care and Wellbeing support. The transfer effectively raised the allocated funding to £320,265.92.

When the Phase II bid was achieved the Treasury made the charity a significant offer; rather than run a number of projects over a three year period drawing down the individual project funding over that period the BNTVA 1131134 was asked if it could accept a block endowment from which the proceeds could be used to address not only the initial Phase II projects but also provide Care Wellbeing and Inclusion Support to the nuclear community for a period of at least 15 years. The provision was to be managed by a separate charity to be created by the division of the BNTVA 1131134 between two new organisations.

This proposal was accepted by the Trustees of the BNTVA 1131134 and was put to the membership at the following AGM where it was supported without objection. The implications for the Phase I Care and Wellbeing fund meant that the remaining monies would have to be managed to cover applications for support for at least 12 months from the investment of the endowment to allow for it to produce a return.

The trustees considered the best way to manage the fund to achieve this and imposed an immediate suspension on the Support to Attend Events and the Simplified Grant scheme.

During 2017 the mandate from the AGM was delivered and two completely new organisations were created. The Nuclear Community Charity Fund, Foundation CIO No 1173544 and a new Foundation CIO, The British Nuclear Test Veterans Association No 1173575.

The management and residual funding of the Phase I projects was novated to the new NCCF who undertook the responsibility for the completion of the project.

Conflicts of Responsibility and the need to engage directly with the beneficiary community: Initially there were a number of Trustees positions on the NCCF board that were reserved for Trustees of the New BNTVA, it was initially thought that this would create a convenient link to the beneficiary pool of the charity. However, after a number of incidents, it was found that joint membership was creating conflicts of responsibility that were working against the charitable purpose of the NCCF.

The NCCF Trustees voted to remove the BNTVA integration and replace it with 'independent members of the nuclear community'. The remaining three Trustees who were also BNTVA Trustees resigned their BNTVA positions. This allowed the NCCF and the Grant Panel to continue to operate independently without the conflict of responsibilities being caused by the significant changes in activity direction that were adopted by the new BNTVA Board.



### Project Outcomes

The Simplified Scheme managed 18 applications and made £1995.00 of provision. Mainly for disabled living adaptations (DLA's). It was noted that as time progressed there were an increasing number of enquiries for additional applications and items that would not strictly be classed as DLA's. The suspension of the scheme to allow management of the Phase I funding the ability to bridge the gap before Phase II funding became available resulted in an opportunity to review the management of this scheme.

The Trustees decided that it was potentially open to abuse which would mean the charity was not managing its finances in a manner appropriate to its charitable purpose.

The Care Wellbeing and Inclusion Fund application and disclosure process was redesigned and technological developments introduced by BH Associates in 2018 which meant the Grant Panel was moving to streamlined applications managed by monthly on-line meeting. These allow a rapid response to any situation and effectively rendered the simplified process redundant.

The Assistance to Attend Events scheme was also suspended during the period of the funding bridge. The scheme had assisted members of the nuclear community to attend three events at a cost of £26,075.00, the scheme made just over 200 grants of support.

The Trustees reviewed the support made through this scheme and whilst the initial concept had been to offer a set level of support for particular events from which applicants could submit, in practise all applications had been supported because the scheme did not correctly identify the neediest members in the community in terms of suffering and the ability to address that suffering.

When the NCCF was established as an independent charity the project responsibilities and funding was also vested across. The NCCF Trustees found that as the Events scheme was part of the Care Wellbeing and Inclusion Fund all grants must comply with the Charitable Purpose of the organisation and be in the public good.

Un-tested applications were clearly out with this requirement and the Trustees could have been brought to task by the Charity Commission for misuse of funds. Paying £80 for someone to attend the All Tests Reunion when they openly admit they have over £20,000 in savings is not within the charitable purpose of the NCCF, especially when that could deny another person a disabled living adaptation that would benefit their life on a daily basis.

Any assistance requests from individuals must be subject to the same controls as any other grant from the charity to ensure, we have a duty to address suffering amongst the most needy within our community obtaining best value and widest impact from the limited resources at our disposal. As with the Simplified scheme the revised CWI Fund processes also make the Events scheme redundant and the Trustees took the decision not to reopen the scheme under Phase II.

### Care and Wellbeing Applications

During the three year life of the phase I scheme over 80 applications were received, of these 11 were rejected by the Grant Panel and 13 were withdrawn by the applicant for various reasons. The rejections were made for a number of reasons: Refusal by the applicant to provide enough information for the Grant Panel to make a balanced decision, requests for items that were already available from state funded provision and a number of cases where it was found the applicant had enough wealth to easily address their own need. The Trustees reviewed all the reasons for rejection and where possible provided information to the community within the magazines and through our roadshow. The education applicants as to what could be requested appears to have been effective as a significant drop in the level of rejections was noted in the final year of the project.

BH Associates were contracted to manage the applications and the provisioning of support, throughout the project they worked closely with both the Grant Panel and the

Trustees to ensure that the application, consideration and provision process ran efficiently whilst remaining within the parameters of the project and grant.

The growing experience of providing for the needs of our community was also supplemented by the services of a professional Occupational Therapist organisation. In cases where there was uncertainty over the measures needed an OT Assessment would be organised. This produced a comprehensive set of recommendations professionally identified. In many cases the OT identified issues for support that the applicant had not considered. This ensured we provided the best support possible tailored to the needs of the individual.

Because the charity does not have a national network of support workers we have made use of the Sailors, Airmen and Families Association (SSAFA) charities local Case Worker system. This has also added value to the provision as often the case worker will provide additional help, advice and support to the applicant.

