Cardiff University / Prifysgol Caerdydd

School of Medicine
Ysgol Meddygaeth

Public Engagement and Involvement with Research **Case Study**

Name: Dr Alan Parker

Job Role: Senior Lecturer

Division: Cancer and Genetics

The Research:

Research in Alan's lab focusses on developing so called "oncolytic viruses" to fight cancer. As evolved pathogens, viruses are exceptional at infecting cells, replicating and spreading to surrounding cells. In healthy cells, this process causes disease. Sadly, viruses haven't evolved to selectively infect cancer cells, so Alan's lab studies how viruses interact with healthy cells to cause disease. By understanding this at the molecular level, the team can refine the virus and generate "designer viruses" that only infect cancer cells, where they replicate, producing more virus, eventually bursting infected cells, spreading thousands of progeny virus to infect surrounding cancer cells. These "designer viruses" can be further modified to overexpress anti-cancer medicines, including immunotherapies or antibodies.

The Engagement:

The key 'publics': School age children, general public.

The types of engagement: Informing and educating school children and the general public about my role as a scientist and the latest developments in gene therapy.

Alan is a registered STEMNet ambassador and regularly attends local schools to engage pupils in gene therapy.

db.stemnet.org.uk

Alan has many roles with the British Society for Gene and Cell Therapy including organising the Society's Annual Public Engagement Day. This is a free, one-day interactive event providing the opportunity to discuss and debate cutting edge research with scientists, patients, research students and clinicians/nurses, and to think about the impact that this research has on society and individuals.

www.bsgct.org

Alan is a keen blogger and regularly writes lay articles for the BSGCT and educational resources for the American Society of Gene and Cell Therapy.

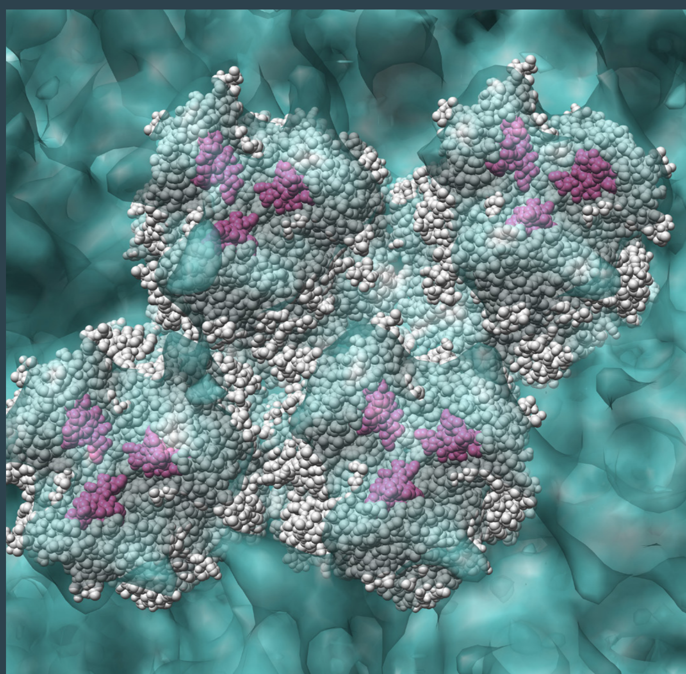
www.asgct.org

Alan has participated in the local After Hours events held at Techniquest, the UK's longest-established science centre, for adults only, taking along his 'Build a Virus' activity to engage individuals with his research. Alan also regularly participates in patient related events organised by Cancer Research.

The Motivation:

Alan is passionate about the need to engage with the lay community to convey his science and really enjoys it. "I work in an area of science which has an enormous impact on today's society. Almost everyone you meet has been touched by cancer. When I discuss using viruses to attack cancer, I'm always struck by the questions posed, which in turn do inform my research going forward."

In today's funding climate, it is becoming increasingly important to engage the public with research not only for accountability reasons but to maximise the impact of research. Moving forward, Alan wishes to inject direct public/patient involvement into the life cycle of his future research projects and is keen to access the existing networks of people keen to get involved in research.



The Professional Development:

Through his engagement work Alan has learnt the importance of communicating his research in a way which is understandable and accessible to the general public and young people.

"For me, I find the more exposure that I can give to my research the better. I feel I have a responsibility to make people understand my work and allow them the opportunity to properly judge the impact of my work."

