

# Help R&D thrive in Bangor Conwy Môn

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73% of people in your constituency think it is important for the Welsh Government to invest in Research & Development in Wales

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Start a conversation about what R&D means for your constituency and the wider nation



Congratulations on your success in the Senedd election. Over the last few months, I'm sure you have been thinking about the political platform from which to represent your constituents and your nation. This booklet sets out why Research and Development (R&D) should be a part of that plan.

Campaign for Science and Engineering (CaSE) provides impartial expert advice to decision-makers about the role R&D can play in solving the problems facing people in your constituency, your nation and around the world.

R&D is the gathering of knowledge to understand the world around us, to solve problems, and to create new products and services. Investing in R&D creates new jobs and future industries, new educational opportunities, and the economic growth that helps fund our public services.

Working with sponsors in Wales, we have developed this Welcome Pack to introduce R&D and why it matters to both your constituents and the nation.

It includes evidence from CaSE's extensive polling of public attitudes to R&D in Wales and case studies showcasing the breadth of R&D happening in your area and across the nation.

I invite you to explore the ideas and evidence within this booklet and meet with me to discuss how you can become an R&D champion for your constituents and Wales.

**Dr Alicia Greated FIET FRSE**

Executive Director

Campaign for Science and Engineering (CaSE)



## Where R&D happens

NHS



Universities



Industry



Public sector



Charities



## Find out about R&D taking place in Wales

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Wales has a wealth of excellence in R&D, with organisations across the nation expanding our understanding of the world, tackling society's biggest challenges and engaging different audiences.

This booklet has been sponsored by organisations with deep rooted expertise in Welsh R&D. With bases across the nation, these organisations can help you learn more about the R&D taking place in your area and connect you to both the researchers doing it and the people it benefits.

### Our sponsors

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## About CaSE

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Campaign for Science and Engineering (CaSE) is a non-partisan charity and the leading independent voice for UK R&D. CaSE collaborates with our members, partners and the public to provide clear, expert advice to decision-makers about R&D.

This booklet builds on CaSE's extensive research into public attitudes to R&D and seeks to raise awareness in the Senedd of R&D, its benefits for Wales and the appetite among constituents for supportive action.

You can learn more about how we work on our website:  
[www.sciencecampaign.org.uk](http://www.sciencecampaign.org.uk)

## How do people in Wales feel about R&D?

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CaSE commissioned nationally-representative polling of 1,626 people in Wales to explore how the public thinks and feels about R&D. People in Wales:



1

### Want to know more about R&D

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Eight in ten people have heard of Research & Development and 53% were interested in hearing about R&D in the run up to the Senedd elections in May.

2

### See R&D as an asset to their communities

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Most (60%) would be proud if their area became well known as an important R&D hub in Wales and half (49%) would support an R&D laboratory being built in their area.

3

### Want to see sustained R&D investment

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Half (50%) think the Welsh Government should increase or maintain the amount of public money it invests in R&D in Wales.

4

### Value R&D investment, regardless of their political leanings

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A strong majority think it is important for the Welsh Government to invest in R&D, irrespective of which political party they intend to vote for.

5

### Want all of the R&D sector to be supported

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Around two thirds think that it should be a priority for the Welsh Government to support research carried out in Welsh universities and research organisations (68%) and to attract leading multinational research companies to bring R&D centres and jobs to Wales (66%).

## What do your constituents think?

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CaSE commissioned further constituency-level analysis to model your constituents' expected attitudes to their representatives, or the Welsh Government, taking actions to support R&D both locally and nationally. In Bangor Conwy Môn:

**73%**



Think it is important for the Welsh Government to invest in Research & Development in Wales.

**80%**



Would support their MS campaigning for more R&D to improve NHS patient experience, diagnosis and treatment.

**59%**



Would support their MS campaigning for more government support for R&D businesses in Wales.

**68%**



Would support their MS championing Welsh universities to help them attract research funding and talented researchers.

**56%**



Would support their MS campaigning for more R&D jobs to be created in their local area.

**59%**



Would support their MS campaigning for more R&D to improve environmental sustainability and biodiversity in Wales.

