Energy Geoscience - Career Pathways

About this information pack

This guidance has been developed by UK Subsurface Task Force geoscientists working in industry and universities.

It is aimed at UK A Level/Highers students considering university courses including geology/earth science, their parents/carers, and particularly at graduates/postgraduates considering postgraduate study and/or employment in energy geosciences.

We hope it will guide you in understanding pathways into and through a rewarding and stimulating energy geoscience career.

How to use this pack

Pages 1 – 11 provide all our insights, with clickable links to supporting career stories, etc.

Click these for people stories

Click these for video stories

Bold boxes = early career stories

Click these for extra info:

Where can I download this info pack?

- GESGB/Next Generation
- Energy Insider (open a career video to access pack)
- IOM3/Schools
- Planitplus
- Subsurface Task Force/ Resources

What can I do with a degree in geoscience?

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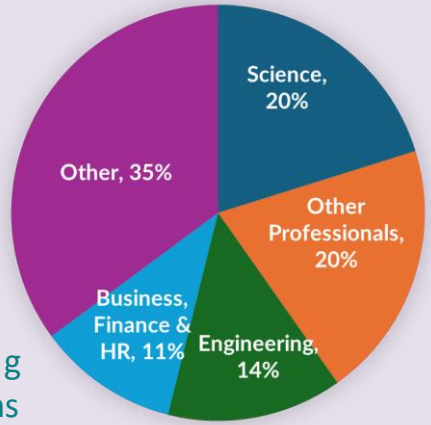
Almost anything! Geoscience skills are highly transferable

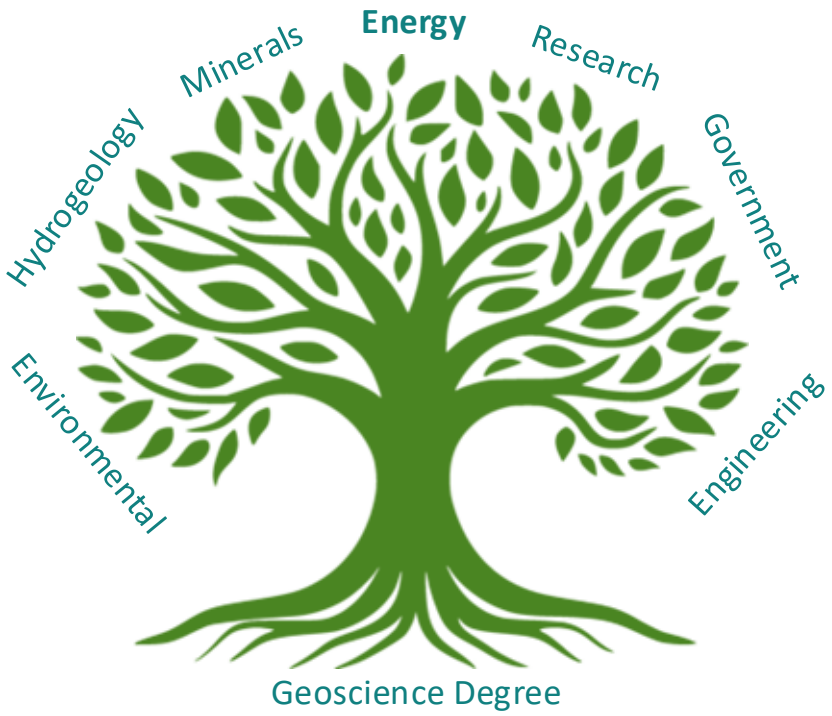
A degree in geology/earth sciences/geophysics does not limit you to a job in geosciences - around 80% of earth science graduates work outside the geosciences after graduation.

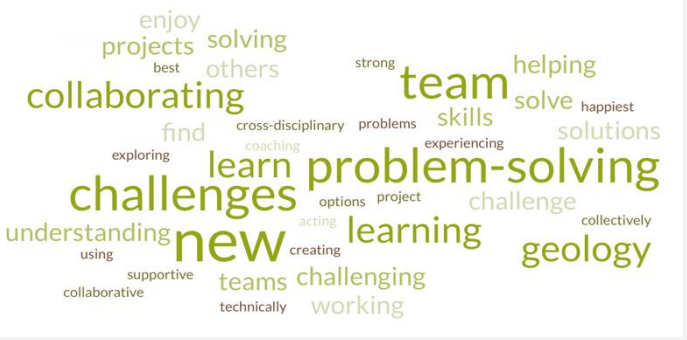
What useful and transferable skills does geology give me?



- **Data analysis and interpretation**: interpreting data from a wide range of complex, sometimes ambiguous datasets to deliver insights
- **Problem solving and critical thinking**: making decisions with incomplete information, managing uncertainty and ambiguity, developing and testing hypotheses
- **Team-working, initiative and self-reliance**: independent working and inter-disciplinary collaboration, often in multi-cultural teams
- **Story-telling and communication**: making complex concepts and findings understandable to a range of audiences

Major employment sectors for geoscientists





Geology vs. geophysics degrees – what's the difference?

Geology focusses on the direct study of Earth materials using fieldwork, lab, chemical, subsurface and other data. Geophysics is more mathematical, with indirect approaches e.g. seismic, magnetic and gravity fields and computer methods to study Earth's physical properties. Both require a mix of skills and can overlap significantly.

[Data source: https://www.prospects.ac.uk/careers-advice/what-can-i-do-with-my-degree/geology]

What is energy geoscience and how does it help the planet?

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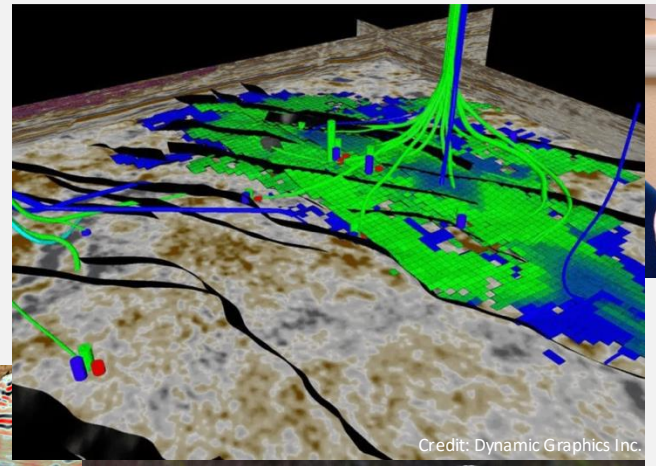
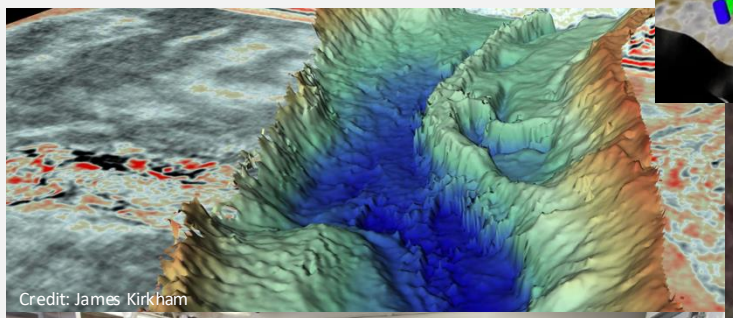
Energy geoscience is a broad area of overlapping subsurface applications where geology and geophysics play a key role, including oil & gas, subsurface carbon (CO_2) and energy storage, nuclear waste sequestration, geothermal energy and wind power. The increasing trend is towards geoscience careers working across these subsurface applications.


Credit: Dynamic Graphics Inc.


Credit: BGS

Carbon storage and nuclear waste sequestration handle hard-to-abate CO_2 emissions and provide a long term solution for radioactive waste from nuclear power.


Credit: James Kirkham


Credit: GeoExpro


Credit: BGS


Credit: PGS

Gas and energy storage provide power backup to intermittent renewables.

Oil and gas provide c. 80% of global primary energy. Oil provides transport fuels and feedstock for plastics, medicines, cosmetics, etc. Gas is a heat source, fertilizer feedstock and lower carbon replacement for coal use. Reducing emissions by reversing global oil and gas demand growth is forecast to take several decades.

Click for: *"Why I got a degree in Geoscience - and how it prepared me for a career in the Energy Transition"*

Renewables - the fast-growing wind sector generates low carbon electricity whilst geothermal energy, currently early stage in the UK, has low carbon power, heating and cooling applications, locally with lithium as a by-product.

What is the role of geoscience in energy projects?

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Ground engineering for storage: Coire Glas

The first UK pumped hydro storage scheme in 40 years, this large-scale project with a potential capacity of 30 GWh, is in construction. Engineering geoscientists conduct ground investigations to characterize the geology for design and construction of the reservoir dam and underground structures.

Location: UK, Scottish Highlands

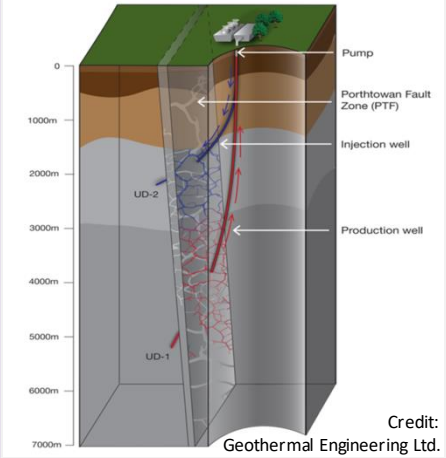

Credit: SSE


Credit: Helium One

Geothermal: United Downs

The UK's first deep power, from 2026 aims to generate 2MW electricity and upto 10 MW heat using 2 wells to circulate water through hot fractured granite. Geoscientists used prior research to locate the site, understand and model flow through deep fault systems, then steered the drilling of 2 wells, gathering data to target fractures for production and injection of water.

Location: UK, Cornwall

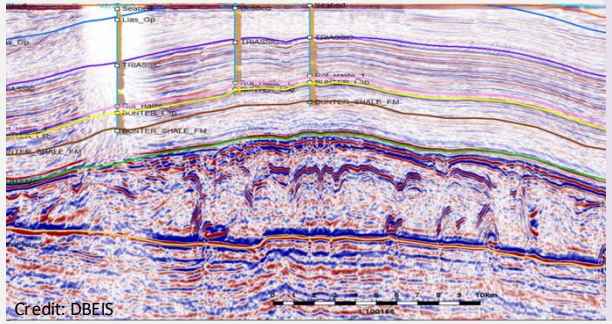


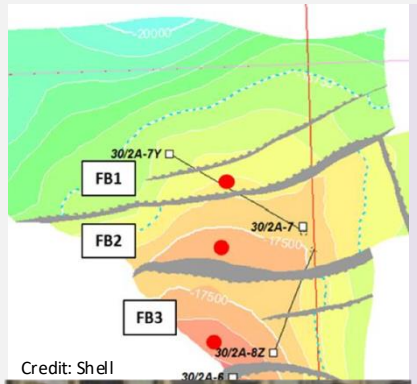
Credit: Geothermal Engineering Ltd.