Alan believes that to undertake quality engaged research, you must possess good communication skills, be an active listener and understand your audience and why they have chosen to engage with you.

The Learning:

Alan has learnt every time he has carried out an engagement activity. "I find people are genuinely interested in what I do. In the classroom, children can ask very left field questions which raise important issues for my research. Patients also ask really important questions which maintains your focus on making the outcomes of your research real and of benefit to patients in the future."

Alan's Top tips:

"Strip the science back to the basics and find a really good analogy!"

Alan often compares his complex research to the children's film 'How to Train Your Dragon'.

"At the beginning of the film the dragon comes across as being destructive and deadly, but one of the characters then trains the dragon to be a force for great good."

"It's very similar to viruses. The viruses we use in their original form can cause a cough or cold.

"We want to understand how the virus infects cells so we can engineer or 'train' the virus to be a force for good by identifying and killing cancer cells."

Watch Alan talk about his research here:
www.youtube.com/watch?v=DDQPpZHZbo0&t=12s

Chat to Alan further about his experiences:
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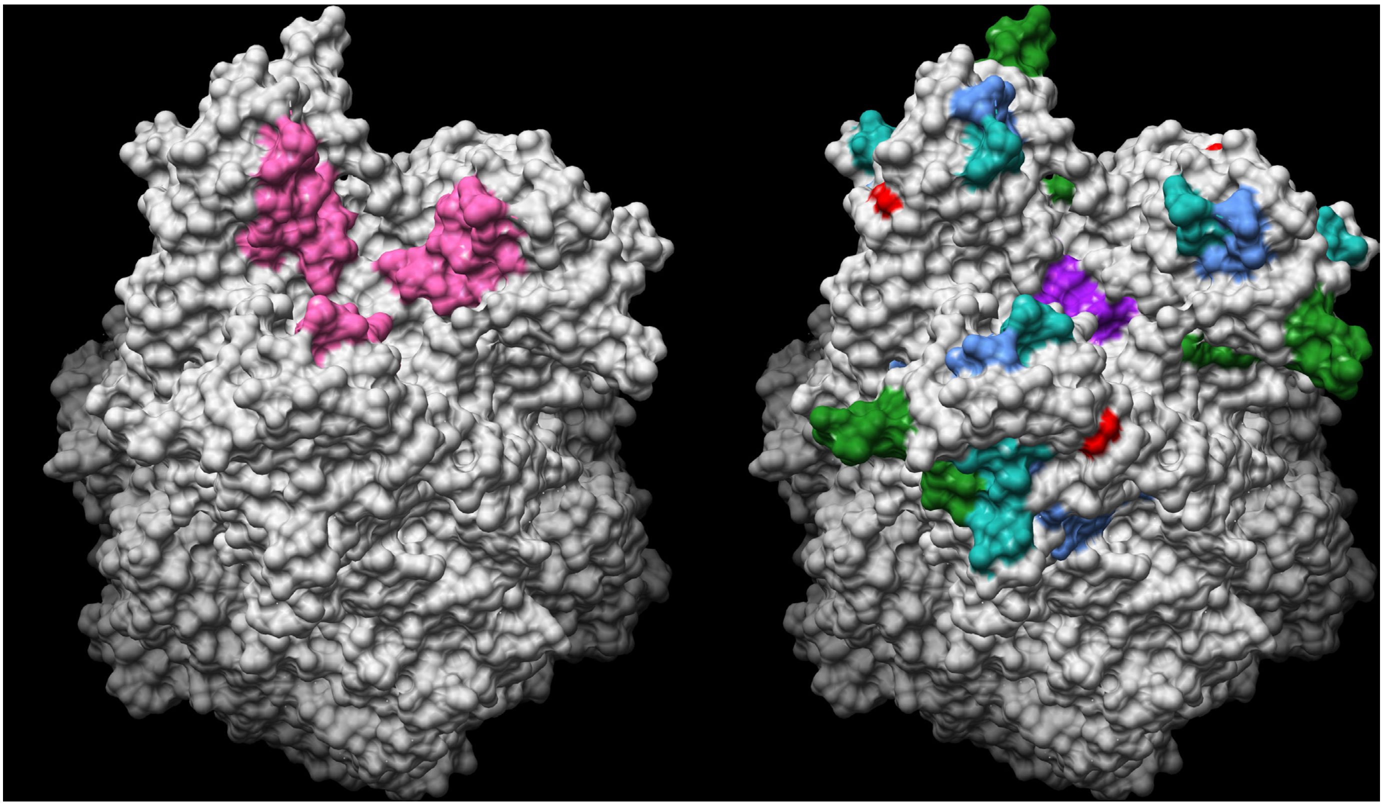
029 2251 0231