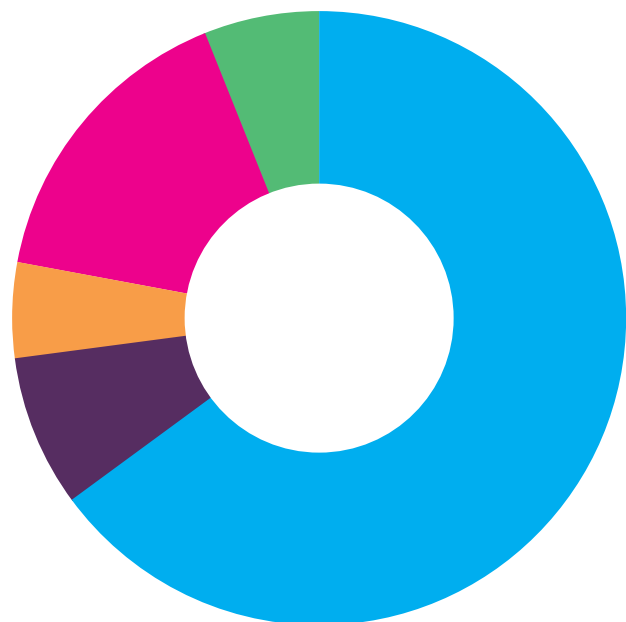
A number of reviews and improvements to the processes were also conducted and during the project life, some arose from the recognition of potential issues by the Project managers and others from issues surrounding specific applications.

One of the key factors of the scheme campaigned for and won was that there must be provision for the entire community, not just the veterans. This was made clear and fully accepted at all stages of the final negotiations with the Government, within the EOI and in the final bid. All members of the community must be able to benefit from the fund regardless of generation. This also included the ability to provision for those who's veteran had already passed away.

## Breakdown of applications across the community

### Applicant Type % of Applications

- Veteran\* 65%
- Widow 8%
- Son 5%
- Daughter 16%
- Grandchild 6%



\*Many Veteran beneficiaries were also married leading to their spouses becoming an uncounted beneficiary.



Provisions under the grant scheme include Wetrooms,



Stairlifts,



Rollatos,



and Motorscooters

The NCCF were also keen to ensure that information about the support available was delivered further than just the membership of the BNTVA. As far as we are able to establish there has been a fairly even match of BNTVA Associate Members to non-BNTVA beneficiaries.

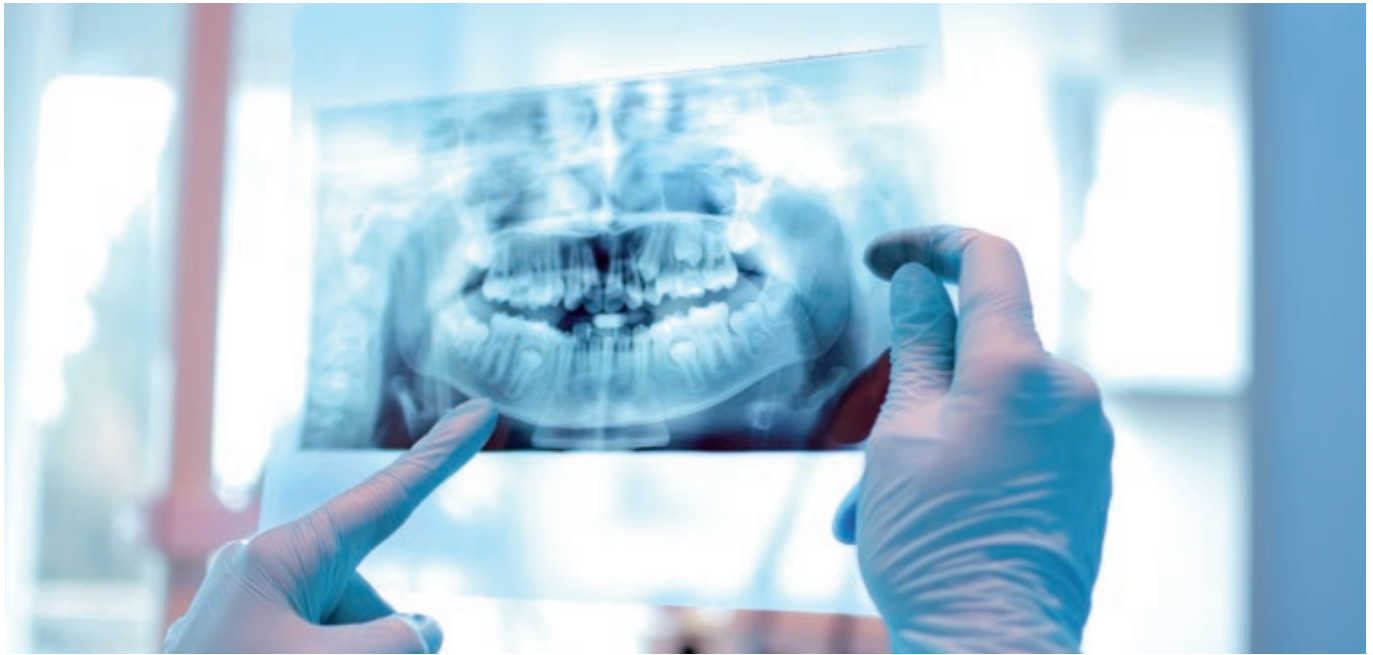
The average amount of funding allocated per application has been just over £4000. During the project we have worked on joint provision with the Royal Air Force Benevolent Fund (RAFBF) and Soldiers, Sailors, Airmen and Families Association (SSAFA) which has increased the reach of some grants significantly.