## How R&D is improving lives and livelihoods in Bangor Conwy Môn



### Uncovering the power of our planet: UKCEH (Bangor)



#### UK Centre for Ecology & Hydrology

 **Location:** Bangor

 **Type of R&D:**  
Environmental research

The UK Centre for Ecology & Hydrology (UKCEH) is an independent, world leading research institute, carrying out research and innovation to understand the environment across land, water and air, and addressing pressing environmental challenges across Wales, the UK and globally.

UKCEH operates four research bases across the UK. In North Wales, its Bangor City Centre site employs around 70 scientists and specialist staff, contributing high-value R&D roles to the region. It also hosts 26 PhD students – many jointly appointed with Bangor University – who play an important role in the local research community.

Research carried out at UKCEH Bangor focuses on environmental issues that include soil and ecosystem health – such as understanding the impacts of pollutants on crop health using solar domes (*pictured*) – the impacts of land-use changes, and the impacts of air quality. From the Bangor site, UKCEH also maintains nationally significant long-term datasets including monitoring in the Conwy Catchment and the UK-wide national Countryside Survey, both critical for understanding changes in the environment over time. Evidence from UKCEH research shapes UK and international policies and informs the solutions that can help society face these vital issues.

UKCEH collaborates widely with universities, other research organisations, businesses and global partners. From Bangor, UKCEH scientists work with organisations across Wales – including government departments – regulators and industry, ensuring local decision making and environmental stewardship is grounded in scientific evidence.

## OPTIMISE-FLT3: Looking at the best treatment for acute myeloid leukaemia



### Cancer Research UK

 **Location:** Across  
Wales

 **Type of R&D:**  
Cancer research

Photo credit: Laura Ashman

Cancer Research UK is funding an important trial investigating improved treatment options for patients with acute myeloid leukaemia (AML), an aggressive blood cancer causing more than two deaths every week in Wales.

The trial is looking for better ways to treat this type of cancer in people with AML who have a gene change called FLT3 in their cancer cells. This genetic change is found in about one-third of patients and usually leads to poorer outcomes due to their disease coming back sooner. Doctors are looking at the effectiveness of combining drugs that are already used as treatments for AML. This work aims to see how they work together, and to find out if either of the newer treatment combinations work better than standard treatment for these patients and learn more about the side effects.

The trial is sponsored by Cardiff University and administered by the Cardiff University Centre for Trials Research. Three Welsh Hospitals, including Ysbyty Glan Clwyd in North Wales, are among UK sites taking part, meaning all eligible Wales-based patients will be able to access the trial. If the trial finds that a treatment option is better than another, these results will be used to engage with health bodies to make the treatment with the best results available for future NHS patients.

OPTIMISE-FLT3 has set up an Associate Principal Investigator role in each participating hospital, allowing resident doctors to take on an additional role supporting the running of the study while learning about clinical trials. Several people are employed in the Cardiff University Centre for Trials Research as a result of the grant.

Contact CaSE to be introduced to R&D organisations in your area [info@sciencecampaign.org.uk](mailto:info@sciencecampaign.org.uk)

# Become a champion for R&D

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## In Bangor Conwy Môn

- Speak to local residents and start a conversation about what R&D means for your area. CaSE has a range of practical resources to help you.
- Engage with research organisations in your area to see R&D in action – we can put you in touch with local R&D businesses, research centres or universities.

## In the Senedd

### Urge the Welsh Government to take the following actions to support the R&D sector in Wales:

1. Increase public R&D investment in Wales and secure joined-up, cross-party commitments to sustain this trajectory for the long-term.
2. Support a variety of pathways into R&D to create and retain a skilled workforce in Wales that underpins the next generation of jobs and industries.
3. Build on and leverage Wales' strengths in R&D to maximise the nation's share of UK and international funding.
4. Partner with universities and research organisations to develop sustainable funding models that enable long-term research and innovation.
5. Incentivise collaboration across universities, the NHS, businesses and other research organisations to accelerate adoption of research.
6. Strengthen access and signposting to R&D finance and commercialisation support to help innovative businesses start, grow, and stay in Wales.