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Astudiaethau
am ymgysylltu â'r cyhoedd ynghylch ymchwil

Enw: Dr Alan Parker
Swydd: Uwch ddarlithydd
Isadran: Canser a Geneteg

Yr Ymchwil:

Mae'r ymchwil yn labordy Alan yn canolbwyntio ar ddatblygu 'firysau oncolytig' i drechu canser. A hwythau'n bathogenau esblygedig, mae firysau'n eithriadol o ran heintio celloedd, amlhau ac ymledu ymhlith celloedd cyfagos. Mewn celloedd iach, bydd hynny'n achosi clefydau. Yn anffodus, mae firysau heb esblygu i'r graddau y gallan nhw heintio celloedd cancr yn ôl eu dewis ac, felly, mae labordy Alan yn astudio'r modd mae firysau'n ymwneud â chelloedd iach i achosi clefydau. Trwy ddeall hynny ar y lefel foleciwlaidd, gall y tîm fireinio'r firws a chynhyrchu 'firysau cynllunydd' na fyddan nhw'n heintio dim ond celloedd canser, lle y byddan nhw'n amlhau ac yn chwalu'r celloedd heintiedig maes o law, gan daenu miloedd o'u hepil i heintio celloedd canser cyfagos. Mae modd addasu'r 'firysau cynllunydd' hynny eto fyth i atgyfnerthu moddion canser, gan gynnwys therapïau gwrth-heintio neu wrthgyrff.

Yr Ymgysylltu:

Y cynulleidfaoedd allweddol: Plant oedran ysgol a'r cyhoedd.

Y mathau o ymgysylltu: Hysbysu ac addysgu plant ysgol a'r cyhoedd yn gyffredinol ynghylch fy rôl yn wyddonydd a'r datblygiadau diweddaraf mewn therapi genynnau.

Mae Alan yn llysgennad cofrestredig i STEMNet ac mae'n mynd yn aml i ysgolion lleol i ennyn diddordeb disgyblion mewn therapi genynnau.

db.stemnet.org.uk

Mae gan Alan sawl rôl gyda Chymdeithas Prydain er Therapi Genynnau a Chelloedd megis trefnu diwrnod ymgysylltu cyhoeddus blynyddol y gymdeithas. Mae'r achlysur hwnnw'n cynnig cyfle i bobl gnoi cil ar ymchwil arloesol yn rhad ac am ddim gyda gwyddonwyr, cleifion, myfyrwyr ymchwil a chlinigwyr/nyrsys yn ogystal ag ystyried effaith ymchwil o'r fath ar ein cymdeithas ac ar unigolion.

www.bsgct.org

Mae Alan yn flogiwr brwd ac mae wedi ysgrifennu sawl erthygl i'r BSGCT ac adnoddau addysgol i Gymdeithas America er Therapi Genynnau a Chelloedd.