## Breakdown of the different types of provision made

### Applicant Area % of Grants

- Daily Living Adaptations 44%  
(Wetroom, Stairlift, Rise/Recline chair, Profiling Bed)
- General Provisions 12%  
(Post Operative Care, Hardship)
- Inclusion 14%  
(Respite Breaks, Communication Technology)
- Mobility 18%  
(Electric Wheelchair, Mobility Scooter, Rollato)
- Medical 12%  
(Orthodontic Work, Specialist Consultation)





Medical, Orthodontic work and specialist consultaion made up 12% of the provisions made to the nuclear community

**Further Activities:** The systems and procedures developed during the delivery of this project has been directly adopted by the Phase II Care Wellbeing and Inclusion Fund (CWI Fund). BH Associates have created an internet based secure system allowing the Grant Panel to sit as required to review applications. This has greatly increased our reaction times and enhances our ability to provide timely help to those in need.

We have also developed a greater understanding of the common needs of the community and the most effective methods to address them, this knowledge has all been carried to the Phase II funded CWI Fund adding value and quality to the project. As has been observed the Simplified Application and the Assistance to Attend Event schemes have now become redundant with the introduction of the more responsive application process.

### **Portfolio Management Partner**

BH Associates were contracted to manage the portfolio of projects and provide the necessary day to day back office support to the charity.

The decision to engage BH Associates proved to be a very beneficial move. The level of assistance and support provided by the company has been far in excess of what was asked in the contract, they have willingly undertaken additional work enhancing the ability of the charity to discharge its responsibilities.

It has been clear that the empathy shown by the directors of our Portfolio Partner due to their previous connections and experience within the nuclear community has added significant value to their contribution in terms of both advice and activity. The dedication to the NCCF by our Portfolio Partners has extended readily into the Phase II projects where they continue to make great contribution.

### **Conclusion**

After the initial disappointment of not achieving the full amount of monies called for by the Recognition Campaign, the Trustees of the Old BNTVA and NCCF set about cutting the cloth to provide maximum impact across the needs of the community.

Significant concessions were made to the research project conducted by Brunel University to provide meaningful results within this restricted funding. The impact on the Care and Wellbeing fund was also considerable however when the mental health project was withdrawn and the residual funding was reapportioned a greater flexibility and innovation was enabled to address community needs.

As the projects progressed their delivery afforded the NCCF the opportunity to learn and develop management skills and procedures, a theme of continual improvement has been present throughout the life of the Phase I Portfolio and continues to be the legacy as the NCCF move to Phase II.

It is clear from historical events that the original BNTVA charity having achieved its Recognition Campaign goals created the NCCF to deliver the fruits of the campaign to the nuclear community. The hard work of the past decade was complete and the reins of trusteeship for the future of the British Nuclear Community were passed to the NCCF.

# News from the NCCF

The NCCF operates as a Foundation Charitable Incorporated Organisation, this means that its only actual members are the board of trustees. The charity still has to hold board meetings and have an Annual General Meeting. On the 13th December 2018 at the Victory Services Club London The NCCF held its 2018 AGM.



© BH Associates

Jeff Liddiatt - Former Chairman and now Treasurer of the NCCF

Presentations were made on the progress of the various projects within our portfolio of support to the nuclear community, the accounts were reviewed and auditors report considered and plans for the following year agreed.

The meeting was opened by Jeff Liddiatt who, after a short speech thanking all present for supporting him through the creation of the NCCF despite struggling with numerous health issues he formally resigned as the Chairman. Tony Jeffery Trustee accepted the nomination for the Chair and was voted in unanimously. Jeff accepted the position of Treasurer allowing him to continue to serve the community but without the considerable travel commitments of the Chair position. Tracey Morris accepted the position of Secretary.

Tony's first duty was to present Jeff with an engraved pen purchased by the board members in recognition of his service as Chairman.

The meeting also considered a number of applications to join the board of trustees and the following people will now join the team: Katy Morris, Victoria James and William Long.

The board are still keen to expand their number so if you know someone you believe could become a part of our team please get them to contact us - **[office@thenccf.org](mailto:office@thenccf.org)**

One of the main discussions was regarding the introduction of technology and the best way to utilise it to improve the response ability of the CWI Fund and the general running of the organisation.

During 2019 we will be moving to on-line meetings and video conferencing allowing for much more regular contact between Trustees without incurring the cost of travel.

# Letters of Thanks from Beneficiaries

As the last issue, we have received a letter of thanks from a beneficiary to the NCCF, we will publish more of these as we receive them. We always keep beneficiaries identities confidential, even our Grant Panel does not know the names of those they help.

A beneficiary writes...

Dear Nigel

Please can you pass on our sincere thanks to all members of the NCCF as without your help we would be writing a very different story today .

After being diagnosed with Cancer in August last year, and being one of the most difficult and painful cancers to treat, your Charity stepped up to help us financially when the Government failed us.

Without the help of the Charity my Family and I would have definitely been made homeless, due to myself and my wife not being able to work.

My Wife was unable to work due to caring for me and taking me daily for my Chemotherapy and Radiotherapy which some days would be a total of 10 hours per day as we had to travel a fair distance for treatment too.

With the help of the NCCF you eased the financial stress which enabled us to cope with the everyday treatment and the side effects a little more easier.

Whilst I am still recovering from the effects of the treatment, I am ecstatic to say, was successful. It is without doubt we were able to get through this difficult time due to your help and support. There are no words to describe our heartfelt gratitude but please accept this letter of thanks from the bottom of our hearts.