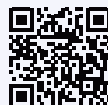
## Get in touch for more information

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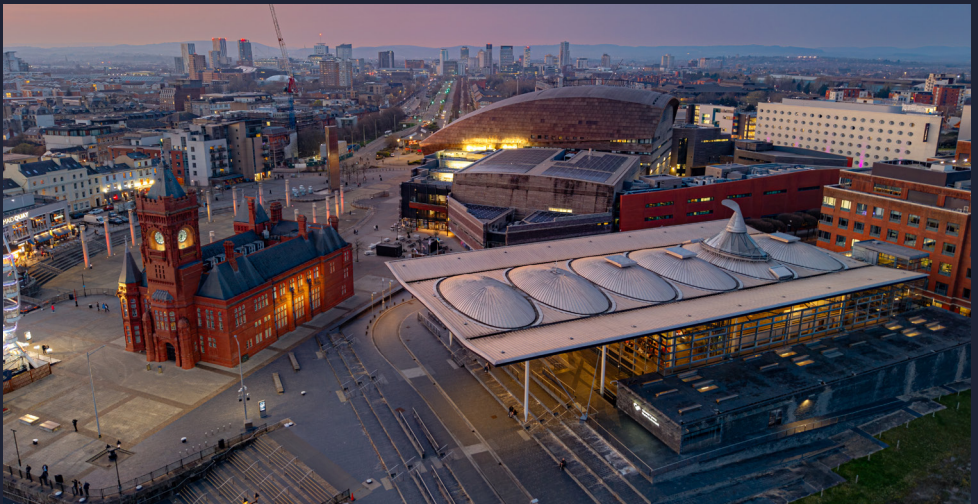
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# Helpwch Y&D i ffynnu ym Mangor Conwy Môn

Mae 73% o bobl yn eich etholaeth yn credu ei bod hi'n bwysig i Lywodraeth Cymru fuddsoddi mewn Ymchwil a Datblygu yng Nghymru

Dechreuwch sgwrs am yr hyn y mae Y&D yn ei olygu i'ch etholaeth a'r genedl yn ehangach



Llongyfarchiadau ar eich llwyddiant yn etholiad y Senedd. Dros y misoedd diwethaf, rwy'n siŵr eich bod chi wedi bod rhoi ystyriaeth i'r llwyfan gwleidyddol sydd gennych chi i gynrychioli eich etholwyr a'ch cenedl. Mae'r llyfryn hwn yn nodi pam y dylai Ymchwil a Datblygu (Y&D) fod yn rhan o'r cynllun hwnnw.

Mae Campaign for Science and Engineering (CaSE) yn cynnig cyngor arbenigol diduedd i benderfynwyr ar y rôl y gall Y&D ei chwarae wrth ddatrys y problemau y mae pobl yn eu hwynebu yn eich etholaeth, eich cenedl a ledled y byd.

Mae Y&D yn golygu casglu gwybodaeth i ddeall y byd o'n cwmpas, i ddatrys problemau, ac i greu cynhyrchion a gwasanaethau newydd. Mae buddsoddi mewn Y&D yn creu swyddi newydd a diwydiannau i'r dyfodol, cyfleoedd addysgol newydd, a'r twf economaidd sy'n helpu i ariannu ein gwasanaethau cyhoeddus.

Gan weithio gyda noddwyr yng Nghymru, rydym wedi datblygu'r Pecyn Croeso hwn i gyflwyno Y&D a pham mae'n bwysig i'ch etholwyr a'r genedl.

Mae'n cynnwys tystiolaeth o bôl eang CaSE o agweddau'r cyhoedd at Y&D yng Nghymru ac astudiaethau achos sy'n dangos ehangder yr Y&D sy'n digwydd yn eich ardal chi a ledled y wlad.

Rwy'n eich gwahodd i archwilio'r syniadau a'r dystiolaeth yn y llyfryn hwn a chwrdd â mi i drafod sut y gallwch chi ddod yn eiriolwr dros Y&D i'ch etholwyr a Chymru.

### **Dr Alicia Greated FIET FRSE**

Cyfarwyddwr Gweithredol

Campaign for Science and Engineering (CaSE)



## **Ble mae Y&D yn digwydd**

**Y GIG**



**Prifysgolion**



**Diwydiant**



**Sector  
Cyhoeddus**



**Elusennau**



## Dysgwch am yr Y&D sy'n digwydd yng Nghymru

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Mae gan Gymru gyfoeth o ragoriaeth mewn Y&D, gyda sefydliadau ledled y wlad yn ehangu ein dealltwriaeth o'r byd, mynd i'r afael â heriau mwyaf cymdeithas, ac ennyn diddordeb gwahanol gynulleidfaoedd.