Helium exploration: Rukwa

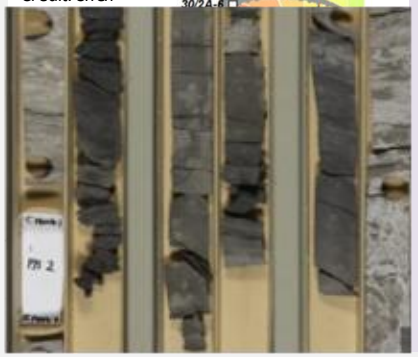
Surface helium seeps led UK-based company, Helium One, to explore for commercial helium accumulations in Tanzania. Geoscientists used seismic data, satellite imagery, airborne surveys and field data to define potential subsurface helium traps, plan and drill exploration wells - finding helium.

Location: Tanzania


Credit: DBEIS



Credit: Shell



Oil and gas: Jackdaw Field

A new, high pressure/high temperature gas field which will produce around 6% of UK gas production. Geophysicists use seismic data to create maps of the gas-bearing structure. Working with geologists and engineers, the team evaluate reservoir quality using rock cores, wellbore measurements and analogues to assess resources and plan the safe drilling of deep wells to maximise gas production.

Location: UK Central North Sea

Carbon storage: Endurance carbon store

The UK's first CO_2 store, Endurance aims to grow from an initial 4 Mt/yr of CO_2 stored in Triassic Bunter Sandstone, starting in 2027. Geologists and geophysicists use seismic data and existing wells to map the storage structure, understand and model the reservoir's storage capacity, injectivity and sealing characteristics of the overlying strata to assure secure long term storage.

Location: UK Southern North Sea

[GWh – Gigawatt hours, a measure of energy stored, MW = Megawatts, a measure of energy (heat or electricity) produced, Mt/yr = Million tonnes per year, a measure of CO_2 injected into a store]

Energy geoscience - where are the jobs?

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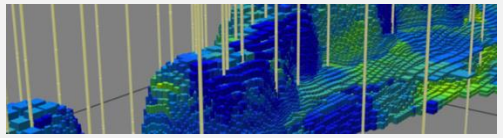

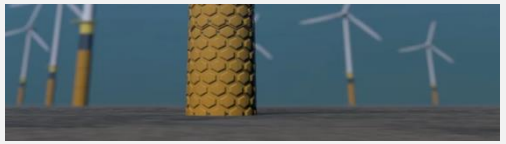

Sector/purpose	Scale	Pathway to 2050
Oil and gas exploration and production • Meeting business and consumer demand with lower emissions supply • Optimising use of existing infrastructure		**Long term UK reduction** • Shift to renewables will reduce global demand but timescale is unclear
Secure storage of CO_2 • Secure, long-term storage to limit climate impact of fossil fuel consumption		**Growing** • Currently early stage but rapidly growing
Energy storage • Gas, hydrogen & compressed air subsurface storage & above-ground pumped hydro		**Growing** • Electrified demand needs energy storage
Development of on/offshore wind power • Siting of foundations, anchors and cable routes for renewable energy projects		**Growing** • Global expansion driving major growth
Nuclear waste sequestration • Safe, long-term sequestration of radioactive waste with support of local communities		**Growing** • Expansion of nuclear power at various scales
Geothermal heating, cooling and power • Deep: heat for regional heating/industry, power generation at high temperatures • Shallow: heating and cooling		**Growing** • Currently early stage but growing awareness of applications
Other exploration and production • Helium, hydrogen and the critical mineral lithium in geothermal waters		**Growing** • Currently early stage

Main types of geo employers

Oil & gas co's

Engineering consultancies

Integrated energy companies

Subsurface consultancies

Utility co's

Service companies

Geotechnical & survey companies

Government agencies, regulators, parastatal bodies

Geother-mal co's

Subsurf. consult's

Service companies

Start-up co's

FLEXIBILITY TO WORK ACROSS MULTIPLE SECTORS

Click to understand employer types

[Scale today: circles reflect sectors ranging from those employing several thousand geoscientists in the UK (where the largest companies could have up to 100 UK geoscientists) to sectors employing perhaps 50+ in companies with as few as 1 or 2 geoscientists]

What sort of job could I do?

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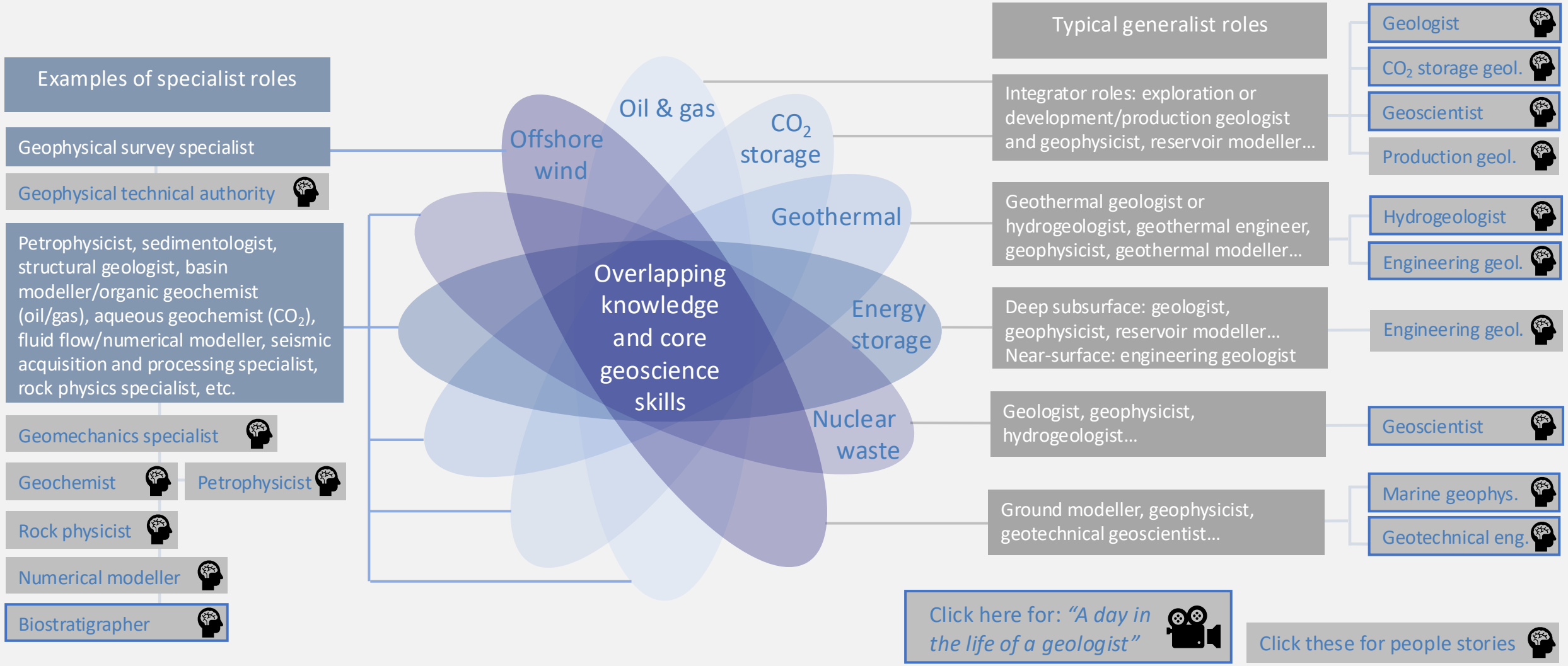
Core geoscience skills provide the flexibility to move between sectors, typically with limited training/on-the-job learning



How do I progress my career?

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Credit: KeyFacts Energy


Credit: Geothermal Dev. Co.- Cera Phi Energy


Credit: North Sea Core

Career progression is within and between companies and sectors. The trend is towards *flexibility* to work across or move between deep subsurface applications - oil/gas, CO_2 storage, etc. Shallow ground engineering (e.g. for wind farms) has geophysical, but limited geological, skills overlap with the deep subsurface applications.

Indicative comparison of employer types

	Relative size of companies	Salary and benefits	Potential for overseas role	Technical progression?	Leadership progression?	Scope for broader roles		
Integrated energy companies	●	£	▮▮▮	▮▮▮	▮▮▮	▮▮▮	Greater scope - large organisations	Geoscientist, Geologist
Oil and gas companies	●→●	£	▮▮	◢▮▮	▮▮	◢	Scale/portfolio dependent	Geoscientist, Geophysicist
Service companies	●→●	£	▮▮	◢▮▮	▮▮▮	◢▮▮	Also sales and marketing scope	Specialist, Geophysicist
Consultancies	•→●	£	▮	◢▮▮	◢▮▮	◢▮▮	Diverse projects - build experience	Team leader, Geol/director
Startups and small companies	•→•	£	▮	◢▮▮	◢▮▮	▮	Small org's, more responsibilities	Geologist

BROADENING OPTIONS

Technical progression: roles which expand subsurface skillsets and responsibilities, can also be progression from generalist to specialist technical roles or vice versa and to leadership roles within technical functions

Broadening roles: these could involve e.g. expanding non-subsurface skillsets within a company or shifting to a different subsurface application (e.g. carbon storage to geothermal) within a company or by moving employer

Progression into business leadership: for example team leadership, exploration/ development/asset management and project management roles which can entail large and complex projects

Technical Adviser | Geoscientist | Petroleum Engineer | Carbon Stewardship | Subsurface Manager | Chief Executive Officer

Click these for people stories

What will I be paid and how will my salary progress?

