

exposure

November 2021

The combined magazine for the nuclear community

BNTVA National memorial project completed



Getting back to normal

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The long awaited memorial plaque project is now complete

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A report on the CHRC's work to provide educational information on Bioradiation to school children

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Contact Us

For advertising or any
other enquiries:

editor@exposure.press

Exposure
PO Box 8244
Castle Donington
DE74 2BY

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Foreword

Hello and welcome to a new edition of exposure magazine. At the end of the foreword from the last edition we stated that we hoped to see some of you this year, and thankfully it has actually happened.

The NCCF sent three of it's trustees and the editor over to the BNTVA conference at The Telford Hotel and Golf resort on the 9th to the 12th of August.

We have written an article 'Getting back to Normal' p04 on the event, with details on who the speakers were with photographs. Please look out for the BNTVA providing a more in depth report about their conference.

After such a long time since we were last able to attend an event we made up for it catching up with as many as possible with advice on how the to apply and what the NCCF could do to help.

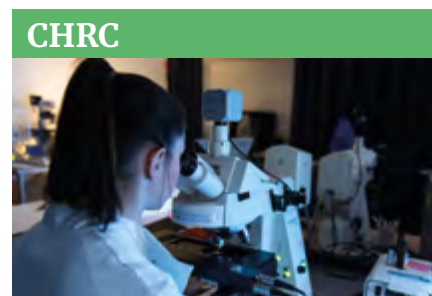
Going forwards, we hope this is the start of getting back to normal and seeing you all at events throughout the year.

Editor - Exposure

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Getting back to normal



Because of the events of the last couple of years this is the first BNTVA conference that the NCCF roadshow has attended since 2018, and we can say that it was good to see some old and now new members of the community for what seems a very long time.



David Taunt



The Very Reverend Nicholas Frayling

This years conference took place at the Telford Hotel, Spa & Golf Resort situated in Shropshire, close to the historic Ironbridge Gorge.

Checking into the conference began on August the 9th where attendees were able to view the BNTVA collections and archives, curated by the BNTVAs Wesley Perriman.

On the following day the BNTVA arranged a visit to RAF Cosford with a guided tour around the Cold War hangar. The tour was conducted by Pete Sharp who restored the Vickers Valiant XD818 which dropped the first H-Bomb at the Grapple tests. After lunch and a welcome from Wing Commander Mason, there was a talk by Sqn Ldr John Robinson (Ret), AFC, pilot and cloud sampler at Buffalo, Maralinga, and Grapple. Further talks were presented by Ian Sanders – Cold War Conversations Podcast, Squeaky Pedal, Pete Ashcroft – RAF Benevolent Fund, Dr Christoph Laucht – Swansea University and Michelle Harding BNTVA Secretary and Oral Historian.

Visiting charities to the conference set up their stands to the back and side of the main conference to enable anyone to visit and speak to us without causing interference to the speakers. Alongside the NCCF were the RAF Benevolent Fund and Deafblind UK.

The 11th of August saw that day of the conference itself which started just slightly later than scheduled, due to people really enjoying the very nice breakfast served by the hotel.

The conference opened with David Taunt addressing the attendees followed by a service by the Very Reverend Nicholas Frayling.

The first conference speaker via zoom was Dr Elizabeth Tynan of James Cook University, live from Australia, who's subject was 'The secret of Emu Field'. She was followed by Professor Robert (Bo) Jacobs of Hiroshima University, live from Japan via Zoom. Dr Rhona Anderson of Brunel University gave us an update on the CHRC and NCCF Project 'Genetic and Cytogenetic Assessment of British Veterans and their families'.



Dr Elizabeth Tynan, James Cooke University



Professor Bo Jacobs, Hiroshima City University



NCCF Trustees, Martin Blackburn, Will Long and Ian Hall



BNTVA Chair, Ceri McDade

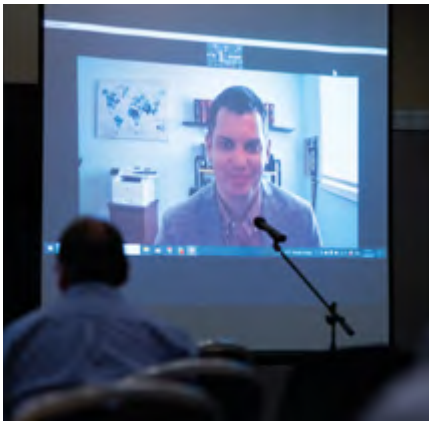


The packed conference room

Ceri McDade, BNTVA Chair, addressed the conference explaining the challenges they have faced over the last 18 months. She went on to explain changes that have happened within the organisation, and the aims and goals of the BNTVA going forwards. The conference showed real enthusiasm for the initiatives and aims Ceri presented. The trustees of the charity were introduced to the conference and their individual roles within the charity was explained. After this we all broke off for lunch.



David Taunt introducing BNTVA Trustees, Shelly Grigg, David McDade and John Lax



Dr Matthew Wiseman, Univeristy of Ottawa



Major Ian Razzell, VCHA



Dr Chris Hill, University of South Wales



Amy Prescott, Brunel University



Michael Wycherley, Deafblind UK



Dr Christoph Laucht, Swansea University

The next speakers to address conference were, Dr Matthew Wiseman of the University of Ottawa, who's subject was 'Indoctrinee Force at Maralinga'. He was followed by Major Ian Razzell from the Veterans Covenant Healthcare Alliance who are leading the way in improving veterans' care within the NHS.

An afternoon refreshment break was then followed by Dr Chris Hill of the University of South Wales who spoke on 'The Nuclear Imperialists: Britain and the End of Empire'.

Amy Prescott, a Doctoral Researcher at Brunel University, read from her Non-Fiction Stories of Nuclear Veterans, which was a very moving and fascinating account of the work she has done interviewing test veterans. The conference appreciated the way she presented the work via a short story format.

Amy was followed by Michael Wycherley of Deafblind UK, a Charity who help those who have both sight and hearing loss with practical as well as emotional support. Michael gave an insight into the issues that blind and deaf have to cope with and advice on how to get help for those who need it.