Mae'r llyfryn hwn wedi'i noddi gan sefydliadau sydd ag arbenigedd hirsefydlog ym maes Y&D yng Nghymru. Gyda chanolfannau ledled y wlad, gall y sefydliadau hyn eich helpu i ddysgu mwy am yr Y&D sy'n digwydd yn eich ardal chi a'ch cysylltu â'r ymchwilwyr sy'n ei wneud a'r bobl sy'n elwa ohono.

## Ein noddwyr

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## Ynglŷn â CaSE

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Mae Campaign for Science and Engineering (CaSE) yn elusen amhleidiol a'r prif lais annibynnol dros Y&D yn y DU. Mae CaSE yn cydweithio â'n haelodau, partneriaid a'r cyhoedd i roi cyngor clir, arbenigol i'r rhai sy'n gwneud penderfyniadau am Y&D.

Mae'r llyfryn hwn yn adeiladu ar ymchwil helaeth CaSE i agweddau'r cyhoedd at Y&D ac yn ceisio codi ymwybyddiaeth yn y Senedd o Y&D, ei fanteision i Gymru a'r awydd ymhlith etholwyr am weithredu cefnogol.

Gallwch chi ddysgu mwy am sut rydyn ni'n gweithio ar ein gwefan:  
[www.sciencecampaign.org.uk](http://www.sciencecampaign.org.uk)

## Sut mae pobl yng Nghymru yn teimlo am Y&D?

Comisiynodd CaSE arolwg cenedlaethol-gynrychioliadol o 1,626 o bobl yng Nghymru i archwilio sut mae'r cyhoedd yn meddwl a theimlo am Y&D. Mae pobl yng Nghymru:



1

### Eisiau gwybod mwy am Y&D

Mae wyth o bob 10 person wedi clywed am Ymchwil a Datblygu a byddai gan 53% ddi-ddordeb mewn clywed am Y&D yn y cyfnod cyn etholiadau'r Senedd ym mis Mai.

2

### Yn ystyried Y&D fel ased i'w cymunedau

Byddai'r rhan fwyaf (60%) yn falch pe bai eu hardal yn dod yn adnabyddus fel canolfan Y&D bwysig yng Nghymru a byddai hanner (49%) o blaid adeiladu labordy Y&D yn eu hardal.

3

### Eisiau gweld buddsoddiad Y&D parhaus

Mae hanner (50%) o'r farn y dylai Llywodraeth Cymru gynyddu neu gynnal faint o arian cyhoeddus y mae'n ei fuddsoddi mewn Y&D yng Nghymru.

4

### Yn gwerthfawrogi buddsoddiad Y&D, waeth beth fo'u tueddiadau gwleidyddol

Mae mwyafrif cadarn o'r farn ei bod hi'n bwysig i Lywodraeth Cymru fuddsoddi mewn Y&D, waeth pa blaid wleidyddol maen nhw'n bwriadu pleidleisio drosti.

5

### Eisiau i'r sector Y&D cyfan gael ei gefnogi

Mae tua dwy ran o dair o'r farn y dylai fod yn flaenoriaeth i Lywodraeth Cymru gefnogi ymchwil a gynhelir ym mhrifysgolion a sefydliadau ymchwil Cymru (68%) a denu cwmnïau ymchwil amlwladol blaenllaw i ddod â chanolfannau a swyddi Y&D i Gymru (66%).

## Beth yw barn eich etholwyr?

Gwnaethom gomisiynu dadansoddiad pellach ar lefel etholaeth i fodelu agweddau disgwylidig eich etholwyr at eu cynrychiolwyr, neu Lywodraeth Cymru, yn cymryd camau i gefnogi Y&D yn lleol ac yn genedlaethol. Ym Mangor Conwy Môn:

**73%**



Mae 73% o'r farn ei bod hi'n bwysig i Lywodraeth Cymru fuddsoddi mewn Y&D yng Nghymru.

**80%**



Byddai 80% yn hoffi gweld eu AS yn ymgyrchu am fwy o Y&D i wella profiad, diagnosis a thriniaeth cleifion yn y GIG.