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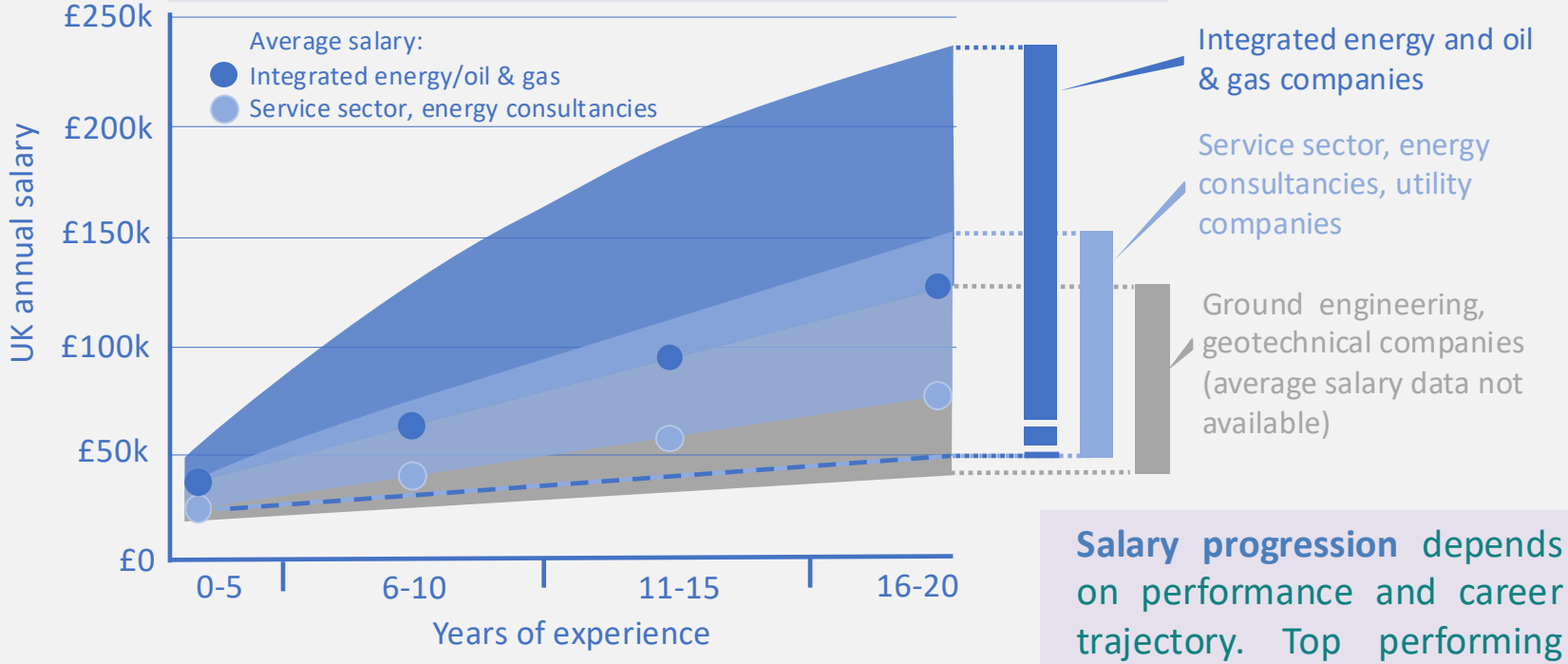
Salary and benefits depend on the type/sector of employer. Integrated energy and oil & gas companies tend to higher levels of pay and a more generous scale/range of benefits. Consultancies and service companies tend to lesser pay levels and benefits as do state-owned organisations, with ground engineering slightly lower still. Salary levels can be higher for first few years for people with relevant PhD's.

Additional benefits commonly include health/dental insurance, annual bonus, flexible working, London weighting and longer-term incentives at senior levels. Less common benefits are share options, gym allowance, car, travel, housing, maternity/paternity and child-care allowances.

Salary trajectories and ranges by employer groups*



Salary progression depends on performance and career trajectory. Top performing individuals tend to higher pay. The higher salary ranges shown here reflect geoscientists in higher paid, broader management roles. Average salary figures shown are lower reliability.

[* Data extracted/interpreted from GESGB/WeConnect Energy 2024 Geoscientist Salary supplemented by WeConnect 2024 Low Carbon/Renewables Salary Surveys (https://www.weconnectenergy.com/insights/salary-surveys), Ground Engineering Magazine GE100 survey 2024 (https://www.geplus.co.uk/features/ge100-2024-industry-survey-shows-power-sector-expected-to-drive-growth-23-09-2024/) and industry input. Small employer groups e.g. geothermal – insufficient data.]

How do I get into energy geoscience?

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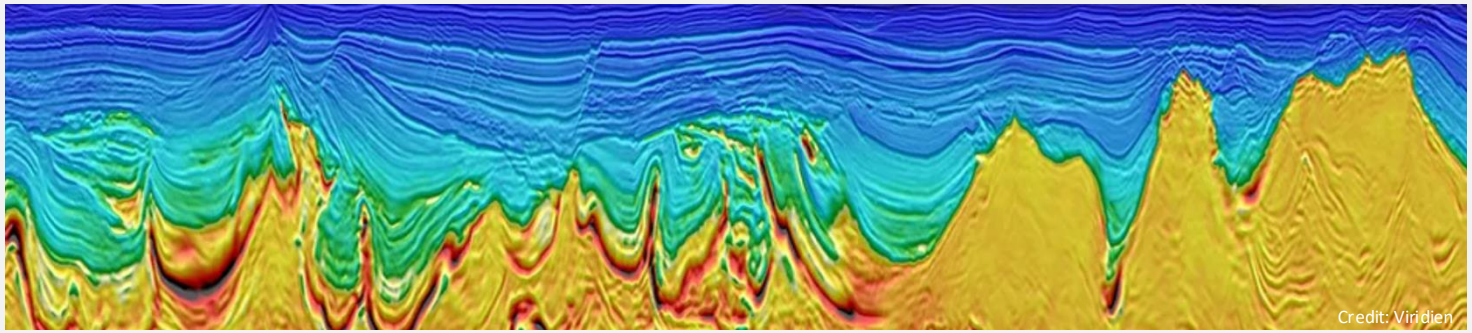
What subjects should I study at school?

- Geology GCSE or A Level are not needed but you will need 3 mainly science/ numerate A levels (Scotland – 4-5 Highers inc. 2-3 maths or science subjects)

What subject should I study at university?

- Your degree subject will need to be tailored towards geology/earth sciences/geophysics single or joint honours. Transfer from joint to single honours and from geography to geology is usually possible (check with the university).


Credit: Viridien

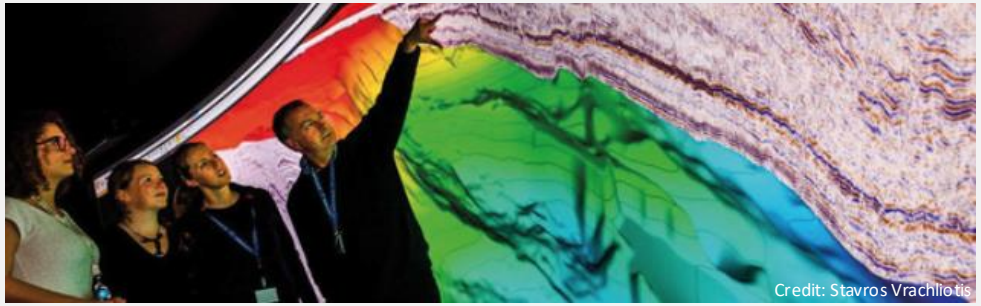
Can I get financial support for post-graduate study?

- Most students should be able to access post-graduate loans – rules and amount available vary between countries - check your course, location and circumstances.
- MSc: UK tuition fees are typically £10,000 - £15,000. Some scholarships/bursaries are also available including needs-based and some for under-represented groups.
- PhD: mainly via fully-funded Doctoral Landscape & Doctoral Focal Awards
- Universities will provide information on fund availability, award criteria, etc.


Credit: Caroline Gill

Do I need a post-graduate qualification?

- A relevant postgraduate qualification is usually required e.g. Masters (1 year full time or 2 year part time MSc) or 3.5 - 4 year PhD (a 1 year research Masters can also be an option with pathway to PhD)
- Some roles may not need post-graduate qualifications – click on link below for more info


Credit: Stavros Vrachliotis

Click here to understand routes from school to energy geoscience and related employment

What other career resources are available?

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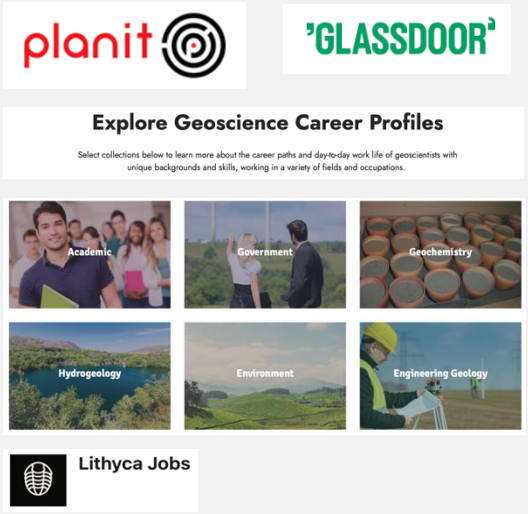
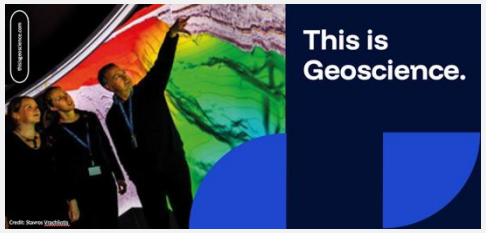
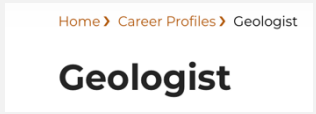
Useful UK degree/postgraduate/career resources

- Prospects: geology - what can I do with my degree?
- Energy Insider – energy careers gateway
- Planitplus
- 'This is geoscience' (resources in development)







Broader career resources

- Geology resources – opportunities in the workplace (US-oriented)
- Careers in the geosciences (AGU)
- Careers in the geosciences (AIG)

See these video stories: *geophysicist* *geologist* *geoscientist*

Jobs, internships and mentors – useful places to look

- **Use LinkedIn to build your network, job search and view career paths**
  - **Connect to Young Professionals** (YP) groups who tend to repost job ads and run networking events. Lithyca Jobs re-posts geoscience vacancies on LinkedIn, where companies often advertise jobs and internships
  - **Connect to alumni** in sectors of interest using the LinkedIn Alumni Tool search function (link below)

Click these LinkedIn logos for more info: Lithyca Jobs; Lithyca Grants; GESGB (Geoscience Energy Society of Great Britain); GESGB Young Professionals; London AAPG YP; alumni tool

- **University summer placement schemes:** see uni schemes
- **University career resources and job boards**
- **Job sites** include Energyjobline, Gradcracker, Bright Network, Glassdoor, Target Jobs and Indeed.
- **Mentoring schemes** are run by GESGB (ges-gb.org.uk) and Equator – for ethnic minorities (equatorresearchgroup.wordpress.com)
- **Other useful UK organisations include:** GESGB (student conference attendance, etc.), Geological Society (Annual Careers Day)

What advice would the Subsurface Task Force offer me?

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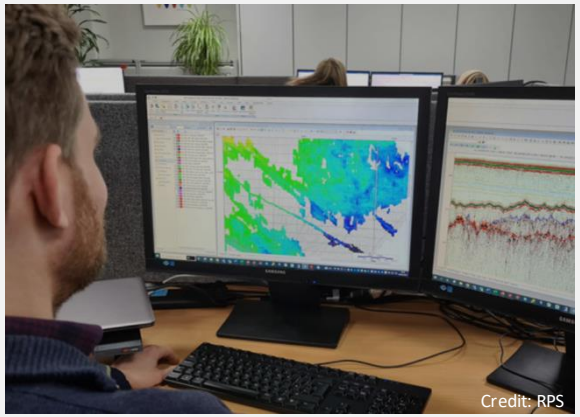
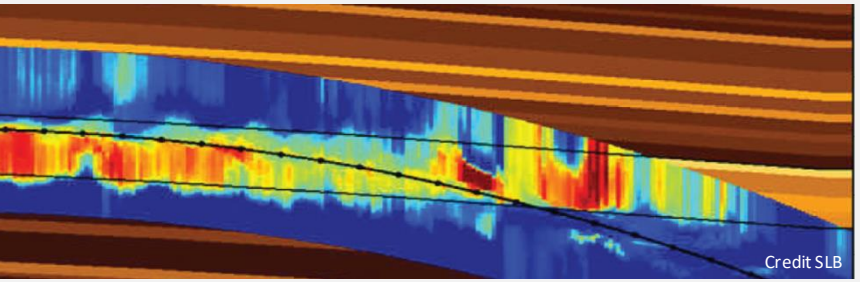
Be an energy geoscientist – make a difference!