The last speaker of the day was Dr Christoph Laucht of Swansea University who spoke on 'Christmas Island within the Broader context of the test ban debate'.

At the end of the conference John Lax made a closing statement to all who attended and Ceri was presented with a bouquet of flowers for the work she has done for the BNTVA. The BNTVA Collections and Archives session started and we broke off before the start of the dinner.

That evening a Gala Dinner was held with the guest of honour being the Major of Telford Amrik Jhawar and his wife.



Mayor of Telford and Wrekin Amrik Jhawar

Dinner was followed by a raffle and entertainment by the Gershwin Gang followed by a disco.

Thankyou

The NCCF would like to thank the BNTVA for the invitation to attend the their conference.

It was good to be able to see so many familiar faces of which the majority of came over to speak to us to ask how we were and how pleased they were to see us again.

For those who were new to the conference we were able to chat about what the NCCF do and how we could help them.

Many asked after former BNTVA Chairman Jeff Liddiatt and Nigel Heaps and those messages of hello and well wishes were passed onto them. I can also add that even I as editor of exposure was recognised and greeted by many.

During the conference we spoke to people who we could potentially help. One particular beneficiary who spoke to us during the conference took delivery of a new folding mobility scooter, only last week.

We look forward to the next conference with the knowledge that if it goes as well as this one we will have helped more people.

Look out for a more in depth report on the conference in the BNTVA campaign magazine or online.

Editor exposure magazine



The Nuclear Community Charity Fund

BNTVA Memorial Refurbishment

The Memorial plaques installed at the National Memorial Arboretum.

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CWI Fund News

CWI Fund Technology driven improvements to our service

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What is a Trustee

Our report on what makes a good trustee and why charities need them.

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BNTVA National Memorial Project Completed

We are pleased to report that the long-awaited NCCF project at the National Memorial Arboretum has recently been completed.



Steve Bexon / BH Associates

The BNTVA memorial at the National Memorial Arboretum at Alrewas

During the creation of the additional wings to the memorial, the plaques that were originally fitted to wooden benches in front of the memorial were mounted on the rear of the memorial. The possibility of adding new plaques to commemorate BNTVA veterans who had passed created the opportunity for the NCCF to fund the fitting of such dedications.

The new plaques have now been installed by our mason from Natural Cut Stone, who are based in Calverton in Nottinghamshire.

Members within the British Nuclear community were offered the ability to purchase a plaque that the NCCF would fund placing on the memorial. The NCCF coordinated the plaque production to ensure that they were all created to a standard design and material thickness.

The pandemic, unfortunately, closed the NMA for long periods of time and this prevented our mason from fitting them.

Further problems arose following the first lockdown when the NMA announced that they were no longer allowing individual tributes to be placed on memorials and were pressing for people to purchase their own memorial plaques which are placed on stakes by the trees surrounding the memorial.

Following a lengthy period of negotiation, they agreed that because the original memorial extension plans included the facility for additional plaques they would honour the agreement and allow only the current set of plaques to be mounted.

The new plaques installed on the back of the central memorial stone

In memory of
Clive Barker
Nuclear Test Veteran
Christmas Island 1958

In memory
of all those
who have died
since the Tests

In Memory of
David Dingwall Burnett
1935-1987
Nuclear Test Veteran
Christmas Island 1958

In memory of
Dave Burton (REME)
Maralinga 1958

Presented by
North and West
Yorkshire Branch
of B.N.T.V.A.

In Loving Memory of
Thomas E.E. Clark
Nuclear Veteran
Operation Grapple
Christmas Island

In Memory Loving of
Bryan Cook
Nuclear Veteran
Christmas Island 1958

Presented by
Mrs Euronwy Williams
and
Welsh Branch of
B.N.T.V.A.

In Memory of
Clive Howard Ellis
Nuclear Veteran
Christmas Island 1958

In Memory of
John Davis Evans
Late of Pencader Carms
Nuclear Veteran
Christmas Island 1958

In Loving Memory of
John Henry Gellender
Born 1939 Sadly Died 1998
Nuclear Veteran
Christmas Island 1958

John Hall
Christmas Island 1958
June 1938 - June 1992
Lovingly Remembered

Derek Frank Heaps
Operation Grapple RAF
July 1933 - April 2012

In Memory of
Alan James Llett
Nuclear Veteran
Christmas Island 1958

In Loving Memory of
Peter Marchant
Nuclear Veteran
Christmas Island 1957/58

In loving memory of
David John Penney
76 Squadron Grapple X
12-11-33 to 11-08-10

JIMMY SCOTT
H Bomb Nuclear Veteran
Christmas Island 1958
24th August 1936
20th January 2018

In Memory of
John M. Smith
Nuclear Veteran
Christmas Island 1958

Gordon Allen Lowe
Royal Navy: HMS Narvik
Christmas Island 58/59
Missed always by
Wife Joan. Daughter Alison and
Grandchildren Ben,
Kyle and Shona
Gone from sight but
forever in our hearts

James Bernard Wood
Nuclear Veteran
Christmas Island 1957



The rear of BNTVA memorial showing the new plaques installed on the central stone

Once the approval for the plaques had cleared the NMA the NCCF approached the BNTVA for approval to mount them. The BNTVA are the owners of the memorial and their permission has to be gained for any alteration or addition. With a minor exception, the BNTVA approved the fitting of the plaques and we were finally in a position to instruct our mason to proceed.

Our stonemasons, Natural Cut Stone created the new central part of the memorial and at a later date added the 2 new wings. They were tasked with adding the plaques and liaising with the NMA to finalise all health and safety measures that have to be followed. This includes what vehicles and tools and materials that will be used during the installation. Any chemicals or materials used during the installation or cleaning the memorial need to be environmentally friendly and not pose any risk of damage to the porous stone of the memorial.

By the end of August the plaques were installed onto the memorial. We then visited the NMA to record the event.