**59%**



Byddai 59% yn hoffi gweld eu AS yn ymgyrchu dros fwy o gefnogaeth gan y llywodraeth i fusnesau Y&D yng Nghymru.

**68%**



Byddai 68% yn hoffi gweld eu AS yn hyrwyddo prifysgolion Cymru i'w helpu i ddenu cyllid ymchwil ac ymchwilwyr talentog.

**56%**



Byddai 56% yn hoffi gweld eu AS yn ymgyrchu dros greu mwy o swyddi Y&D yn eu hardal leol.

**59%**



Byddai 59% yn hoffi gweld eu AS yn ymgyrchu dros fwy o Y&D i wella cynaliadwyedd amgylcheddol a bioamrywiaeth yng Nghymru.

## Sut mae Y&D yn gwella bywydau a bywoliaethau ym Mangor Conwy Môn




**Datgelu pŵer ein planed: UKCEH (Bangor)**



### Canolfan Ecoleg a Hydroleg y DU (UKCEH)

 **Lleoliad:** Bangor

 **Math o Y&D:**  
Ymchwil  
amgylcheddol

Mae Canolfan Ecoleg a Hydroleg y DU (UKCEH) yn sefydliad ymchwil annibynnol sy'n arwain y byd, gan gynnal ymchwil ac arloesi i ddeall yr amgylchedd ar draws tir, dŵr ac aer, a mynd i'r afael â heriau amgylcheddol dybryd ledled Cymru, y DU ac yn fyd-eang.

Mae UKCEH yn gweithredu pedair canolfan ymchwil ledled y DU. Yng Ngogledd Cymru, mae ei safle yng nghanol Dinas Bangor yn cyflogi tua 70 o wyddonwyr a staff arbenigol, gan ddod â rolau Y&D gwerth uchel i'r rhanbarth. Mae hefyd yn gartref i 26 o fyfyrwyr PhD – llawer ohonynt wedi'u penodi ar y cyd â Phrifysgol Bangor – sy'n chwarae rhan bwysig yn y gymuned ymchwil leol.

Mae ymchwil a gynhelir yn UKCEH Bangor yn canolbwyntio ar faterion amgylcheddol sy'n cynnwys iechyd pridd ac ecosystemau – fel deall effeithiau llygryddion ar iechyd cnydau gan ddefnyddio cromenni solar (llun) – effeithiau newidiadau defnydd tir, ac effeithiau ansawdd aer. O safle Bangor, mae UKCEH hefyd yn cynnal setiau data hirdymor o arwyddocâd cenedlaethol gan gynnwys monitro yn Nalgylch Conwy a'r Arolwg Cefn Gwlad cenedlaethol a gynhelir ledled y DU – y mae'r ddau yn hanfodol i ddeall newidiadau yn yr amgylchedd dros amser. Mae tystiolaeth o ymchwil UKCEH yn siapiro polisïau'r DU a pholisïau rhyngwladol ac yn llywio'r datrysiadau a all helpu cymdeithas i wynebu'r materion hanfodol hyn.

Mae UKCEH yn cydweithio'n eang â phrifysgolion, sefydliadau ymchwil eraill, busnesau a phartneriaid byd-eang. O Fangor, mae gwyddonwyr UKCEH yn gweithio gyda sefydliadau ledled Cymru – gan gynnwys adrannau'r llywodraeth, rheoleiddwyr a'r diwydiant – gan sicrhau bod penderfyniadau lleol a stiwardiaeth amgylcheddol wedi'u seilio ar dystiolaeth wyddonol.

## OPTIMISE-FLT3: Edrych ar y driniaeth orau ar gyfer lewcmia myeloid aciwt



### Cancer Research UK

 **Lleoliad:** Ledled  
Cymru

 **Math o Y&D:**  
Ymchwil cancer

Credyd llun: Laura Ashman

Mae Cancer Research UK yn ariannu treial pwysig sy'n ymchwilio i opsiynau triniaeth gwell ar gyfer cleifion â lewcmia myeloid aciwt (AML), cancer gwaed ymosodol sy'n achosi mwy na dwy farwolaeth yr wythnos yng Nghymru.