Your sincerely



If you are a UK-based member of the Nuclear Test Veterans Community or know somebody and have any needs that may be addressed by this project visit:

**[thencf.org/care](http://thencf.org/care)**

or write to:

**NCCF CWI Fund  
PO Box 8244,  
Castle Donington  
DE74 2BY**



# CHRC

Centre for Health Effects of Radiological and Chemical Agents

## Exposure Editorial Spring 2019

A round up of what's been  
happening at the CHRC

**P30**

## Assessment of Risks from Combined Exposure to Radiation and Chemicals

Research into the effects of Radiation and Chemicals

**P31**

# Exposure Editorial Spring 2019



Since the beginning of this year, we have continued to make progress on all of our research projects.

Many of you are interested in the Genetic and Cytogenetic Study in particular, and I am pleased to report that our laboratories at both Brunel University London and Leicester University continue to be very busy with the receipt, processing and analysis of the blood samples received from families who have been recruited onto the study. We wish to continue this good progress and encourage all those who have been recruited to the study and, who have been sent a blood sampling pack to take to their GP, to do so as timely as they can.

We continue with our 'Meet the team' feature to introduce our researchers and the work they are carrying out. In this issue PhD student Finlay Smith provides an overview of his research project which is examining the effects of combined exposures to radiation and chemicals at a cellular level. One question he is asking is whether the combined exposure to multiple agents is potentially more hazardous than exposure to individual agents. This project has relevance for a variety of potential exposure scenarios including nuclear test veterans who may have been exposed to toxic chemicals in addition to possible exposure to ionising radiation during their military service.

George Collett thanks everyone who has completed and returned their 'exposure worry' questionnaires. He invites the study participants to build on this research by taking part in a brain functioning study, which will involve short questionnaires and a brief assessment conducted over the telephone.

Amy Prescott greatly appreciates the contributions of veterans who participated in the telephone interviews for her wellbeing project. Amy will be following up on this research by speaking with veterans face-to-face. Letters will be sent out soon to study participants in order to schedule these interviews.

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## Sport, Culture & Wellbeing: Community approaches to promote the wellbeing of British Nuclear Test Veterans and their families

### Amy Prescott and Prof. Louise Mansfield

Thank you to all participants who took the time to be part of the telephone interviews which took place from November to January. These conversations have been incredibly important for the study.

For those who have taken part, you should have received a letter in the post informing you of the next stages of the study which will be face-to-face interviews.

Please be aware that you will be sent another letter in due course regarding the organisation of these interviews; for this, the researcher will be travelling to you and you will not have to make the journey to Brunel University London.

If you have any questions, please do get in touch with the CHRC on **01895 266 018** or email Amy Prescott on **chrc@brunel.ac.uk**



Amy Prescott

# Assessment of Risks from Combined Exposures to Radiation and Chemicals.

Finlay Smith, Dr Rhona Anderson, Professor Andreas Kortenkamp  
Centre for Health Effects of Radiological and Chemical Agents (CHRC)

## What are we looking at?

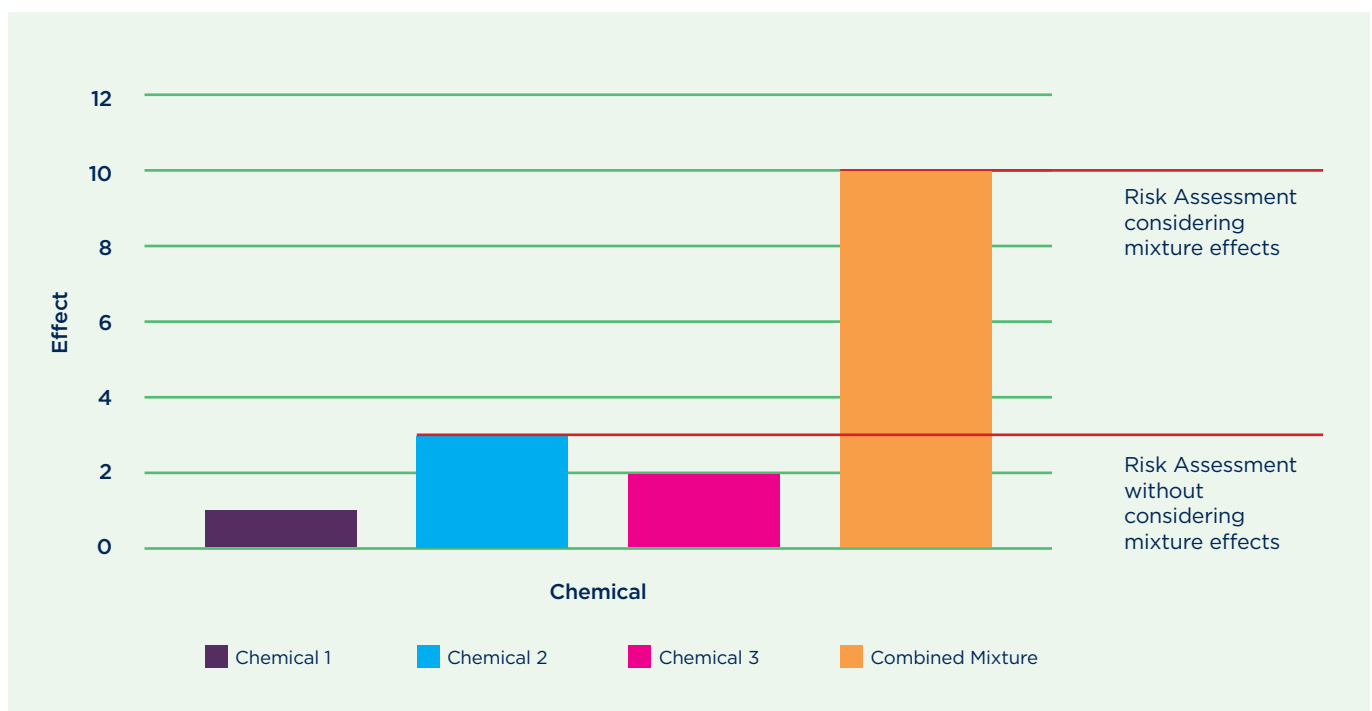
The purpose of my research is to investigate whether combined exposures to ionising radiation and genotoxic chemicals (any toxic chemical that acts by damaging DNA) is potentially more hazardous than exposure to either of these agents alone, and whether the effects of combined exposures could be predicted correctly for risk assessment purposes.