A formal dedication was made at the memorial by the BNTVA on October the 5th just after National Atomic Veterans Awareness Day (NAVAD).

As we mentioned earlier in the article, the NMA now have a policy of not allowing any more personal tributes to be fixed to memorials. The plaques that have been installed on BNTVA memorial will be the last ones due to the current policy. We apologise to anyone who may be affected by this outcome.



The rear right hand stone showing the plaque installed on behalf of the Royal Engineers, unveiled by Derek Hickman on the 3rd of October 2018.

Contacting the NCCF

We thought we'd remind you of the best ways to contact the NCCF if you need to speak to us or need our help.



Email

office@thenccf.org

By far the quickest and easiest way to contact us is via email. Like most organisations our people are sitting in front of a computer for a good proportion of the day and should pick up emails straight away.

Please note

If your query is regarding exposure magazine or if you want to write an article then email: editor@exposure.press

If you wish to make an application to the Care Wellbeing and Inclusion Fund (CWIF) then visit: <https://bhlink.at/CWIFund>

Post

PO Box 8244
Castle Donington
DE74 2BY

Please use this address If you need to contact us via post, need to post us information, stories photos or other physical items.

Please note

As the trustees of the charity are all located nationwide and we don't have a central office, we use a PO box service that collects all of our mail. Our friendly postman then delivers the mail to one of our contractors. If for any reason you don't think we have responded to your mail, please call us.

Telephone

0115 8883442

The NCCF uses a dedicated Skype number for its main telephone line which means we are able to pick up calls no matter where we are in the country by just logging into Skype. The flexibility also means that calls can be checked by anyone who works with the charity. This also enables us to screen out unwanted calls such as sales or scam callers.

Important

This is a callback service, so if you call please clearly leave your **name, telephone number** and **quick message** as to the nature of your call. We are unable to get back to anyone who calls and doesn't leave us a message.



What is a Trustee and why do we need them?*

Trustees have independent control over, and legal responsibility for, a charity's management and administration. They play a very important role, almost always unpaid, in a sector that contributes significantly to the character and wellbeing of the country.

Trusteeship can be rewarding for many reasons - from a sense of making a difference to the charitable cause, to new experiences and relationships. It's also likely to be demanding of your time, skills, knowledge and abilities. Being aware of the duties and responsibilities covered in this guide will help you carry out your role in a way that not only serves your charity well but also gives you confidence that you will be complying with key requirements of the law.

More importantly, was a definition given by long time BNTVA activist and Trustee:



The job title is the key, Trustee, it starts with 'Trust' and that is the be-all and end-all.

Bob Smith

What Bob was saying was that Trustees are people trusted by the beneficiaries of a charity to operate the charity within its aims and objectives. People who work together with trust in each other. People who are trusted by society to run the charity within the legal framework of the country.

If a charity has someone working within who breaches these bonds of trust then the organisation becomes damaged, this is a common issue amongst many charities. The NCCF has undertaken several activities to minimise the potential for such a situation to arise in the future, indeed our regular checks and balances serve to provide early indicators should a trustee not be achieving their expected level of trust and responsibility. This enables the charity to work with the person to resolve issues and maintain the high level of service we currently enjoy.

NCCF Trustees Now

Trustees in the NCCF currently enjoy a supported journey into trusteeship. We have developed a training programme to ensure all new trustees are equipped with the knowledge, understanding, skills, attitude and behaviour essential to their role.

All trustees are provided with secure laptops which access the NCCF Intranet system 'BeHub'. The system is a complete communication and interaction hub for the charity. Since the early days of the pandemic, all our activity has been conducted on the BeHub system with Trustees, Contractors and Business Partners all taking to the online world.

As you will read in other articles, BH Associates have been very supportive in developing tools and integrations which have facilitated our evolution into a fully functioning environmentally friendly, forward-facing organisation providing comprehensive and expanding service to our beneficiaries.

We have not abandoned physical meetings and look to get together as soon as it is safe to do so. The benefit of camaraderie and personal contact enhance inclusion and creativity within the organisation. Because the day to day work is now conducted online we have more free time to devote to enhancing these facets.

The total time commitment of the average NCCF trustee is two to three hours a month. Some trustees undertake roles like managing the finances or running specific projects and they give more time to the charity.

Aside from the basic training and guidance given to every trustee, there is a wealth of training and support available within the charity sector and the NCCF is keen to support and sponsor trustees who wish to explore and benefit from this type of developmental activity.

New Trustees

The NCCF needs to recruit new trustees for it to be able to continue its charitable functions. Being funded for an initial 15 years and the prospect of gaining further funding to both increase activity scope and range means that the organisation is on it for the long haul. To make that journey we need new input from new trustees.

We have a very good representation of trustees from within the beneficiary pool which is approved by the Charity Commission however we do need to recruit people with broader experience or even people keen to develop such abilities and knowledge within the charity sector.

* From the Charity Commission Guide 'The Essential Trustee':



If you are interested or know of someone who may like to become a trustee please get in contact with us.

Basic Conditions of Trusteeship

- You must be at least 16 years old to be a trustee of the NCCF CIO
- You must be properly appointed following the procedures and any restrictions in the charity's governing document
- The initial appointment is for three years subject to review following the initial twelve months.

You must not act as a trustee if you are disqualified unless authorised to do so by a waiver from the Charities Commission. The reasons for disqualification are shown in the disqualifying reasons table and include:

- Being bankrupt (undischarged) or having an individual voluntary arrangement (IVA)
- Having an unspent conviction for certain offences (including any that involve dishonesty or deception)
- Being on the sex offenders' register

The full guidance can be found at:

<https://www.gov.uk/guidance/automatic-disqualification-rules-for-charity-trustees-and-charity-senior-positions>

Contact the NCCF via

Email: office@thenccf.org
Telephone: **0115 888 3442**

Or write to:

NCCF
PO Box 8244
Castle Donington
DE74 2BY

CWI Fund News

CWI Fund Technology Driven Improvements to Our Service

Our service providers, BH Associates have made great use of the additional time created by the coronavirus restrictions by developing several internet-enabled applications that are set to greatly improve the service we give to our beneficiaries.