Embrace flexible careers

Geoscientists increasingly move between projects, employers and sectors, deploying the deep subsurface focus of the oil/gas, and CO_2 storage sectors into e.g. nuclear waste sequestration, geothermal and energy storage. These small sectors will grow as the UK reduces its dependence on fossil fuels but requires low carbon baseload energy and backup to renewables.

Stay flexible - energy is a dynamic sector – be ready to adapt your plans
Show your passion - curiosity, teamwork and commitment are valued
Build your experience - seek internships, company-sponsored projects and volunteer opportunities to show commitment and gain understanding
Be persistent - it can help you stand out
Make your own career path - don't wait for companies to do it for you
Keep learning - broaden expertise, develop new skills, pursue Chartership
Grow your network - be a volunteer, use LinkedIn, attend industry events
Maintain core geoscience skills to enable moves between sectors/roles



Looking forward the UK oil & gas sector is mature and so is shrinking but remains the largest employer of energy geoscientists, generally offering comprehensive training and experience. Planned tax improvements will support ongoing production for 20+ years. Accelerating retirement of the ageing workforce, with growing CO_2 storage, will create new jobs in oil & gas, service and consultancy companies.

Recognise that energy geoscience is critical to the energy transition

In our world, jobs and roles are not defined as *green* or *non-green*. All the sectors/ applications described here will require capable geo-scientists through the energy transition and beyond.

Linked Supporting Pages Follow

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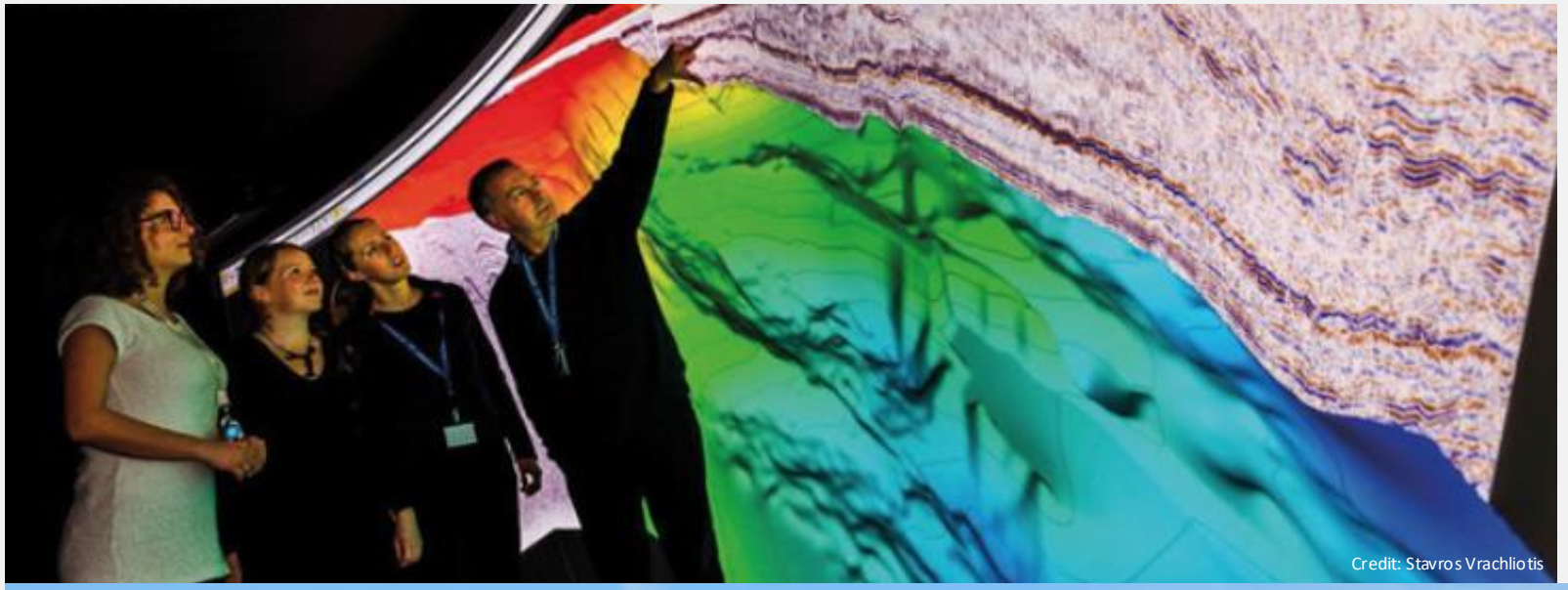

Credit: Stavros Vrachliotis

Credit: IOG plc – Blythe gas platform and Dudgeon wind farm, UK

Understanding the range of employers

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Integrated energy companies are huge companies, involved in global oil and gas from exploration/ production through to distribution, plus CO_2 capture and storage and hydrogen. Some are also involved in wind and solar power generation. In the UK, many are active in CO_2 capture with fewer still in oil/gas.

Eni, bp, TotalEnergies, equinor, ExxonMobil, Shell, Chevron

Service companies provide services to energy companies but do not typically produce oil/gas. Services can include reservoir characterization, well logging, production optimization, acquisition and/or processing of seismic data, etc. Scale ranges up to very large co's.

Baker Hughes, slb, Core Lab, VIRIDIEN, TGS, shearwater, dug

...and others

Oil and gas companies range from exploration co's to large exploration and production co's with North Sea and/or overseas assets. Some are also expanding into carbon storage.

Harbour Energy, ADURA, SERICA ENERGY, ITHACA ENERGY, enQuest, one dyas, NEO NEXT

...and others

Subsurface consultancies undertake client projects from specialist (e.g. rock mechanics) to integrated projects (e.g. reservoir modelling and carbon storage analysis)

Sproule ERCE, TRACS INTERNATIONAL, GeoScience, PetroStrat, rockflow, Merlin Energy Resources

...and others

Geothermal and start-up co's tend to be small and tightly focused on one theme e.g. geothermal, helium or lithium exploration, carbon storage...

TownRock Energy, Carbon Catalyst, Cornish Lithium, HeliumOne

...and others

Geotechnical co's conduct and interpret geological/geophysical surveys for e.g. wind farm and cable siting

CATHIE, Gardline, FUGRO

...and others

Utility companies are involved in solar and wind powered electricity generation, hydrogen production projects and energy storage

RWE, sse, Ørsted, ScottishPower Renewables, storengy, EDF renewables

...and others

Engineering consultancies cover themes including ground investigation, geotechnical engineering, hydrogeology, rock mechanics, carbon/energy storage, geothermal and wind farm siting

ARUP, AtkinsRéalis, Mott MacDonald

...and others

Jacobs

Government agencies/para-statals include the oil/gas regulator, geological survey and nuclear storage specialists

North Sea Transition Authority, Nuclear Waste Services, BGS British Geological Survey, United Kingdom National Nuclear Laboratory

...and others

Mining Remediation Authority

Click to return to 'Where are the jobs?'

Educational routes into energy geosciences

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School

GCSE's, AS/A-Levels, Highers

- Geology is not required
- Typical subjects include: Geography, Geology, Physics, Biology, Chemistry, Statistics, Mathematics, etc.
- [Geophysics entry needs maths but not always physics]
- These are guidelines - check course entry details

Do I need to do a Masters or PhD?

- Hands-on energy geoscientist jobs usually need an MSc or PhD but…
- Many ground engineering, some geotechnical, hydrogeology, service company and non-hands-on/non-geoscientist roles do not require a postgraduate qualification.
- MSc's that accept students without major/minor geology/geophysics/(physics) degrees seem not to prepare students for a hands-on deep geoscientist role but may be additional routes into geotechnical engineering and hydrogeology

Undergraduate

Geology or geophysics (major)

- Single Hons. geology/earth sciences/geophysics/(physics) or equivalent
- Joint hons. i.e. geology/geophysics AND relevant second subject

Geology/geophysics (minor)

- Combined Honours degrees i.e. relevant second subject WITH geology/geophysics/physics

Degrees without geology or the relevant subjects listed above

- Science and engineering degrees

Postgraduate

Geoscience PhD

- 4 year CDT (e.g. Target) or Doctoral Training Partnership (DTP) research PhD with taught modules from academia and industry, or:
- 3 - 4 year research PhD

Geoscience or geophysics MSc

- Geology major normally required but physics/maths/numerate degree acceptable for geophysics
- Example MSc's: energy/petroleum geoscience, exploration geophysics, sustainable energy geoscience, etc.

Geotechnical engineering or engineering geology MSc

- [May not be needed for entry roles]

Hydrogeology MSc

- Applicable to certain roles/sectors

'Geo-energy' and similar MSc's

- Geology degree not required
- Examples: Geo-energy (Edinburgh), Geo-energy with data science/AI (Imperial College)

Roles & Sectors

Energy geoscientist

- Wide range of hands-on geoscientist 'integrator' and specialist roles
- Sectors inc. oil/gas, CO_2 storage, geothermal, nuclear waste, (wind)
- Companies inc. integrated & independent energy companies, consultancies, service co's

Ground engineering/ geotechnical geoscientist

- Roles in engineering consultancies, utility and geotechnical companies

Hydrogeologist

- Consultancies, radwaste, parastatals & geothermal

Typically non hands-on and non-geoscientist roles

- E.g. sales, policy, analyst, advisory, commercial, software, etc.
- Sectors – NGO's, energy, environmental, civil eng…

Click to return to info pack

→ Common route

⇢ Less common route

"I'm happiest when working with others, coaching, or acting collectively to solve a problem"

Geochemist

CO_2 storage subsurface technology programme lead

Stephanie Houston

bp

Role Description

The CO_2 storage subsurface programme aims to answer longer-term questions associated with storing CO_2 underground. I connect with operational colleagues to develop the strategic research plan and ensure that projects are completed to reduce scientific uncertainty. I guide a team of multidisciplinary subsurface experts, providing them with coaching and support as well as prioritising their activity. I collaborate with industrial partners and academia to enhance collective industry expertise and future-proof technology delivery.