This is an important question, as the current regulatory system treats chemical hazards and radiation hazards almost entirely separately, and the resulting exposure limits reflect this. If there was a significant risk increase due to combined exposures, these regulatory limits therefore have the potential to underestimate the true risk.

This approach builds on the concept of Mixture Toxicology that is increasingly used to assess pollution impact in the chemical sciences (Kortenkamp, A. and Faust, M., 2018). Mixture toxicology investigates the health effects of exposure to chemical mixtures, both at the human and environmental levels.

The hypothetical example presented below shows a mixture of chemicals (Chemical 1, Chemical 2 and Chemical 3) with a combined effect that is greater than the effect of its most toxic component (Chemical 2).

## Effects of Mixtures of Chemicals



We do not know if a similar relationship exists for combined exposures between a chemical mixture and ionising radiation, and this is what I will be investigating in my research.

**Mixture Toxicology**

Mixture toxicology deals with the concept that chemicals with similar chemical structures or similar biological effects can have a combined mixture effect that has a greater effect than its component's individual toxic effect. Therefore mixtures of several chemicals can present a risk even if each individual component is below levels where routine risk assessments would place the risk as negligible or 'safe'.

Mixture toxicity depends on exact mixture composition, whether toxicity is additive or independent in function, which are different conceptual models. And it can also depend on whether or not one component can increase or decrease the activity of another, referred to as synergism or antagonism respectively.

When the toxicity of individual mixture components is known, mixture effects can be predicted mathematically.

**What is the relevance to Nuclear Test Veterans?**

While traditionally hazards have been considered separately in any real-world exposure scenario an individual will be exposed to multiple agents present in the environment around us. This is especially true in industrial settings or the military where the use of hazardous chemicals is more frequent. We know from historical accounts and eyewitness testimony that personnel were exposed to high levels of the insecticide DDT, as well as fuel oils and industrial chemicals used in vehicle maintenance, many of which are carcinogenic (can cause cancer) or can contribute to the toxic load on the body.

A large study that combined data from a number of epidemiological studies (a study of disease incidence correlated with other factors) on European populations (Darby et al, 2005) showed that there is a substantial increase in the absolute risk of lung cancer in smokers in areas where there is higher natural background radiation. In particular, there is an increased risk in homes which have a higher concentration of Radon gas in the air.

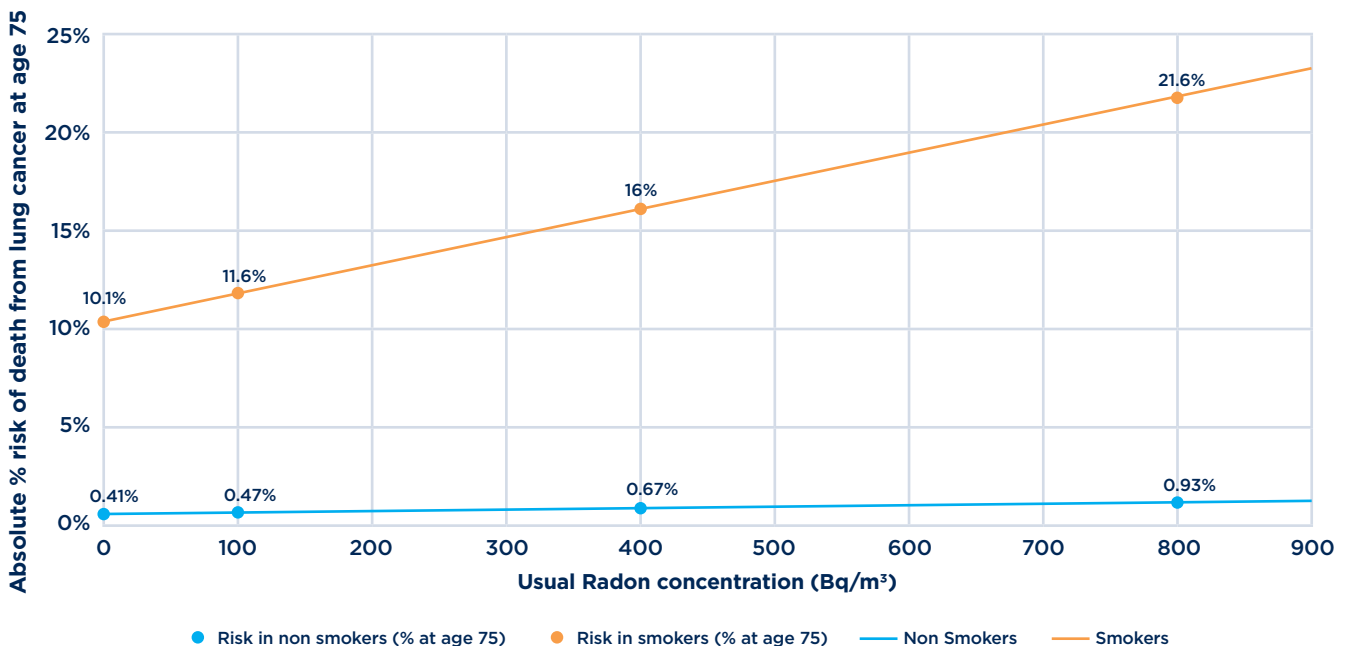
Naturally occurring Radon gas is an alpha-particle emitter which presents a small radiation risk when inhaled.