Amazing Applications!

Filling in application forms can be a daunting task and we have already partnered with the BNTVA to train some of their volunteers in the application system and form completion. This has enabled them to offer direct assistance to applicants. Building on this, BH Associates developed an app that enables a volunteer to record all the details required for an application, including scans of identity evidence and images illustrating situations. This data is directly compiled on our secure NCCF server and is then processed by the applications management team.

The direct input of data means that our application managers can get an application in front of a grant panel on the same day that it is made!

Independent Living Assessment Improvements

The breadth and quality of the Independent Living Assessments that we offer to many applicants who are unsure of their needs have also received a major boost. BH Associates have developed an ILA assessment tool that takes the knowledge and skills developed over the past four years to produce a guided assessment process covering all areas of an applicant's situation.

The pad-based tool not only controls the structure of the assessment, ensuring every area is methodically reviewed, it also contains a selectable bank of common observations allowing the assessor to quickly define a situation in a standardised format. Images can also be taken using the pads for inclusion within the report.

In providing this structured support the assessor is given more time during the assessment to discuss, explore and understand the needs of the applicant. The data generated by the tool creates a standardised ILA report which is then reviewed by the assessor to add any additional comments and observations.

The final task of sourcing goods and services to address identified issues have also been addressed within the new system. Building on our established links to key suppliers we are working on including the full range of applicable goods and services into a comprehensive catalogue. This will then enable the assessor to directly select measures which will then be included in the report along with full supplier and costing details.

The final ILA report is then presented to a grant panel giving them a complete picture of the situation, needs, proposed solution options and likely costings in a familiar format they can use to consider the application.

Even More Advances

We have been running grant panels on a remote, as required basis for some years now. Working under our drive for continuous improvement we have been able to take advantage of some of the new features made available within the Google Workspaces system. The slower 'Forum' system previously used did not have an automated notification feature, this meant that it was quite common for new comments from panel members not to be seen by other members unless they directly checked each application conversation in the forum.

We have now adopted a discussion system that actually sits within the grant panel members email facility, this presents the user with new comment notifications across all live grant panels and NCCF Boardroom discussions as soon as they log in.

My CWI Fund

The NCCF want to reach out to the British Nuclear Community to let them and their carers know, that we are here and ready to help with independent living adaptations, respite care and innovative measures to improve wellbeing.

If you are resident in the UK and are a Veteran of the British Nuclear Test Programme or you are a veterans Spouse, Child, Grandchild or Great-Grandchild and would like to know what help could be available to you? Please contact us.

Make your application today:

Online: <https://bhlink.at/CWIFund>
Email: office@thenccf.org
Telephone: 0115 888 3442

Or write to:
NCCF
PO Box 8244
Castle Donington
DE74 2BY



Just some of the things the CWI Fund can help you

Wetrooms, Stairlifts, Mobility Scooters, Rise Recliner Chairs, Domestic Adaptations, Respite Care Breaks, Profiling Beds and Orthopaedic Mattress's are just some of the types of things we can provide to alleviate suffering.



Wealth Cap Review Opens Support to Many More Beneficiaries

In line with current Government levels, the cap for support involving people in receipt of Old Age Pension has now been raised from £10 to £16k.

The fund will still consider applications from people who are above this wealth cap, dependent on ring-fencing of the additional monies for essential commitments such as funeral costs. The cap for people below pension age remains at £6k. We anticipate this will yield a significant increase in the number of people the fund can help as we recover from the pandemic and life returns to normal.

The Easy Way To Access CWI Fund Help

The NCCF has launched a pilot scheme to help members of the British Nuclear Survivor Community access support from their Care Wellbeing and Inclusion Fund.

Any Nuclear Veteran, Spouse or offspring can simply pick up the phone or send an email and ask for 'Help'. The only condition is that your disposable income and savings are under the Wealth Cap.

No paperwork needs to be completed as we will either arrange a visit or telephone consultation to discuss what could be done for you. We will still require information on your savings, income and expenditure but this will all be discussed in the review.

During the review, we will also discuss what kind of support the NCCF could give you, very often people are unsure of all the things available so we will guide you through. If we feel an Independent Living Assessment or Occupational Therapist Assessment is required we will also discuss this with you.

It's Not All About Financial Help

Over the years running the CWI Fund we have encountered several beneficiaries who simply needed help accessing support from other organisations.

We have written to Healthcare providers, Councils and Charities on behalf of our community members, supporting their access to services and signposting them to the best places to address their needs.

We have now started keeping a record of this kind of assistance, we just used to get on with it in the past but it does represent the additional support the NCCF gives to its beneficiaries and so we have now introduced a basic record-keeping system that will facilitate the tracking and review of this activity.

If you are having issues accessing public services or dealing with bureaucracy please get in touch as we may be able to help.



CHRC

Centre for Health Effects of Radiological and Chemical Agents

**Exposure Editorial
Autumn 2021**

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

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CHRC and Secondary Schools' education

A report on the CHRC's work to provide educational information on Bioradiation to school children

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Exposure Editorial

Autumn 2021



Summer and sunshine appeared to be in short supply this year although with vaccinations, boosters and, restrictions lifted, there is a lot to be positive about. The University has just started in its new academic year, welcoming back national and international students to begin or resume their studies. This year, it is not only the freshers who are experiencing our campus for the first time, but 2nd year students who spent much of last year learning remotely. So, we have a vibrant buzz of fresh faces, all keen to see what living and working at Brunel has to offer and embark on this next phase of their education.