Career Story

- A levels: Geology, Chemistry, French, Music
- BSc: Geology, MSc: Geochemistry, PhD: Aqueous Geochemistry
  I love science, being outdoors and bringing information together to see the big picture
- Career – bp Upstream Technology:
  - 2005 – bp internship with enhanced oil recovery (EOR) labs team; *I tried working in a real business environment and decided to move out of academia*
  - 2006 – Graduate petroleum systems geologist; *a year spent learning a completely new discipline and applying my existing expertise*
  - 2007 - Graduate geochemist: enhanced oil recovery lab technician; *hands on experience in the lab, feeding into a broader research project*
  - 2009 - EOR aqueous geochemist + deployment field trial support in Alaska; *six weeks spent in an Anchorage winter, learning how field scale projects happen*
  - 2013 - Geochemistry subject matter expert, EOR + CO_2 storage; *actively using my PhD research to deliver new technology*
  - 2021 - Low carbon concepts Team Lead; *first people leadership role, maintaining technical insights*
  - 2022 - CO_2 storage subsurface technology programme lead

Subsurface Task Force

Day to day highlights

- Hybrid part-time working pattern, with 1-2 days in the office and Wednesdays off
- Manage and prioritise the CO_2 storage programme portfolio, including activity across all subsurface disciplines
- Work with team members to develop and deliver project plans
- Meet with business stakeholders to understand their technical needs
- Spend time with team members to provide coaching and general support
- Look after and allocate the research budget, including working with 3rd parties to carry out additional research
- Develop and manage intellectual property strategy
- Provide aqueous geochemistry subject matter expertise and assurance
- Occasionally attend conferences and external meetings

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"The best bit of being a geologist is that you never stop learning"

Geologist

CO_2 storage global screening

Angus Murdoch

bp

Role Description

In the CO_2 storage Global Screening team, we are looking for the next places to store CO_2 - enabling companies to permanently remove their carbon emissions. My job is to identify suitable rock formations that meet a whole host of criteria so that we can safely and permanently store CO_2 underground. To do this, my team and I produce integrated data analyses, with close collaboration with a range of stakeholders in many different parts of the business.

Career Story

- IB: Maths, Chemistry, Economics (Higher Level)
  English, Italian, Physics (Standard Level)
- University: Integrated Masters in Earth Sciences,
  → specialisation in Geochemistry, Climate Science and Oceanography
- Career – bp:
  - 2016 – 3 month internship; *learnt the basics, and got a feel for what a career in a company like bp would be like*
  - 2017 – Graduate geologist; *3 x year long roles across different parts of the business to gain a broad set of experiences*
  - 2020 – Production Geologist; *developed skills in interpretation, monitoring and surveillance of one of our key producing fields*
  - 2022 – Digital Geologist; *developed software and frameworks to support our digital transformation agenda*
  - 2023 – CO_2 storage screening geologist

Subsurface Task Force

Day to day highlights

- Work to build and develop future CO_2 storage businesses
- Provide the technical analysis to high-grade prospects into our 'opportunity hopper'
- Clear articulation of the subsurface with financial colleagues to understand how the geology translate into business value
- Close collaboration with inspiring colleagues
- Coach and mentor colleagues to help them develop skills in CO_2 storage and grow capability within the organisation
- Self-development – training courses, field trips and conferences

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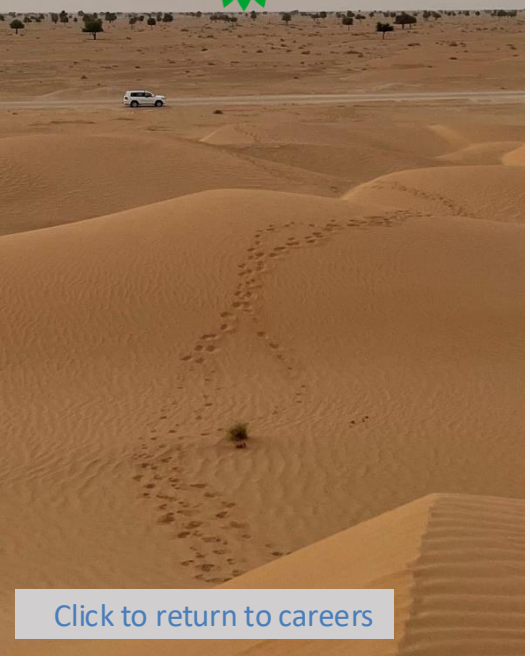
"I wasn't sure what I wanted to study so I was looking for something that gave me options"

Geologist

Eastern hemisphere well planning geologist

Declan Miller

bp



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Role Description

I am currently working on planning new wells in Egypt. As a graduate geologist, there is a large focus on breadth of experience, so I have worked in roles from CO_2 storage in Houston to mapping hydrocarbon reservoirs in Azerbaijan! There is a significant focus on learning and development, so I have had many opportunities to attend training courses and visit sites to build my overall geological understanding. I'm fascinated by the energy industry and it's great to see how my own roles can have direct impact on global issues.

Career Story

- A levels: Geography, Chemistry, Physics, Maths
- MSc: Earth Sciences

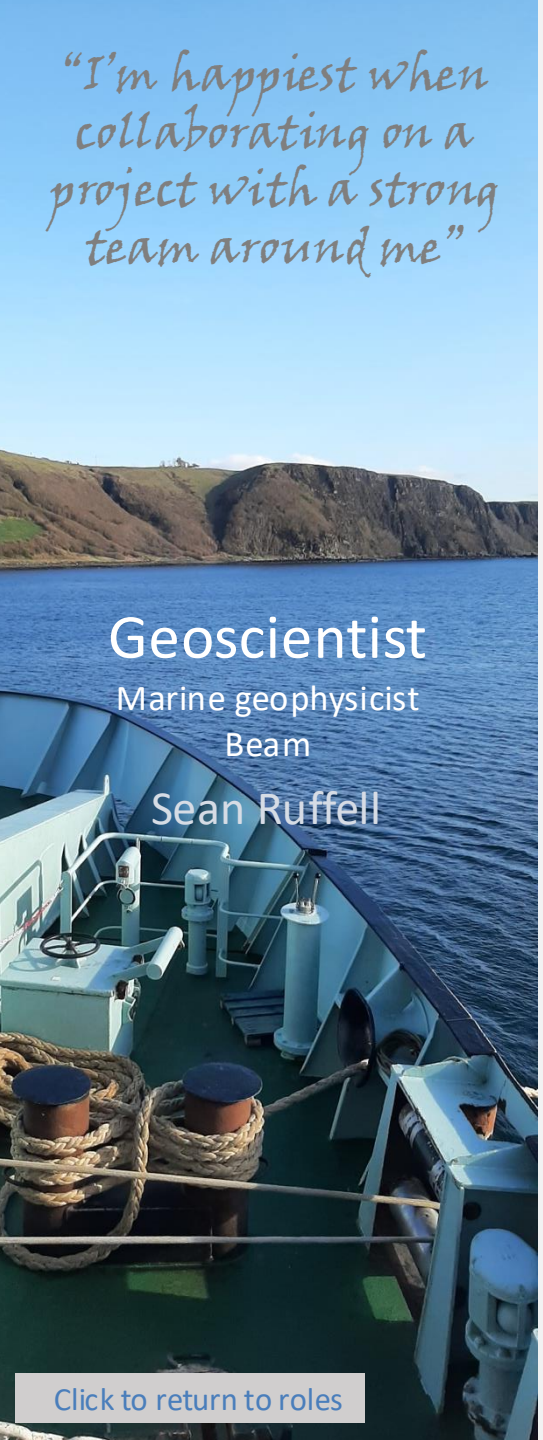
I loved the process of understanding our planets geological history and using that to understand current issues surrounding climate change. I learnt about the importance of geology as the key to unlocking this knowledge and understanding.

- Career:
  - ↓ 2020 – bp geology internship; 6-week internship working on a project in Iraq
  - ↓ 2021 – MSc in CO_2 storage ; modelling potential for CO_2 storage in layered reservoirs
  - ↓ 2022 to date: graduate geologist; *variety of roles over the course of 3 years, gaining experience in exploration through finding subsurface CO_2 stores in the UK and US, building an understanding of reservoir dynamics in Azerbaijan, and planning new wells in Egypt.*

Day to day highlights

- I typically head into the office 2-3 days a week. Being early on in my career, building up a network of contacts is so important, and I much prefer to do this by chance interactions bumping in to people around the office!
- I can generally break down all my roles into a process of interpreting various pieces of data, and attempting to understand the uncertainties and risks, to then communicate this to a wide range of disciplines. This involves using specialist pieces of software, as well as some creative flare to create cartoons/presentations/data tables that convey this information clearly.
- As a geologist, I'm gaining valuable data interpretation and communication skills that will be essential for wherever my career path takes me in the future.I would love to be able to make an impact on the energy industry to enhance the transition to net zero.

Subsurface Task Force



Role Description

I am responsible for acquiring and interpreting geophysical marine datasets. This includes a variety of seismic, sonar and magnetic data. As a team, we will interpret this data and integrate with geotechnical data of the seabed and the subsurface. This interpretation allows us to create a ground model used to inform wind turbine engineers of the seabed and subsurface characteristics that are crucial to their foundation and cable designs.

Career Story

- A levels: Geology, Geography, Philosophy, Economics
- MSci: Geology, PhD: Marine Geohazards [self-terminated for personal reasons]
- Career:
  - 2019 – Durham University, Marine Geohazards PhD. *I enjoyed the research and research cruises but ultimately did not enjoy writing up a PhD. It is during the PhD write up I decided to terminate the PhD and move out of academia*
  - 2023 – Marine Geophysicist at Fugro; *9 months spent learning a new discipline and applying my existing expertise as a marine geoscientist with an interest in geohazards*
  - 2023 – moved into a new company as a Marine Geophysicist; *a fun and challenging learning curve as I took on the interpretation of whole windfarm projects. Being fully remote allowed me to move to Brighton, a city I love*
  - 2024 (summer) – offshore acquiring a combination of different geophysical datasets for a large offshore wind farm in the North Sea; *after subsequent months of data interpretation, I was challenged with leading the subsurface team with deliverables for this project*
  - Present – continuing my role as a Marine Geophysicist at Beam; *working closely with software engineers to develop Machine Learning and AI tools to streamline geophysical interpretation. This has been an eye opening and exciting opportunity to learn new coding skills and communicate interesting science to teams outside of geophysics*

Day to day highlights

- Working from home means I can live where I want.
- I get the opportunity to participate in geophysical projects from acquisition to interpretation to ground modelling. This is something I really enjoy and, in my opinion, understanding each step is crucial to the success of a lot of projects.
- Working with a skilled and passionate team. I believe one of the most important pieces about any job is the people you work with, and I am lucky to have a great team around me.
- Attending conferences and training events
- Working with software engineers that bring me outside of my geophysical comfort zone.

"I'm happiest when working in small cross-disciplinary teams to solve big challenges of national importance"

Geoscientist

Geoscience technical lead & disposal core science theme lead

Joshua Griffiths

United Kingdom National Nuclear Laboratory

Role Description

Geological disposal is the process of isolating radioactive waste deep underground for hundreds of thousands of years. In 2022 I led the strategic case for the UK National Nuclear laboratory to establish a research theme on radioactive waste disposal. Today, I manage a broad research and development portfolio which requires a diverse and cross-disciplinary team. A key activity is supporting the development of the next generation of technical experts.