The authors of the study reported the absolute risk levels for lung cancer for smokers to be higher than non-smokers at all dose levels, with both increasing proportionally with exposed dose. This is because the existing risk of lung cancer is much higher in smokers due to the mix of carcinogens present in cigarettes. This higher 'base rate' means that the same proportional increase in risk per 100 Bq/m<sup>3</sup> (a measure of the number of radioactive atoms releasing an alpha-particle per second in one cubic meter of household air) results in a much larger absolute risk in smokers for the same radiation exposure.

In smokers, cumulative (over a lifetime) absolute risk of lung cancer by age 75 was found to be 11.6% with a background radiation level of 100 Bq/m<sup>3</sup>, and 21.6% with a background radiation level of 800 Bq/m<sup>3</sup>. In non-smokers this was 0.47% and 0.93% respectively.

This information is presented graphically below.

**Risk of death from lung cancer at age 75 in cigarette smokers and non smokers versus usual radon concentration in homes.**



(Graph reproduced with permission from data Darby, S. et al, 2005, who used data from Peto, R. et al, 1992)

This shows that exposure to a mixture of carcinogens (cigarette smoke in this instance) in the lung can considerably raise an individual's risk of developing lung cancer that is correlated with increased radiation exposure to atmospheric Radon alpha particles.

### What does the work entail?

We are conducting a detailed review of all published experimental literature in this area, but this interaction has not been studied in much depth, and what work has been done mostly concerns single chemicals in combination with radiation exposure rather than more realistic multiple exposures. My research therefore aims to provide a good experimental basis to examine the effects of radiation exposure in combination with mixtures of genotoxic chemicals in an in vitro system (an experimental setup that does not use a living creature, but cells grown in a culture dish).

The experimental work will be carried out in Professor Kortenkamp's laboratory, Brunel University London, and in collaboration with an external collaborator for cell culture irradiation. Cells will be cultured (grown) in small sterile dishes, and exposed to carefully prepared mixtures of genotoxic chemicals and then exposed to alpha particle irradiation to give the cells a radiation dose proportional to the mixture concentration. This is called a fixed mixture ratio approach, and allows for calculation of the combined mixture effects.

The first set of experiments will be conducted using a standard model cell line (identical cells grown from a single sample cell) used in chemical toxicology, which is non-human. Later experiments are planned to conduct the mixed exposure experiment using a human cell line as a model.

As with all experimental work, care must be taken when extrapolating conclusions from a cell line model to the whole organism, however this approach is used routinely in toxicology to assess the potential hazards of exposure, and this work represents an important step in building our knowledge of the risks presented by radiation exposures to individuals in real-world exposure scenarios.

### References

1. Kortenkamp, A. and Faust, M. (2018) Regulate to reduce chemical mixture risk, *Science*, Vol. 361, Issue 6399, pp. 224-226.
2. Darby, S. et al (2005) Radon in homes and risk of lung cancer: collaborative analysis of individual data from 13 European case-control studies, *BMJ* Vol. 330, Issue 7485, pp. 223-225.
3. Peto, R. et al. (1992) Mortality from tobacco in developed countries: indirect estimation from national vital statistics. *Lancet* Vol. 339: pp. 1268-78.

## Centre for Health Effects of Radiological and Chemical Agents First Year Report

The Centre for Health Effects of Radiological and Chemical Agents has produced a report on the first year of operations.

The CHRC was established in September 2017 so much of the team's effort through 2017/18 has focussed on the recruitment and training of new staff and students, the design and ongoing delivery of new research projects in key discipline areas, the development and effective implementation of management protocols and procedures and, the promotion of our work to scientific and nuclear test veteran communities. We give an account of our progress in all areas in this Annual Report.

We are particularly pleased to highlight the shared focus of our multi-disciplinary specialists and early career researchers in integrating and building research capacity around this community of aged test veteran and their families.

Over the course of 2017/18 we have had the opportunity to better understand the beliefs and unanswered questions held by many in the nuclear test veteran community.



The challenge moving forward will be to more effectively share the many scientific uncertainties and, the many scientific advances which have been made in understanding radiation health effects, particularly at low radiation doses.

**Dr Rhona Anderson**  
Director, CHRC

Read the full report at:  
<https://www.chrc4veterans.uk/wp-content/uploads/sites/30/2019/01/CHRC-Annual-Report-2017-2018.pdf>

# Meet the Team



Finlay Smith

Finlay Smith is a PhD student with a full time scholarship in the CHRC at Brunel University London. His research focuses on the effects of combined exposures to ionising radiation and genotoxic chemicals in cell-line models.

He has a First-Class Honours degree in Chemistry from the University of the West of Scotland, a Scottish Ordinary Degree in Chemistry with Materials from Heriot-Watt University, and is an Associate Member of the Royal Society of Chemistry.

Prior to taking up the PhD researcher position with the CHRC Finlay worked for two years with a radiopharmaceutical company supplying radioactive drugs for cancer diagnosis to the NHS.

He received radiation protection supervisor (RPS) training and was responsible for the operation of a cyclotron (a machine that generates radioactive atoms from stable ones) and the synthesis of radiopharmaceuticals for use in NHS patients.

Finlay is from Argyll in the west of Scotland, and enjoys spending time outdoors, hillwalking, climbing, and playing badminton with friends.

## Exposure worry, ageing, and cognitive functioning

George Collett and Prof. Mary Gilhooly

Thank you very much to everyone who completed and returned our exposure worry questionnaires. Your responses are invaluable to our research.