Our commitment to education spans all higher education levels from undergraduate through to PhD Doctoral Researchers, of whom many spend time working with academics and researchers associated with CHRC, to generate and share knowledge on CHRCs projects. We have since expanded this to include working with local Schools to showcase CHRCs research and to develop learning content with the aim of embedding this into the secondary school children's curriculum. In this Edition of Exposure, the article titled 'CHRC and secondary schools' education', describes the successful pilot of our latest collaboration with the NCCF and Brunel STEM Centre; titled STEM Bioradiation module: 'Military Veterans for nuclear testing programmes'. The pilot programme worked with 14-16-year-old pupils over a period of 6 weeks and provided opportunities for them to learn about the historical aspects and personal stories of the nuclear testing programme, the potential adverse effects of radiation and, to get a flavour of CHRCs current research. As the article describes, the pilot was a huge success with both the School and the pupils engaged in the project and in their development of valuable knowledge and skills. Our team aims to build on this pilot and deliver the programme to more schools over the coming year and years to come.

In this edition of Exposure, we continue our series of lay summaries which aim to present published scientific research in an accessible format for the non-scientist. The paper summarised is by Yeager and co-authors which was published in the peer-reviewed scientific Journal Science in 2021. The paper describes a major research study carried out by an international team of researchers who examined the DNA of families whose parents were exposed to radiation, as a consequence of the Chernobyl disaster. Their aim was to examine if this exposure resulted in mutations that were detectable in the children's DNA. As outlined on our project pages Genetic and Cytogenetic <https://chrc4veterans.uk/research/genetic-cytogenetic/> this study of Chernobyl families is similar in design to part of the work being undertaken at CHRC. You can see more details of all our projects, their progress and how they relate to each other by reading our 3rd Annual Report <https://chrc4veterans.uk/wp-content/uploads/2020/12/CHRC-3rd-Annual-Report.pdf>

We also include, in this Edition, a short report by Amy Prescott (doctoral researcher, CHRC) who attended this year's BNTVA reunion event in Telford. Amy was delighted to see many of those she has worked with through her studies and share part of her work. We look forward to sharing more contributions of CHRCs research upon completion of studies and subsequent peer-review for publication.

I would like to finish by highlighting our 'Basic Information' series which are available as either flip-books or interactive versions. Both are available through our Knowledge Hub page <https://chrc4veterans.uk/knowledge-hub/> on our website www.chrc4veterans.uk and also available to order as hard copies. Thank you again to all our volunteers who have contributed to all of our projects. CHRC staff are contactable via email at CHRC@brunel.ac.uk.

Dr Rhona Anderson, Director, CHRC

BNTVA Reunion event by Amy Prescott (CHRC, doctoral researcher)

It was a pleasure to be invited to the BNTVA reunion event which took place over 9-12th August 2021 – especially since the COVID-19 pandemic had made sure no in-person events could take place since early 2020.



Steve Baxton / BH Associates

Amy Prescott of the CHRC at the BNTVA conference

On the first day of being in Telford, I went along to RAF Museum Cosford for the talks being given by John Robinson (Canberra pilot and cloud sampler), Ian Sanders (host of Cold War Conversations podcast), Squeaky Pedal (launch of veterans' stories film), and Dr Christoph Laucht from Swansea University ('Events prior to British nuclear testing c. 1945-52).

On day 2 of the reunion, a well-organised conference with a range of speakers was structured to run from 9.30-5.30pm. This included Dr Elizabeth Tynan (James Cooke University), Prof. Robert (Bo) Jacobs (Hiroshima City University), Dr. Matthew Wiseman (University of Waterloo, Canada), Dr. Chris Hill (University of South

Wales), and Dr Christoph Laucht. Dr Rhona Anderson also provided the conference audience with a much-anticipated overview of the current projects being undertaken at the CHRC. This reunion was also an exciting opportunity to present the findings of my doctoral study for the first time.

My presentation, "Telling the stories of British Nuclear Test Veterans" gave an overview of the objectives, methods and understanding of the storytelling process. I then gave a reading of 'An Unlikely Meeting'; this story revolves around two BNTVs meeting each other for the first time by coincidence in a coffee shop.

It was a wonderful chance to translate the work I had done and test the feedback from the audience - particularly since some were participants of mine!

I would like to thank the BNTVA for inviting and hosting me, as well as the CHRC and NCCF for their ongoing support.

Amy Prescott

A lay summary of:

Lack of transgenerational effects of ionizing radiation exposure from the Chernobyl accident.

Yeager M, et al., (2021) Lack of transgenerational effects of ionizing radiation exposure from the Chernobyl accident. *Science* 372 (6543), 725-729.

Here we present a lay summary of a recently published study by Yeager and co-authors. The summary outlines the key research questions, how the researchers went about addressing those questions and, the key findings of the work. You can access more lay summaries and find supporting information on our website Knowledge Hub – Centre for Health Effects of Radiological and Chemical Agents (chrc4veterans.uk).

What were the research questions?

The researchers were interested in a unique form of inherited DNA variation, which arises due to random DNA mutations in the sperm (father) or oocytes (mother) cells. The detection of these newly arising, or de novo, mutations (DNM) has only recently become possible by whole genome sequence techniques. It is thought that between 50 and 100 de novo mutations arise in each person between each generation. The age of the father at the time of conception is known to increase this number and, although damaging agents such as ionising radiation will increase the mutation rate in all exposed cells, increased levels of newly arising DNMs in the children of exposed parents has yet to be observed in studies carried out to date.

The research team wanted to find out if the children of parents exposed to ionising radiation from the 1986 Chernobyl accident had increased levels of DNMs which could be associated with the radiation dose received by their parents. The authors also sought to identify different patterns, or types, of DNM previously identified as being associated with radiation exposure.

How was the scientific problem approached?

The scientists took blood samples from parents who were known to have been exposed either in their role as clean-up workers or, as residents within a defined zone of the Chernobyl site. Estimates of the dose received was available for all those recruited into the study. Newly arising mutations in the children were identified by comparing their DNA with that of their parents.

What did the research involve?

The group being studied was composed of 130 adult children from 105 mother-father pairs, where at least one parent was exposed to radiation as a result of the accident. No control group was included in this study; however, the authors did compare their observations to control populations which have been published elsewhere.

DNA from the blood of each participant was analysed using a technique called Illumina paired-end whole genome sequencing. This technique enables the amount of newly arising mutations and, the type of mutations, to be detected at a high resolution.