Career Story

- A levels: Geology, Geography, Physical Education
- MESci: Geology & Physical Geography, PhD: Environmental Science
- Career
  - ↓ 2017 Postdoctoral Research Associate, University of Liverpool; *reservoir quality assessment of the Smørbukk gas field, Mid Norwegian Shelf*
  - ↓ Career – Geoscientist, bp (challenge programme)
    - 2018 – Africa New Ventures; *exploring on the West African Transform Margin*
    - 2019 – West Africa Exploration; *play fairway analysis in Cote d'Ivoire*
    - 2020 – North Sea; *mapping Triassic and Jurassic geology in Central North Sea*
  - ↓ Career – Geoscientist, United Kingdom National Nuclear Laboratory
    - 2021 – Geologist; *focus on environmental restoration of legacy nuclear sites*
    - 2022 – Geoscience Technical Lead; *strategy development for the disposal research theme*
    - 2023 – Disposal Core Science Theme Lead; *leading a diverse research and development portfolio related to geological characterisation, engineered barrier systems, and reactive transport modelling.*

Day to day highlights

- In the UK, oil and gas companies tend to operate in Aberdeen and/or London; wanting to bring my children up in the northwest with family and friends meant leaving the sector.
- Today, I work full-time, 1-2 days in the office per week, walk our German Shepherd dog at lunch, and drop off/pick up my daughter every day at nursery.
- I provide geoscience subject matter expertise and assurance and manage UKNNL's research theme on radioactive waste disposal.
- Key research theme activities include strategy development, stakeholder engagement, partnership engagement, bid submissions, the preparation of UK Research Institute (UKRI) proposals, and the supervision of MSc and PhD students.
- The most rewarding part of my day is engaging with early career workers and PhD students and discussing complex technical challenges which require new thinking.

Subsurface Task Force

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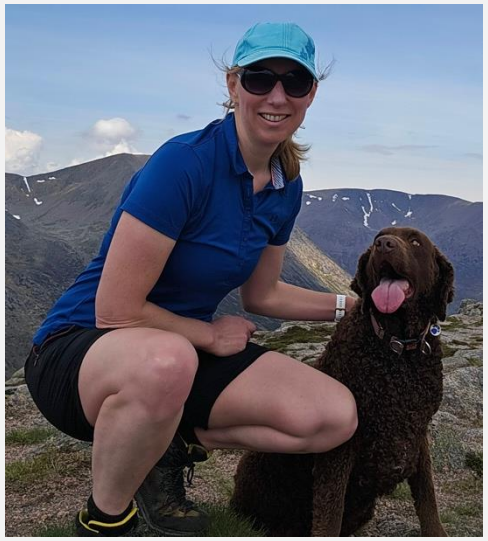
"I'm happiest when undertaking challenging projects within a supportive & collaborative team"

Geoscientist

West Africa geoscientist

Katrina Court

CNR International



Role Description

The evaluation of oil and gas prospects requires both geology and geophysics. I use these techniques to locate, evaluate, and develop prospects within the Ivorian offshore basin, West Africa. I am a project leader of a multi-disciplinary team comprising subsurface, drilling and completion experts to complete prospect evaluations and development planning on time, while remaining focused on safety. I also mentor an undergraduate student who is just starting their journey into the fascinating world of geology.

Career Story

- BSc: Geology & Petroleum Geology, MSc: Integrated Petroleum Geoscience
  I love being in the mountains and looking around at the immense forces & processes that have created the landscape that I enjoy scrambling over with my dogs.
- Career:
  - 2000 – Laboratory Technician, ALS Chemex Western Australia; *Collecting and analysing soil samples from surrounding gold mines in the Western Australian outback*
  - 2002 – Radio Operator, Oil & Gas Platforms, Jack-up and Semi-Submersible drilling rigs; *a move into communications, emergency response preparedness and execution*
  - 2018 – Career change – Undergraduate BSc Geology & Petroleum Geology; *Scholarship with CNR International including summer internships within the subsurface team.*
  - 2023 – MSc and part-time employment at CNR International; *Using my research skills to correlate stratigraphic zones within the overburden to past drilling hazards*
  - 2024 – CNR International; *Project lead for the evaluation and development planning of gas prospects utilising my skills that I acquired during my time as a Radio Operator to communicate between multi-disciplines while continuing to develop my technical abilities in both geology and geophysics.*

Subsurface Task Force

Day to day highlights

- Fulltime work pattern at the office in Aberdeen with Fridays off during summer
- Work with team members to develop and deliver project plans
- Regular meetings with CNR management to present results and discuss future workplans
- Meet with business stakeholders to discuss the technical work that has been undertaken to gain alignment and answer any queries that they may have.
- Spend time with my mentee giving guidance and general support
- Working with 3rd parties to carry out additional research to reduce risk and uncertainty
- Attend conferences and international as well as local courses
- Work travel – Just back from a trip to Abidjan, Ivory Coast, to log core and prepare samples for further evaluation. Hoping to go offshore West Africa to assist with an upcoming drilling campaign.

Click to return to roles

"I'm driven by understanding the "Why?" and "How?" of things. I learn best through doing and experiencing and I'm happiest when I'm exploring, or creating, or learning something new"

Geoscientist

Senior technical advisor CO_2 storage

Simon Shoulders

bp

Role Description

- Providing technical leadership across a global portfolio of CO_2 storage projects. Activities range from focused technical work through coaching and delivering through others to project framing/risk management and technical assurance.
- Supporting CO_2 storage business development and policy and advocacy work.
- Involvement in internal and external discussions on CO_2 storage strategy and long-term risk management.

Career Story

- A levels: Geology, Maths, Physics & Chemistry
- MESci Earth Sciences, PhD: Injected sands & basin-scale fluid movement
- Career:
  - 2000-04 - Terradat Geophysical UK (field geophysics for civil engineering)
  - 2004-present – bp
    - ↓ 2004-8: Graduate geoscientist working one-year assignments in operations and well site geology, exploration, development and production in UK and Trinidad. *Getting a grounding in the full lifecycle of a hydrocarbon project with an emphasis on operational experience*
    - ↓ 2009-14: Exploration and appraisal geologist for projects in Egypt and Australia. *Including leading planning and execution of play opening discovery well in Egypt.*
    - ↓ 2015-16: Exploration advisor Reliance / bp joint venture in Mumbai India. *Fantastic experience working in a new cultural and corporate environment.*
    - ↓ 2016-17: Sedimentology, stratigraphy and reservoir quality specialist
    - ↓ 2018-22: Senior geologist carbon capture and storage. *Steep but very exciting learning curve working with a very different fluid!*
    - ↓ 2022-present: Senior technical advisor CO_2 storage. *Working across the full value chain.*

Day to day highlights

- Working with teams and projects across the globe.
- Working within and across multidisciplinary teams. *We all hold different pieces of the puzzle!*
- Taking a systems thinking approach to uncertainty, risk management and developing solutions to project challenges. *Being involved in lots of different projects in different capacities means work is never boring!*
- Finding ways to influence effectively in complex joint venture settings. *Putting people first and building relationships is key to moving projects forwards.*
- Working with stakeholders externally to develop CO_2 storage policy and regulation and shape long-term risk management approaches.
- Hybrid working between office and home.

Subsurface Task Force

Click to return to careers

"I like solving technically challenging problems using my experience and acquired skillset"

Structural Geologist

geologist & geomechanics specialist

Tim Wynn

Role Description

As I work for a consultancy, my role is quite varied. Longer term projects of 2 months to 1 year plus often are on oil/gas reservoir characterisation and modelling, sometimes at the basin scale plus reserve (produceable resource) audits of groups of assets or whole companies. Shorter projects of weeks or 1-2 months are usually specialised data analysis and/or modelling, due diligence reports for investors, peer reviews and training course development and delivery. The work can be solo, in integrated teams within TRACS or with the client.

Career Story

- A levels: Geology, Geography, Maths
- BSc: Geology, PhD: Structural Geology
- Career – GeoScience Limited and TRACS International Limited:
  - 1994 – Structural Geologist working on nuclear waste disposal projects; *tasks related to structural and geomechanical interpretations of core, openhole logs and image logs*
  - 1997 – Geologist working on oil and gas projects; *fault and fracture interpretations related to hydrocarbon developments*
  - 2000 - Reservoir Geologist; *construction of reservoir models, input to well planning, geology training courses, reserves audits*
  - 2010 – Lead Geologist; *Project management, recruitment, construction of reservoir and geomechanical models, peer reviews, audits, training courses*
  - 2014 - More energy transition work especially CO_2 storage geomechanical model building
  - 2017 – Principal Geologist & Geomechanics Specialist; *rebalancing to more technical roles with a focus on fractured reservoir characterisation and modelling and geomechanical modelling of wellbores and reservoirs for hydrocarbon developments, CO_2 storage, gas storage and geothermal*

Day to day highlights

- Four-day week with 2 days in the office and Fridays off
- Interact with colleagues and clients via online and in-person meetings
- Manage technical teams delivering asset evaluations or reservoir characterisation and modelling studies
- Build geological and geomechanical reservoir models using well log and seismic data and interpretations
- Simulate geomechanical processes using reservoir simulator pressure +/- temperature outputs
- Present results to clients and write project reports summarising methods, results, conclusions and recommendations
- Write costed proposals to generate new business
- Attend and help run conferences, edit and review technical journal papers

Click to return to roles

"I'm happiest when helping others to address difficult challenges or to promote new approaches"

Rock Physicist

Senior scientific research advisor

M. Reza Saberi

GeoSoftware™

Role Description

Rock physics is an integrating tool to connect different subsurface disciplines. It helps people working in areas like petrophysics, geophysics, geology, petroleum engineering and geomechanics share their science with each other by building a bridge using physics principles. It is integrated within each discipline and can bring them all together to make a more complete, accurate image of the subsurface reservoir. I use rock physics to get that integration in different projects.

Career Story

- BSc: Exploration Mining Engineering, MSc: Petroleum Geoscience, PhD: Rock Physics
  I love science, being outdoors and bringing information together to see the big picture
- Career:
  - 1996 – Exploration engineer; *applying different exploration techniques including geophysics to explore for mining purposes*
  - 2003 – Geophysicist, *working on different aspects of geophysics in the exploration and development projects*
  - 2007 – Rock physics Ph.D. researcher; *applying rock physics theories on different aspects of seismic reservoir characterization*
  - 2010 – Geophysics Project Manager; *managing exploration projects globally for oil and gas reservoirs*
  - 2013 – Rock Physics Subject Matter Expert, advising r*ock physics for software development and characterization projects*
  - 2017 – Technical Product Manager; *people leadership role, maintaining technical insights and developing software*
  - 2022 – GeoSoftware - Senior Scientific Research Advisor; *advisor on seismic reservoir characterization software and projects*

Day to day highlights

- Hybrid working pattern
- Work with team members to perform different projects
- Meet with business stakeholders to understand their technical needs
- Spend time with team members to provide coaching and general support
- Develop software and advise on its use
- Provide rock physics subject matter expertise and assurance
- Occasionally attend conferences and external meetings
- Mentoring and coaching M.Sc. and Ph.D. students

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"I'm happiest when I'm problem solving with the team, designing a new solution for a client with remote sensing data"

Senior Remote Sensing Scientist

Satellite Mapping

Alice Burrell

VIRIDIEN

Role Description

The imagery and data services team in satellite mapping act as support to the other internal teams within the company, selecting, processing and providing satellite data and remote sensing expertise to the group. I work with the teams to ensure a seamless integration of imagery, analytics, and derivatives into projects. I also work with external clients integrating remote sensing data into their projects and developing new services. I collaborate with academic and industrial partners which is paramount to ensure any new services we launch utilising remote sensing data meet the evolving needs of the industry and can be widely adopted.