Mae'r treial yn chwilio am ffyrdd gwell o drin y math hwn o ganser mewn pobl ag AML sydd ag amrywiad genetig o'r enw FLT3 yn eu celloedd cancer. Mae'r newid genetig hwn i'w gael mewn tua thraean o gleifion ac fel arfer yn arwain at ganlyniadau gwaeth gan fod y clefyd yn dychwelyd yn gynt. Mae meddygon yn edrych ar effeithiolrwydd cyfuno cyffuriau sydd eisoes yn cael eu defnyddio fel triniaethau ar gyfer AML. Nod y gwaith hwn yw gweld sut maen nhw'n gweithio gyda'i gilydd, dysgu a yw'r cyfuniadau triniaeth newydd yn gweithio'n well na thriniaeth safonol ar gyfer y cleifion hyn, a dysgu mwy am y sgîl-effeithiau.

Noddir y treial gan Brifysgol Caerdydd ac mae'n cael ei weinyddu gan Ganolfan Ymchwil Treialon Prifysgol Caerdydd. Mae tri ysbyty yng Nghymru, gan gynnwys Ysbyty Glan Clwyd, ymhlith y safleoedd yn y DU sy'n cymryd rhan, sy'n golygu y gall pob claf cymwys yng Nghymru gael mynediad i'r treial. Os yw'r treial yn canfod bod un opsiwn triniaeth yn well nag un arall, bydd y canlyniadau hyn yn cael eu defnyddio i ymgysylltu â chyrrff iechyd i sicrhau bod y driniaeth sydd â'r canlyniadau gorau ar gael i gleifion y GIG yn y dyfodol. Mae OPTIMISE-FLT3 wedi sefydlu rôl Prif Ymchwilydd Cyswllt ym mhob ysbyty sy'n cymryd rhan, sy'n caniatáu i feddygon preswyl ymgymryd â rôl ychwanegol yn cefnogi gweithrediad yr astudiaeth wrth ddysgu am dreialon clinigol. Mae sawl person yn cael eu cyflogi yng Nghanolfan Ymchwil Treialon Prifysgol Caerdydd o ganlyniad i'r grant.

Cysylltwch â CaSE i gael eich cyflwyno i sefydliadau Y&D yn eich ardal chi [info@sciencecampaign.org.uk](mailto:info@sciencecampaign.org.uk)

# Dewch yn eiriolwr dros Y&D

## Ym Mangor Conwy Môn

- Siaradwch â thrigolion lleol a dechreuwch sgwrs am yr hyn y mae Y&D yn ei olygu i'ch ardal. Mae gan CaSE amrywiaeth o adnoddau ymarferol i'ch helpu chi.
- Ymgysylltwch â sefydliadau ymchwil yn eich ardal chi i weld Y&D ar waith – gallwn eich rhoi mewn cysylltiad â busnes Y&D lleol, canolfannau ymchwil neu brifysgolion.

## Yn y Senedd

### Anogwch Lywodraeth Cymru i gymryd chwe cham i gefnogi'r sector Y&D yng Nghymru:

1. Cynyddu buddsoddiad Y&D cyhoeddus yng Nghymru a sicrhau ymrwymiadau trawsbleidiol cydgysylltiedig i gynnal hyn yn yr hirdymor
2. Cefnogi amrywiaeth o lwybrau i Y&D i greu a chadw gweithlu medrus yng Nghymru a fydd yn sail i'r genhedlaeth nesaf o swyddi a diwydiannau
3. Adeiladu a manteisio ar gryfderau Cymru mewn Y&D i sicrhau bod y genedl yn denu cymaint â phosibl o gyllid o'r DU ac yn rhyngwladol
4. Gweithio mewn partneriaeth â phrifysgolion a sefydliadau ymchwil i ddatblygu modelau cyllido cynaliadwy sy'n galluogi ymchwil ac arloesi hirdymor
5. Cymell cydweithredu ar draws prifysgolion, y GIG, busnesau a sefydliadau ymchwil eraill i annog mabwysiadu ymchwil yn gyflymach
6. Cryfhau mynediad a chyfeiriadau at gyllid Y&D a chymorth masnacheiddio i helpu busnesau arloesol i gychwyn, tyfu ac aros yng Nghymru

## Cysylltwch â ni am ragor o wybodaeth

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