Additional techniques were also carried out including measuring the length of telomeres in blood cells (special structures on the ends of chromosomes) of adult children. Telomere length is known to decrease as people get older. Telomere length is also thought to be a useful measure of general health.

What did they find?

The authors found no evidence for any increase in newly arising mutations (or DNM) in the children of Chernobyl exposed parents. Specifically, they report no evidence of a relationship between the total number of DNMs and the dose of radiation estimated to have been received by either, or both, of their parents. They also found no evidence that any individual type of DNMs was associated with parental radiation dose and instead show that the amount and type of DNM was comparable to that reported in the general population. They make an estimate that, at most, less than one newly arising mutation may arise per 100 mGy (0.1 Gy) of paternal or maternal exposure. They did however observe, as expected, an increase in DNMs with increasing age of the parents at the time of conception.



The Chernobyl nuclear power plant new safe containment structure viewed from roof of an apartment block in Pripjat town

The results for the telomere length measurements found that older (adult) children had shorter telomere lengths, as expected and, that a possible association did exist between radiation exposure in the mother and reduced telomere length in their adult child, although this was not seen in children whose fathers were exposed.

How did the researchers interpret their results?

The main message from the authors is that their study does not provide support for any transgenerational effect of ionizing radiation on germline DNA in humans. They make the point that this is reassuring to families, however, highlight that further work is necessary to understand if higher doses delivered in a single exposure closer to the time of conception, rather than chronic, lower doses over time as received by those in this study, similarly show no increase in DNMs.

They also highlight that the technique used enables high levels of detection of DNA mutations, meaning that if such effects on the human germline DNA do occur, they are either uncommon or, occur at levels which are not detectable.

Who did this research?

This work was done by an international team of researchers from Institutions in the USA; National Cancer Institute, Frederick National Laboratory for Cancer Research, SymbioSeq, American Museum of Natural History, Broad Institute of Harvard and Massachusetts Institute of Technology, Massachusetts General Hospital and Harvard Medical School., Taiwan; Academia Sinica., Brazil; University of Sao Paulo., Ukraine; National Research Centre for Radiation Medicine., Japan; Radiation Effects Research Foundation., Russia; Burnasyan Federal Medical and Biophysical Centre.

Key messages

- No evidence for any increase in the amount, or type, of newly arising DNA mutations in the children of Chernobyl exposed parents
- The amount and type of DNM is comparable to those reported in the general population
- The study does not provide support for any transgenerational effect of ionizing radiation on germline DNA in humans.

Full Reference:

Yeager M, Machiela MJ, Kothiyal P, Dean M, Bodelon C, Suman S, Wang M, Mirabello L, Nelson CW, Zhou W, Palmer C, Ballew B, Colli L, Freedman ND, Dagnall C, Hutchinson A, Vij V, Maruvka Y, Hatch M, Illienko I, Belayev Y, Nakamura N, Chumak V, Bakhanova E, Belyi D, Kryuchkov V, Golovanov I, Gudzenko N, Cahoon EK, Albert P, Drozdovitch V, Little MP, Mabuchi K, Stewart C, Getz G, Bazyka D, Berrington A, Chanock SJ. (2021) Lack of transgenerational effects of ionizing radiation exposure from the Chernobyl accident. *Science* 372 (6543), 725-729.

CHRC and secondary schools' education

As part of CHRC's ongoing work to provide educational information to school children, CHRC recently worked in partnership the NCCF and staff from the Brunel STEM (Science, Technology, Engineering and Maths) Centre to deliver the STEM Bioradiation module titled: 'Military Veterans for nuclear testing programmes.

The project, aimed for secondary school students aged 14-16, involves pupils working in groups to research information on the history of nuclear testing, to learn about radiation, its effects on cells of the body, and how such effects may influence health. The study module also gives students a glimpse of the scientific methods used to generate information and, the role of different media in communicating scientific information.

The pilot programme took place in late summer with year 9.1 Science students of Khalsa Secondary Academy in Buckinghamshire, over a period of 6 weeks. The pupils and teachers were supported online and, in the classroom, on a weekly basis by the STEM Ambassadors Justin Dankwa and Jade Stephens, both of whom are CHRC Doctoral Researchers and, Maryam Al-Badry, the STEM Ambassador and co-ordinator of this pilot project. The pupils were supplied an information booklet which contained introductory information on the history of nuclear testing, a selection of veterans' stories (provided by the NCCF), information on the scientific aspects of ionising radiation and potential health effects, examples of public health programmes and, links to enable further investigation. Feedback from the teaching sessions highlighted the students to be extremely engaged with the project; discussing their selected veteran stories, nuclear testing and, the effect of radiation and DNA.

The last session of the training module was a celebratory day, not least because it coincided with the Schools sports day and the end of the teaching term, but also with our presentation day where each 'team' showcased their posters and presentations. Judging this was Jeff Liddiatt (Honorary Life President, NCCF), Rhona Anderson, Julie Whittaker, Maryam Al-Badry with input from the teaching staff. There were some outstanding presentations and all students received a certificate. The NCCF generously presented the top three groups with a trophy for Most creative, Best Communication and Best Research; trophy's which according to the School, will be proudly displayed.



Dr Rhona Anderson, the students and Mr Chris Wright of Khalsa Secondary Academy

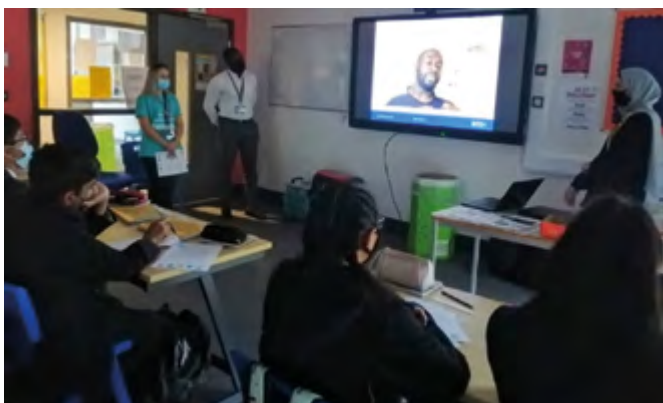


Image showing STEM ambassadors in one of the in-class training sessions.