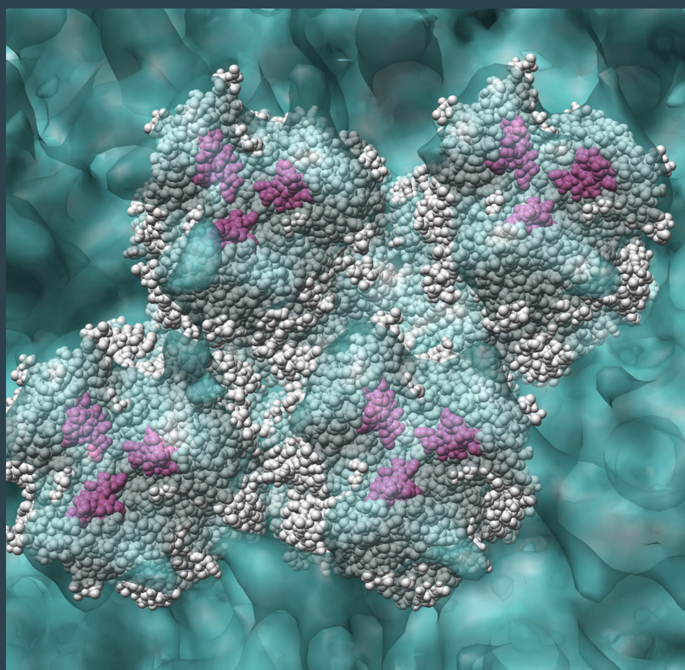
www.asgct.org

Mae Alan wedi cymryd rhan yn achlysuron lleol Techniquest (canolfan wyddoniaeth hynaf y deyrnas) i oedolion gyda'r hwyr. I ymgysylltu â phobl yno ynglŷn â'i ymchwil, mae wedi llunio gweithgaredd o'r enw 'Adeiladu Firws'. Bydd Alan yn cymryd rhan yn aml yn achlysuron Ymchwil i Gancr er lles cleifion, hefyd.

Y Cymhelliant:

Mae Alan yn frwd dros ymgysylltu â lleygwyr i gyfleu ei wybodaeth wyddonol - dyna agwedd mae'n ei mwynhau'n fawr. "Rwy'n gweithio mewn maes gwyddonol sy'n effeithio'n fawr ar ein cymdeithas gyfoes. Mae cancr wedi cyffwrdd â bywyd bron pawb. Wrth sôn am ddefnyddio firysau i drechu cancr, bydd y cwestiynau diddorol a ofynnir yn cyfeirio fy ymchwil nesaf."

Yn y sefyllfa ariannol sydd ohoni, mae'n fwyfwy pwysig ennyn diddordeb pobl mewn ymchwil - nid yn unig er atebolrwydd, ond i fanteisio i'r eithaf ar effaith ymchwil, hefyd. Hoffai Alan gynnig cyfle i bobl/cleifion gymryd rhan yn ei ymchwil nesaf, ac mae'n awyddus i fanteisio ar rwydweithiau cyfredol y rhai sydd am gymryd rhan mewn ymchwil i'r perwyl hwnnw.



Y Datblygu Proffesiynol:

Trwy ei waith ymgysylltu, mae Alan wedi dysgu ei bod yn bwysig cyfleu ei ymchwil ar ffurf y gall pobl aeddfed ac ifanc ei deall.

“Po fwyaf o sylw y gallaf ei dynnu at fy ymchwil, mwyaf o les fydd yn deillio ohoni. Rwyf i o’r farn bod cyfrifoldeb arnaf am helpu pobl i ddeall fy ngwaith a’u galluogi i bwyso a mesur ei effaith yn briodol.”

I gynnal ymchwil ymgysylltiedig o safon, mae Alan yn credu bod angen medrau cyfathrebu da ynghyd â’r gallu i wrando’n astud, deall eich cynulleidfa a gwybod pam maen nhw wedi dewis ymgysylltu â chi.

Y Dysgu:

Mae Alan wedi dysgu rhywbeth yn sgîl pob gweithgaredd ymgysylltu. “Mae’n ymddangos bod gwir ddiddordeb gan bobl yn fy ngwaith. Yn yr ystafell ddosbarth, gall plant ofyn cwestiynau anarferol sy’n codi materion pwysig o ran fy ymchwil. Bydd cleifion yn gofyn cwestiynau pwysig iawn, hefyd - gan eich atgoffa y dylai rhywbeth o wir les ddeillio o’ch ymchwil.”

Gair i gall:

“Cyfleu gwyddoniaeth sylfaenol a dod o hyd i gyfatebiaeth dda iawn!”

Mae Alan yn tueddu i gymharu ymchwil gymhleth â ffilm i blant, ‘How to Train Your Dragon’.

“Ddechrau’r ffilm, ymddengys y ddraig yn greadur peryglus ond, ar ôl i un o’r cymeriadau ei hyfforddi, mae’n gweithredu er mawr ddaioni.”

“Mae’n debyg iawn i firysau. Ar eu ffurf wreiddiol, gall y firysau a ddefnyddiwn achosi peswch neu annwyd.

“Ein nod yw deall sut mae firws yn heintio celloedd fel y gallwn ei adlunio neu’i ‘hyfforddi’ i weithredu er ein lles trwy adnabod a lladd celloedd canser.”

Mae Alan yn sôn am ei ymchwil yma:
www.youtube.com/watch?v=DDQPpZHZbo0&t=12s

Mae croeso ichi gysylltu ag Alan am ei waith:
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