Career Story

- A levels: Geography, Maths, Art, Music
- BSc: Physical Geography, *I was really interested in how the world works, and the interactions of the natural environment.*
- Career:
  - 2018 - Satellite Products & Services Operator with Airbus Defence and Space; *First commercial role after university, working with the team on daily satellite tasking, image analysis and quality assessments.*
  - 2021 - Satellite Operations Team Leader with Airbus Defence and Space; *Moving into a team leadership role working with the team to resolve anomalies in satellite operations and campaign management.*
  - 2022 - Remote Sensing and Imagery Specialist with Viridien Satellite Mapping; *Making the switch from upstream space operations to downstream satellite imagery analytics. This role also involved the researching and implementing of new satellite technology and analysis techniques into our current workflows.*
  - 2024 - Senior Remote Sensing Scientist with Viridien Satellite Mapping; *Expanding on my previous role and creating new services with clients using remote sensing data.*

Subsurface Task Force

Day to day highlights

- Providing remote sensing expertise to clients ensuring appropriate imagery, analytics or derivatives are integrated into internal and third-party projects.
- Development of Imagery processing techniques for a range of data types.
- Integrating new data types into existing and new services.
- Development of new services and products utilising earth observation and terrestrial data.
- Working and managing bid and proposal processes.
- Leading solution development with commercial imagery opportunities.
- Knowledge sharing and training across teams.
- Occasionally attend conferences

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"I love science, geology & working with people to stitch together a story & ultimately understand the business impact of the work we conduct"

Subsurface Senior Manager

head of subsurface low carbon solutions – Europe

Peter Ablard

equinor

Role Description

My role is to guide and support a multidisciplinary team of technical subsurface experts who characterise and develop CO_2 storage opportunities in core countries across Europe. As a group we integrate subsurface data, generating new storage opportunities and developing our assets. I interface with internal and external stakeholders including our drilling and mid stream colleagues and the authorities in multiple countries as we try to build a CO_2 storage value stream and portfolio of opportunities to help decarbonise Europe.

Subsurface Task Force

Career Story

- A levels: Geology, Geography, Business Studies and Psychology
- BSc: Geology, The University of Edinburgh
- MSc: Petroleum Geoscience, The University of Aberdeen
- Career:
  - 2008 - 2014 – Chevron – Geologist; *I worked my way through the Chevron Graduate Scheme spending time across the oil & gas value stream, from exploration to development, drilling wells, spending time offshore and characterising oil and gas fields*
  - 2014-2017 – ConocoPhillips - Development Geologist; *I was seconded to Conoco where I supported the development of a major gas field and got great exposure to a different organisation and ways of working*
  - 2017 – 2020 – Chevron/Equinor – Senior Development Geologist; *I spent 3 years characterising an oil field and building geomodels to optimise its development before the asset was bought by Equinor – a deep technical role that helped cement my foundation*
  - 2020-2021 – Equinor – Project & Discipline Leader; *first people leadership role responsible for leading a team of technical subsurface experts, and being the technical focal point for Equinor Geologists and Petrophysicists*
  - 2021-2023 – Equinor – Subsurface Competence Centre Manager; *pure people leadership role growing and leading the UK subsurface team – a fun but challenging role*
  - 2023 onwards – Equinor – Head of Subsurface Low Carbon Solutions*; back to technical leadership but this time in a new value stream leading a team developing a portfolio of CO_2 storage opportunities across Europe - a dream job!*

Day to day highlights

- Working in a fast-paced environment where geopolitics impact decisions regularly
- Supporting the team to build new ways of working in a new value stream
- Working with all subsurface disciplines and with stakeholders across the business – you have to apply your geoscience experience but also need a much more commercial mindset
- Working from exploration to field development and execution – drilling wells, shooting seismic data and accessing new licenses making every day different and exciting!
- Working closely with an energised team who have a real sense of purpose

Click to return to careers

"I'm happiest when balancing my passions and life outside of work with my Geological work"

Geologist

production geologist

Katie May

Shell

Role Description

As a production geologist I provide the geological input to the planning and safe delivery of our wells. I maximise the value of our producing assets through Well, Reservoir and Facilities Management which includes reservoir modelling. I identify and mature new in-field hydrocarbon maturation opportunities and support the safe and efficient abandonment of wells. The geologist is a key integrator in an asset, bringing together multi-disciplinary data to solve complex problems. We are often asked to be natural team leaders for projects, such as Subsurface or Opportunity Leads who lead the delivery of integrated subsurface activities.

Subsurface Task Force

Career Story

- *Education chosen on a love for being outdoors, amongst mountains and nature, and wanting to learn more about their creation.*
- A levels: Geology, Geography, Biology, English Literature
- BSc: Geology; MSc: Exploration Geophysics
- Career – Shell UK 2015 - 2025:
  - ↓ Shell UK *Geophysics internship reviewing seismic reprocessing differences between seismic datasets*
  - ↓ Shell UK Geologist *influencing oil/gas field operators to maximise value to Shell*
  - ↓ Shell UK Geologist *working on the full asset lifecycle from field development, to infill drilling to cessation of production.*
  - ↓ Shell UK Operations Geologist *executing challenging wells from long horizontal wells in severely depleted reservoirs to navigating extreme drilling windows in high pressure high temperature wells.*
  - ↓ Shell UK Opportunity Manager / Subsurface Well Delivery Lead – *managing the delivery of exploration wells to delay end of field life.*

Day to day highlights

- Part-time working – 80% role to optimise work-life balance. This enables me to dedicate time to the progression of women's mountain biking, whilst also creating time for things that make me happy like biking, running and adventures.
- Hybrid working – 2 days in the office, 2 days from home
  - Balancing the benefits of face-to-face connection with the flexibility of working from home
- Taking advantage of flexible working locations with working a month abroad
- Maturing some of the most challenging wells drilled in the North Sea
- Directly impacting the UK's energy security
- Work with amazing team members to create innovative solutions to complex problems
- Challenging my technical and professional capabilities
- Expand my knowledge out with geology to be able to integrate multi-disciplinary data

Click to return to careers

"I get a buzz out of varied work, learning and helping others learn. And rocks, of course!"

CO_2 Transportation & Storage Stewardship Lead

Zoë Sayer

North Sea Transition Authority

Role Description

The Regulator's CO_2 Transportation and Storage Team steward carbon storage licences as they progress towards a storage permit. We also develop guidance, stewardship expectations and tools, and support geocientists who look after the first storage licences. As Stewardship Lead, I manage the stewardship of licences through permit applications, and coach and mentor others in the team. I also ensure our work is in line with regulations and published guidance, helping to hold licensees to account for deliverables they have signed up to.

Subsurface Task Force

Career Story

- A levels: Maths, Further Maths, Physics, Chemistry, General Studies
- BSc: Geology, PhD: Carbonate Sedimentology in a Developing Foreland
- Career:
  - 1995 – Robertson Research International, sedimentologist & reservoir geologist; *sedimentology, sequence stratigraphy, reservoir analysis and lots of trips abroad*
  - 2001 – Integrated Reservoir Solutions, Senior Carbonate Geologist; *as above*
  - 2002 – Postgrad Cert. of Education - secondary chemistry; *low oil price led to retraining!*
  - 2003 – Chemistry teacher; *general science to year 11 (S4), geology years 12-13 (S5/6)*
  - 2005 – Career break! *While my kids were small, I wrote a series of books and ran a website on off-road pushchair walks (and learnt Welsh)*
  - 2009 – Consultant for C&C Reservoirs; *data assimilation and report writing (home working)*
  - 2012 – bp Geologist - N Sea; *development geologist in multidisciplinary teams - clastic and chalk fields, production geology, new well delivery, well interventions to improve production*
  - 2018 – bp Lead Geologist - W of Shetland and N Sea Geology Discipline lead; *as above with additional coaching, resourcing and assurance responsibilities*
  - 2021 – bp Geology Discipline Leader N Sea & Angola; *line manager for 12 geologists across 2 continents providing coaching, assurance and technical guidance on very varied fields*
  - 2022 – North Sea Transition Authority (NSTA - regulator) Senior Geoscientist; *stewarding petroleum licences before moving into carbon storage in 2023 – skills transfer into regulation and carbon storage*
  - 2024 – NSTA Stewardship Lead; *lead the stewardship of CO_2 storage licences to permit and line manage a small technical team within the wider CO_2 transport and storage team*

Day to day highlights

- Very varied work which can change with little notice – flexibility required!
- Manage the stewardship of carbon storage licences through permit applications
- Work extensively with legal, finance, licensing, decommissioning and new ventures teams
- Familiarity with regulations and guidance is a must
- I use the technical expertise gained in previous roles to assess Licensee's documents in support of licence milestones and permit applications
- Hybrid working pattern, with 2 days in the office and a compressed working week

Click to return to careers

"I'm happiest when working analysing geological data and collaborating with colleagues to solve complex problems."

Geologist

geotechnical engineer

Georgie Harbottle

sse Renewables

Role Description

As a geotechnical engineer supporting offshore wind projects, I am responsible for assessing subsea geological and geotechnical conditions to manage ground risk for offshore wind projects. This involves overseeing offshore ground investigations, interpreting geotechnical data and working within multi-disciplinary engineering teams to support the planning and execution of key engineering activities.

Subsurface Task Force

Career Story

- A levels: Maths, Chemistry, Biology, English
- BSc (Hons): Geology and Petroleum Geology, University of Aberdeen
- Career:
  - Onshore Geotechnical Engineer 2018-2019
    - 2018-2019: Graduate Geologist, FWS Consultants; *hands on experience logging and sampling soil and rock*
    - 2019: Earth Science Specialist, Contaminated Land Team, Atkins; *supervising site investigations for contaminated land assessments and remediation*
  - Offshore Geotechnical Engineer 2019 - present
    - 2019-2021: Graduate Geotechnical Engineer, DeepOcean; *conducting installation and burial assessments for subsea cables and pipelines*
    - 2021-2023: Senior Geotechnical Engineer, MarineSpace; *working within a small team to establish the subsea cable geotechnical department*
    - 2023 – present: Geotechnical Engineer, SSE Renewables; *assessing subsea geological and geotechnical conditions to manage ground risk for offshore wind projects*

Day to day highlights

- 9-day fortnight working pattern with every other Monday off
- Ability to work from home a lot of the time and travel to various office locations as required
- Provide subsea cable burial subject matter expertise
- Working within multi-disciplinary engineering teams, including metocean, structural, electrical and mechanical engineers
- Engage with offshore site investigation contractors, stakeholders and consultants by attending meetings and conferences
- Contribute to industry-leading research
- Champion mental health and wellbeing at work in my capacity as a Mental Health First Aider

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Engineering Geologist

Sean Murchie

Role Description

I provide ground engineering technical support to onshore renewable projects including include hydro, wind and solar and battery developments. The role also involves the inspection, assessment and maintenance of existing assets such as tunnels and slopes to help identify/manage geotechnical hazards and and reduce geotechnical risk. My role involves carrying out technical reviews, inspections and assessments as well as liaising with contractors and consultants.