Mr Chris Wright, Head teacher of Science at the Khalsa Secondary Academy wrote after the presentation day

"After 15 months of lockdown it was a pleasure to have STEM Team Brunel come into the school (both online and face to face) to deliver their Bioradiation Project. The enthusiasm of Team Brunel was excellent and our students loved the learning; researching the veteran history, the biology and choosing a topic to present both orally and through a poster. My Year 9 top set class loved the project and importantly they learnt lots of new skills. I thoroughly recommend it - a big thanks to STEM Team Brunel."



All students received a certificate for the project with the top three groups were all presented with a Trophy for, Most Creative, Best Communication and Best Research. The NCCF would also like to thank Brunel Engraving <https://www.brunelengraving.co.uk/> for their efficient service producing the wonderful trophies for us, and thanks to BH Associates for sponsoring the trophies.

CHRC Knowlegde Hub Lay Summaries

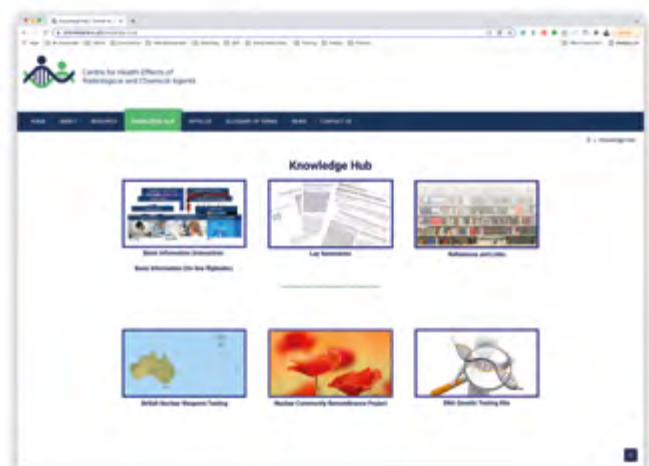
Scientists share their findings in the scientific community by publishing articles in journals, which are evaluated by other scientists prior to publication in a process called peer review.

The CHRC has written lay summaries of peer reviewed journal articles covering scientific topics that are relevant to our work, to share with you the key evidence produced by their research in an accessible manner.

The lay summaries are located under the following topics.

- Raditation Cytongenetics
- Reconstruction Dosimetry
- Germline Mutations
- Trinity Test Studies

Please visit <https://chrc4veterans.uk/lay-summaries/>



My Journey from car driver to bus driver by Martin Blackburn

Who would have thought that obtaining a provisional licence to drive a bus could be so difficult? Well for me, it was much harder than it needed to be.

All of my working life, I was told that I would not pass a medical to be able to drive heavy goods vehicles or buses due to poor vision in my left eye. I was born with a cataract on my left eye and after 2 pretty major operations as a child to correct the vision, these did not work. Cataract surgery in the 70's was nothing like it is today. The cataract, incidentally, was due to dad's service on Christmas Island.

So, I go through life always wanting to drive lorries but never being able to drive anything above 7.5 ton, as this was automatically added when I passed my car test (grandfather rights). Likewise with the Public Service Vehicle (PCV), I was told I would not pass the eye test.

In April 2021, I was looking through the job adverts on Indeed.com, trying to find something better than chasing around the country in battered tipper vans. I came across an advert to train as a bus driver. I read it very carefully and all it said I needed was a car licence. I got in touch with the company to ask the question about eyesight. At first, the training manager didn't know the rules for eyesight but said she would check with their own company doctor and let me know. She rang me back 10 minutes later. Good news, apparently, the rules changed around 10 years ago.

Instead of being able to read a chart with each individual eye, you only have to be able to read the chart fully with the good eye and the top letter with the bad eye. Brilliant—I can do. I was told to pop down the following morning to fill in the forms, have a short interview and have the medical.

I went and saw the doctor and I got through the eye test initially, but needed to go to the optician to have the field vision checked. Also they wanted my diabetes sugar readings. Again, I got through the opticians tests, but the diabetes readings were taking longer to obtain. One of the tablets I was on caused an issue that meant I needed to test my bloods regularly. It was actually easier to change the tablet which my doctor did. The whole medical procedures took around 2 months to complete, but I was finally signed off in early June.

I sent all the forms off to the DVLA. This is where the real waiting game started. Due to Covid-19 and lock downs, there were short staffing at the DVLA. Nowadays, thanks to modern technology, you can check online, the status of your driving licence, so I was checking 4 or 5 times a day to see if anything had changed on my licence, i.e. had the provisional entitlement been added. Short answer was NO. 6 weeks this went on for. It even got to me contacting my own MP to chase it up—after all, the DVLA are a government department.

He did do well and chased the matter up and it did seem strange how, within a few days of contacting him, I received my licence back with the medical form and 9 questions left unanswered. I could not believe that the doctor had missed out 9 tick box questions. So the form had to go back to the doctor then back to the DVLA.

A further 4 weeks down the line, and constant checking for changes and contacting the training manager. I was pulling my hair out. We have a shortage of drivers, both PCV and HGV and people are waiting for licences to be updated.

Then, one Wednesday morning, (8am to be precise) early September, I received a text message from the training manager. "Morning Martin, can you call me as soon as you can please". Why she just didn't ring is still beyond me. Anyway, I rang her straight away. My provisional licence had been granted. Hooray, I am finally on my way to becoming a bus driver.

First day was an induction. It was the second day before I actually got sat in the driving seat of a bus. An old battered single decker that looked like it had had its fair share of learners in it. It was an old S reg (about 1998/1999) so had definitely seen better days. There were 5 of us on training and we were thrown in the deep end—reversing.