We are now ready to begin assessing cognitive functioning of nuclear test-veterans in relation to 'exposure worry'. Participants will complete a few short questionnaires and take part in an assessment of brain functioning conducted over the telephone. This assessment will last between 10 and 15 minutes. If you are interested in taking part or would like more information then please contact us on:

Telephone: **01895 266018**  
Email: **chrc@brunel.ac.uk**

You may have already received a letter or an email inviting you to participate. If you wish to stop receiving these then please contact us.

You can also find further information about the overall project on our webpage: **[www.chrc4veterans.uk/living-with-worry](http://www.chrc4veterans.uk/living-with-worry)**



**Brunel**  
University  
London

# Meeting of the Follow-up Commission on the consequences of nuclear testing



On 11th February, the meeting of the Follow-up Commission on the consequences of nuclear testing was held at the (French) Ministry of Health under the chairmanship of the Health Minister.

This commission that was established by the Recognition and Compensation Law of January 2010 meets twice a year (except when there are political interferences such as elections or cabinet reshuffles).

Jean-Luc Sans as a member of this commission by decree of the Prime Minister was representing AVEN and more broadly all veterans affected by nuclear testing in the Sahara and French Polynesia.

After comparing the list of illnesses recognized by UNSCEAR and those recognized by the French Law, the commission decides to add two illnesses to its list: biliary tract cancer and gall-bladder cancer.

After an input by Jean-Luc Sans, it is planned that the next meeting of the commission will make a decision on other illnesses such as pancreas cancer and pharynx cancer, so as to harmonise both lists.

The Health Minister and the Director of the National Public Health Agency confirm that nuclear veterans are entitled to the medical follow-up intended for persons at risk under the Social Security Code.

The representative of the Minister of Defence confirms that it is planned to establish a specific medal for nuclear test veterans.

The next meeting of the Follow-up Commission is set for next September.

**Jean-Luc Sans**



# Obsiven



# Christmas Island Sailing Club

Terry Brown wrote to exposure magazine to see if anyone has memories of the sailing club on Christmas Island.



Christmas Island Sailing Club 1957

Dear Sirs,

I thought that this photograph it might be of some interest, and bring back some happy memories of leisure time spent at the Christmas Island sailing club in the year 1957, during operation Grapple the pacific British nuclear H-bomb tests, where I Served for a year as a Cpl Terry Brown in the supply trade.

I can't remember all the people on the photograph, only the two who are situated in the front row. Myself, seated next to Flying Officer Brian Hughes, and next to him standing is S.A.C. Sam Musgrove.

Maybe this photo will help jog the memories of the other veterans who served at Christmas Island.

If anyone recognises any of the people let us know by emailing [editor@exposure.press](mailto:editor@exposure.press) and we will pass your details onto Terry.

# The Victory Services Club

The Victory Services Club is based near Marble Arch and was established in 1907. The VSC is a tri-service, all ranks Members' Club for currently serving and former serving members of the Armed Forces and their families.

The Club has two charitable objectives: to provide a place for serving and former serving personnel to meet; and to support serving or former serving personnel who face hardship or distress, including those wounded as a result of operational service. We are very proud of the Respite & Welfare Breaks that contribute to the second charitable objective.

The Club offers a truly unique Club atmosphere offering excellent service and value for money, impressive accommodation, varied dining options and events.

Sir Winston Churchill a lifetime Member of the VSC said, "The Victory Club for ex-servicemen given by the nation as a memorial to fallen comrades and as a tribute to those who returned, stands guardian of the common treasures and memories of friendship and brave deeds".

The Club was founded in 1907 by Major Arthur Haggard who had a clear mission: to promote 'esprit de corps' within the military, by uniting members of the Armed Forces after he witnessed destitute veterans on London's streets after returning from the Second Boer War.

If you are a veteran or member of a veteran's family you can join the VSC and receive a competitive reduction on accommodation in the heart of London along with access to fine dining and a quiet relaxing club in the heart of the capital.



You can find out more about the VSC online at their website: <https://www.vsc.co.uk/>  
You can apply to join on-line at <https://webbooking.infodata.uk.com/vsc/member/>

Or they will send hard copies of application forms by post if you contact **0207 616 8312** or email: [mem@vsc.co.uk](mailto:mem@vsc.co.uk)

**Victory Services Club**  
**63-79 Seymour Street**  
**London**  
**W2 2HF**

  
VICTORY SERVICES CLUB

# Online help and assistance

As an organisation who are committed to the wellbeing of the nuclear community we visit the Naidex Exhibition each year to keep abreast of current and future care, wellbeing and technological aids.

The Naidex exhibition is Europe's most established trade, professional and public event dedicated to the care, rehabilitation and lifestyle of people with a disability or impairment.

Whilst attending the exhibition we are on the lookout for suppliers who are able to give us their specialist expertise to enable us to help our beneficiaries. We have sourced everything from Motorscooters and beds to holidays and wetrooms.

We've also found several exhibitors who offers services that could benefit members of our community in ways that we may not have previously thought of. We've selected a couple of the exhibitors who caught our eye.

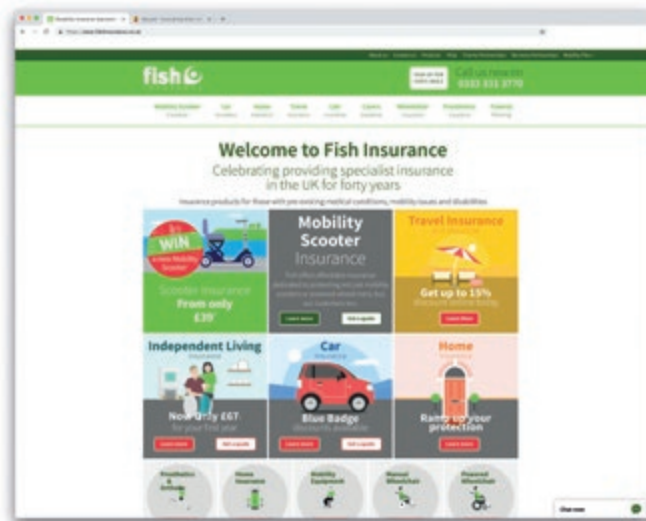


For forty years, Fish Insurance has been providing specialist insurance in the UK, to those with pre-existing medical conditions, mobility issues and disabilities. Today they look after over 80,000 insurance policies, making them one of the UK's biggest disability and independent living insurance providers.