NCCF Trustee Martin Blackburn - learning to drive a bus this summer

We had to do an 'S' type reverse between some cones. I opted to go last, because I was so nervous, I was literally shaking. However, it was actually easier than I thought.

The second day of actual driving saw us out on the open road. After this day, 5 became 3. 2 quit, said they couldn't hack it. This was good for us as we got more one to one training. One of the instructors told us on the induction that there would only be 2 left by the end of the course, so that meant 3 were to quit. I didn't think my name was in those 3 but in his mind it was. He told the training manager, that if I was still there by the end of week one, he would show his backside.

The training was not easy and if anyone says driving a bus is easy, they are very wrong. It was stressful, mentally draining and was like having a sergeant major screaming at you all day. There were a number of tests to pass along the way which you had to pass to progress to the next stage. Most of these were to obtain the driver certificate of professional competences (CPC) qualification.

I breezed through my theory test dropping only 9 points and the case study test dropping only 3 points. However the hazard perception test was proving beyond impossible for me. I failed it twice. This was extremely worrying as the company only give you 2 attempts at each test. I got very lucky.

They let me have a third and final attempt because they could see I could drive but getting through this computer test was a problem. I was given lots of advice to pass this test and on the third time, I passed. Fantastic, I can now do my practical driving test.

On the day of my test, I was listed as last driver as the other 2 candidates came from the Midlands and had further to travel home. I must say at this point that this depot is the training centre for the country so they get new trainees from all over the country every week. My test came.



A line-up of Diamond buses - we suspect Martin would be driving the Number 36.

The first part of the test is the reverse that I was quaking about on day 2. You have to pass this to continue your test. I did an almost text book perfect manoeuvre. Once out on the road, the examiner stops you at random stages to carry out various tasks. The first one being a standard stop at the side of the kerb. I grazed along the kerb with the tyre. In my own mind, that was it, I had failed, so I carried on driving the rest of the test as though I had failed and drove the best I had ever done in training. Chatting to the examiner, having a laugh, basically totally relaxed.

We got back to the test centre, which is the depot and I was told to switch everything off and take a seat at the table on the bus. Paul, the examiner sat there adding his numbers up while sweat pumped out of my head.....

“OK, that is the end of the test and I am.....
Pleased to tell you that you have passed”!!!!!!

Wow, I could not believe it. Passed with 8 minor faults (you’re allowed 15). In reality, counting working days and not weekends or the bank holiday or the day they sent me home sick, I had become a bus driver in 10 DAYS! I would start route training the next day for 6 days. Learn 23 routes in 6 days, now that wasn’t easy. After the route training I was sent out with a buddy driver for 3 days to get to grips with the real world of picking up and setting down passengers. Then, I was let loose on my own.

It wasn’t easy learning to drive a bus, but I’ve done it, and I love it. It would be easy with out passengers though and the dreaded school run. If you’re ever in Bolton, be sure to catch a Diamond bus. You might get lucky and have me transporting you. But please don’t ask me “HOW MUCH TO OLDHAM”

By the way.....I’m still waiting for the instructor to show his backside.



A fellow test candidate

Why our Home lifts are the new stair lift...

We have all come across the awkward stairlift in the home (for those that struggle with mobility, whether that is through an ongoing disability, old age, or illness) stairlifts can be space intrusive on staircases and landings, they are also noisy and slow moving between floors. Through the floor homelifts are now becoming the chosen alternative to the more commonplace stairlift and here are five reasons why.

1) They are faster... Home lifts are way faster when compared to stairlifts. A through the floor lift can take you to the floor above or below in under 30 seconds and they are so easy to use!

2) More Reliable... A homelift is more reliable than stairlifts which often breakdown, leaving homeowners 'trapped' upstairs or confined to the downstairs until the problem is fixed.

3) Pleasing to the eye... Surprisingly, Home Lifts do not take up much space (many models are less than 1m²) nor do they spoil the aesthetic of your home like a stairlift can.

4) More than one person... Our Home Lifts also allow for more than one person to travel at one time, meaning that unlike a stairlift, a carer can, if required, accompany the user at all times.



5) Wheelchairs and walking aids...

Our Home Lifts are suitable for wheelchair users and users of walking frames and aids. Bespoke HomeLifts can be adapted with seats and handrails to help with any access needs, always ensuring safety.



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If you would like more information, to discuss the possibilities and maybe meet with one of our nationwide surveyors for a no-obligation free quote then please call Bespoke Home lifts on 01386 47179

exposure

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NCCF

office@thenccf.org
PO Box 8244
Castle Donington
DE74 2BY

CHRC

chrc@brunel.ac.uk
CHRC
Brunel University London
Uxbridge
UB8 3PH

Exposure

For advertising or any other
enquiries
editor@exposure.press

Exposure
PO Box 8244
Castle Donington
DE74 2BY

Advisors

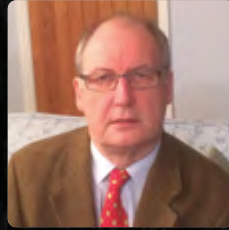
Projects Manager

Nigel Heaps
✉ nheaps@thenccf.org
✉ office@thenccf.org

Projects Manager

Stephen Bexon
✉ sbexon@thenccf.org
✉ office@thenccf.org

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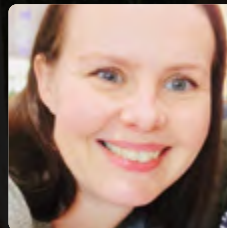
Trustee
Martin Blackburn
✉ mblackburn@thenccf.org



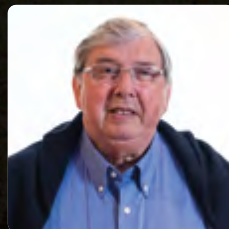
Trustee
Katy Morris
✉ kmorris@thenccf.org



Trustee
William Long
✉ wlong@thenccf.org



Trustee
Victoria James
✉ vjames@thenccf.org



Honorary Life President
Jeff Liddiatt
✉ jliddiatt@thenccf.org

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information contact:

office@thenccf.org

Or write to

**The NCCF
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