Their policies have been specifically designed to meet the unique and specific requirements of disabled people whether they are looking to insure a manual wheelchair, powered wheelchair, mobility scooter, in-home products such as stair lifts and hoists or cover for a wheelchair accessible vehicle. They also provide liability insurance to protect people who employ their own personal assistants in the home.

The range of Insurance policies they cover include:

- Scooter
- Travel
- Independent Living
- Car
- Home
- Prosthetic and Orthodontic
- Mobility Equipment
- Wheelchair - Manual and Powered



**They can be contacted using the following details**

### Office Details

Monday - Friday 9am - 5.30pm  
Saturday 9:30am - 1:30pm

### Contact Address

12 Sceptre Court  
Sceptre Way, Bamber Bridge  
Preston, PR5 6AW

### Contact Details

General Enquiries Tel: 0333 331 3770  
Email: [admin@fishinsurance.co.uk](mailto:admin@fishinsurance.co.uk)

[www.fishinsurance.co.uk](http://www.fishinsurance.co.uk)

# Beyond...

“Your knowledgeable companion for everything after life...”.

Beyond offer services covering everything you may need from making a will to planning a funeral.

The services they offer include:

## Will writing services

This can be done online in 10 minutes at a cost of £90, it is legally checked by their expert legal team, and they offer live support. For an extra £10 per year you can make unlimited updates at any time.

## Funeral Director Comparison Tool

Its easy to compare prices and reviews using their register of funeral directors. They can be compared using your location and the type of funeral required. The online tools are easy to use and take a lot of the effort out of calling direct.

## Pre-Paid Funeral Plans

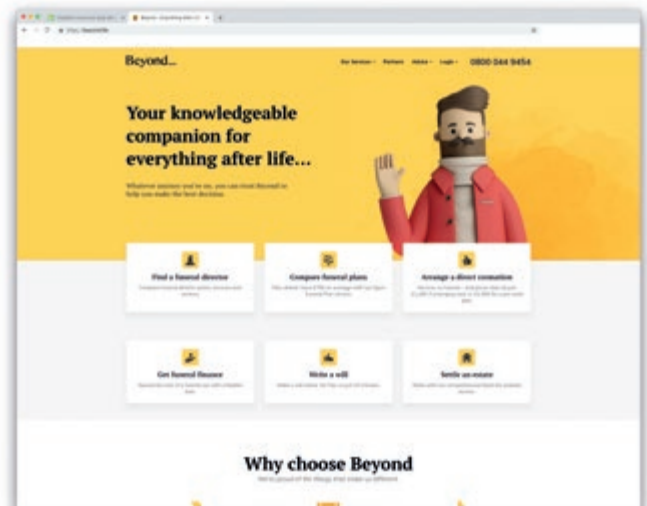
Pre paid plans can be searched for using the same tools and search criteria as the funeral director comparison tool. Once a funeral plan is chosen you have the option to create a monthly payment schedule.

## Obituaries

Beyond offer the ability to create an online obituary. You are able to tell the life story of your loved one on an online memorial. You are able to share stories and pictures online with friends around the globe. You can also help raise funds for charities in the memory of your loved one or even set up a crowd-fund to help your family with the cost of the funeral. Guests who want to attend the funeral can also be kept up to date with the funeral arrangements and can order and send flowers using their online service.

## Probate service

They have a fixed-fee probate service, they will do everything to settle the estate taking on all the legal and financial responsibility with no extra costs even if circumstances change. They will release assets funds and property as soon as they are available and payment is taken at a later date without any deposits needed.



## Direct Cremation

Beyond offer a direct cremation service for anyone who would prefer a simple, respectful cremation separately from any ceremony. The perfect choice for a fuss free alternative to a tradition burial or cremation. This service can also be taken as a pre-paid plan.

## Funeral Finance

Beyond offer a direct cremation service for anyone. You are able to arrange finance to help pay for a funeral using their finance options to spread payments out over 12 to 48 months.

Beyond offer guides on all of the services we have listed here as well as other areas covering grief, loss and bereavement. They even have a community of after life helpers that may be able to guide you should you need this help.

The advice guides can be found at <https://beyond.life/help-centre/>

You can contact Beyond at:

Tel: **0800 044 9454**  
or visit the website at: **www.beyond.life**

Full reviews on Beyond services can be found on Trustpilot at:

[https://uk.trustpilot.com/review/beyond.life?utm\\_medium=trustbox&utm\\_source=Carousel](https://uk.trustpilot.com/review/beyond.life?utm_medium=trustbox&utm_source=Carousel)

# exposure

The combined magazine for the nuclear community

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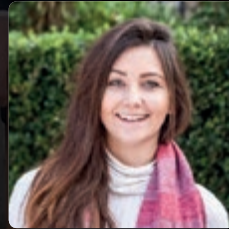
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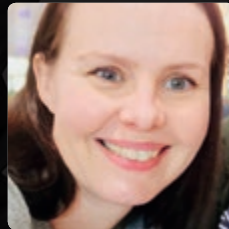
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