Career Story

- Highers / Advanced Highers: Geography, Biology, Chemistry, English, French
- MGeol (Hons): Geology; MSc: Engineering Geology; CGeol (Chartered Geologist)
- Career:
  - 2013 – Internship with Schlumberger Petrotechnical Services in Aberdeen, processing and interpretation of geological and geophysical logs. *Experience working in a real business environment, gaining useful technical experience in the oil and gas industry*
  - 2014 – Geodata Analyst, Perigon Solutions in Aberdeen. Processing and managing subsurface borehole data and developing Perigon's main in-house technical software
  - 2015 – Engineering Geologist, Fairhurst, Edinburgh; ground investigation (GI), geotechnical design, geotechnical assessments, site supervision of GI and construction works; *practical experience involving both office and site-based work.*
  - 2022 – Project Engineering Geologist, SSE Renewables, Perth: mainly providing technical support to the Coire Glas Hydro Pumped Storage Project. Also involved with other onshore renewables development and existing geotechnical asset management (including asset inspection and assessment).

Day to day highlights

- Blend of office based and site-based work, working on some unique projects such as the Coire Glas Exploratory Works (a 1.2km exploratory tunnel constructed between 2023 and 2024 to investigate the ground conditions at the proposed site)
- Liaising with contractors and consultants from across industry to deliver projects
- Work with team members to provide ground engineering technical support
- Work with team members from a variety of disciplines
- Provide mentorship to graduates and promote professional development within the team

Click to return to roles

"I enjoy working at the heart of the operation and collaborating to solve critical problems. There are always opportunities to learn"

Geologist

petroleum engineer

Zoë Adele Cumberpatch

equinor

Role Description

As an engineer I am often the link between subsurface and drilling teams, so it is vital to understand the risks and communicate uncertainty. Our inter-disciplinary teams ensure safe and efficient planning and execution of exploration wells. My role includes pore pressure and wellbore stability prediction, working with contractors to optimise data acquisition and following up well operations.

Subsurface Task Force

Career Story

- A levels: Geology, Geography, Maths, Biology
- BSc: Geology (University of Leeds), MSc: Petroleum Geology (Imperial College, London), PhD: Deep Water Sedimentology and Salt Tectonics (University of Manchester)

  I have always been curious about landscapes and how they were formed, geology was an excellent opportunity to combine and apply my love for maths, science and geography.

Career:

- 2011: 1 week of work experience at the British Geological Survey, Nottingham,
- 2014-2015: 'Year in Industry' *working as a palaeogeographical mapper at GeTech, in Leeds as part of my degree programme*
- 2017: 3 months MSc project internship with Statoil (now Equinor) UK
- 2021: Graduate Petrophysicist at Equinor ASA, *in Harstad Norway, working mostly in exploration in the Norwegian Sea and Barents Sea, evaluating downhole digital data acquired in wells to assess rock quality, fluid content, etc.*

  Graduate rotations into research (designing an app to increase the use of subsurface analogues) and performance tracking of exploration results
- 2025: Switched from petrophysics to petroleum engineer to gain more offshore experience, operational competence and continue in the heart of the business.

  Whilst I presently don't have geologist in my job title, my subsurface understanding and ability to assess uncertainty and risk allows me to have a meaningful impact in my role

Day to day highlights

- Working with experts and being able to leverage their knowledge
- Being involved in inter-disciplinary teams with people from all around the world
- Pushing myself to continually learn and develop, and try new roles and responsibilities
- Living in a beautiful part of Norway, where the Northern Lights are a daily occurrence and the outdoor activities are second-to-non
- Being one of the first to know 'what is going on down there ?!' whilst drilling a well

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"I particularly enjoy using my role at a major developer for communicating and supporting our next generation of geoscientists"

Geophysicist

technical authority

Roger Birchall

sse Renewables

Role Description

An overview of all offshore geo-physical related activities at SSE, from initial advice on geophysical requirements for survey with which to build a reliable ground model to understand and reduce our engineering risk, to encouraging innovation via new equipment and techniques. It requires me to stay close to the industry suppliers by attending conferences and exhibitions to keep up with technical advances and innovations. A further part of the role is to extended the influence and role of SSE with external stakeholders such as schools and universities.

Career Story

- A levels: Geography, History, Economics and General Studies.
- BSc: Earth Science, MSc: Marine Geotechnics, MSc: EIA and Management Systems

I love being able to look at geological exposures and relate to offshore geophysical survey

- Career:
  - 1991 – Temporary job as land seismic surveyor*, live and work in France & Switzerland*
  - 1993 – Joined Gardline as an offshore geophysicist, *offering more travel worldwide*.
  - 2005 – Development Geophysicist at Gardline, *expert level, developing techniques and training for the next generation of geophysicists.*
  - 2008 – Geophysical Manager at Gardline; *leading and growing the geophysical team*
  - 2012 – Geophysical Consultant at RPS - *offshore wind/cable routes to rig site surveys*
  - 2016 – Geophysical Contractor; *expanding my horizons as I move around the industry and taking my expertise where it was needed, and with that the chance to learn more*
  - 2021 – Geophysical Technical Authority at SSE Renewables *using my expertise to guide and lead survey strategy, but also to influence industry and support academia*

Day to day highlights

- Hybrid working pattern, with regular visits to the office to stay connected to the team.
- Manage and strategize our offshore geophysical programme portfolio.
- Work with expert team members to develop and deliver project plans.
- Meet with the various offshore wind projects to understand their technical needs.
- Spend time with team members to provide expertise, general support and learn.
- Representing SSE Renewables at various conferences, technical meetings and exhibitions.
- Develop and communicate interesting ways to explain geophysical survey to none experts.
- Occasional challenging project that needs some thinking about and liaising with other industry connections to develop.
- Working with academic institutions, including BGS to get our data out there for further study (expanding its use from our day-to-day understanding of ground risk engineering)

Subsurface Task Force

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"Sometimes you have to keep it simple, do the basics well and recognise you cannot do everything. You may find this allows new ideas to grow"

Petrophysicist

Alice Porter
(née Pease)

ADURA

Role Description

The Mariner Field area subsurface development group is working to characterise this complex field through subsurface data integration, interpretation and modelling. Having recently moved from a well planning role, the development group allows capacity for mid- to longer-term reservoir management studies and target maturation where petrophysical data plays a central role. If I have clearly conveyed assumptions and limitations of formation evaluation data to relevant stakeholder – I will have done my job well. It really is all about communication!

Subsurface Task Force

Career Story

- A levels: Geography, Maths, Physics
- Aberdeen Univ.: BSc: Geology, MSc: Integrated Petroleum Geology
- Career:

↓ 2014 Maersk Oil - Graduate Petrophysicist (Aberdeen, Copenhagen, Qatar)
worked on field abandonment petrophysics (Central North Sea fields, UK)

↓ 2018 TotalEnergies - Subsurface Operations
F*ollowing a wellsite geology training programme, I was wellsite geologist on several UK high pressure/temperature fields*
Advanced Log Interpreter (petrophysics services team), Paris

↓ 2022 Net Zero Technology Centre (NZTC): Project Engineer *stewarding technology development projects with a digital & data architecture premise, funded by the UK & Scottish Governments to accelerate the energy transition*

↓ 2023 Equinor: Mariner Well Services Petrophysicist/Subsurface Development Petrophysicist; *as a petrophysicist, my role is evaluating downhole data acquired in wells to assess rock quality for production/injection, fluid content, etc.*

↓ 2025: my employer became new company 'Adura' following November merger of Shell and Equinor's UK assets

Day-to-Day Highlights

- Hybrid working, currently 5 days in the office but with flexibility to work from home
- Collaborate with development team members to deliver robust targets to well services team for execution. Partly working in well services, so get to see wells through from initiation to execution.
- Empowered to drive initiatives forward – champion feasibility of new technology on Mariner Field that could change the way we operate.
- Opportunity to lead a multi-disciplinary team of subsurface experts through a target maturation project delivering value and optionality to the asset.

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"I'm happiest when working on integrated projects within a multi-disciplinary team"

Principal Geologist

geoscience team lead

Ian Dredge

elemental energies

Role Description

As a geologist in a consultancy I work on lots of different projects. This can be helping find infill well locations in existing oil and gas fields to managing multi-disciplinary integrated injectivity studies for CO_2 storage. I am expected to lead projects and ensure the scope is delivered on time and budget. Building a good client relationship is the same as roles I had in my career within operating companies so moving over to a consultancy has had a lot of similarities. Our team is growing rapidly so my team lead role is going to be more important as we manage multiple projects and keep peoples' work loads manageable.

Career Story

- BSc: 2004 – 2008 Geology and Petroleum Geology, Univ. of Aberdeen
- MSc: 2008 – 2009 Petroleum Geoscience, Royal Holloway
- Career – highlights
  - 2009: Graduate Geologist with GDF Suez in London. *Straight in at the exploration deep end with an offshore licensing round. Exploration in the UK was alive, exciting times.*
  - 2010 – 2011: Graduate training programme, posted to The Hague, NL. *Worked mostly as an operations geologist spending much time offshore. Great experience gained.*
  - 2011 – 2014: moved back to London, planned high pressure/temperature exploration wells. *Used my new operations training to work with the drillers.*
  - 2014 – 2019: made the move back to Aberdeen and into the UK's Cygnus Gas Field Development team. *A four and a half year drilling programme with lots of night shifts geo-steering the drilling of production wells with an excellent team*.
  - 2019 - 2022: now Neptune Energy (following takeover of GDF) and became the Seagull Subsurface team lead. *Re-planned a four well high pressure/temperature development.*
  - 2022 - 2024: joined consultancy – Axis – in a staff position. *No regrets*
  - 2025 – Present: Elemental Energies, *helping to build a new and exciting team in an integrated subsurface and wells consultancy. Looking forward to the future.*

Subsurface Task Force

Day to day highlights

- Cycling to work in Westhill, rain or shine I'll mostly commute to work by bike to the office in Westhill from Aberdeen.
- Firing up Petrel software and carrying on with whatever project I am working on, best days are when it's a new reservoir model I'm building and the hours fly past
- Working with the reservoir engineers or petrophysicist on whatever field or storage site we are working, developing solutions together and testing them
- I always try and get at least a short walk outside at lunchtime, a good way to break up the day and get away from the screens.
- In a consultancy there is always talk of the next project or client meeting coming up, so everyone has a role to play in Business Development to land the next project.

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"I enjoy the challenge of understanding the subsurface. It is like a puzzle where you don't have all the pieces."

Geologist

Chartered geologist / consulting director

Helen Bone

Merlin Energy Resources Ltd

Role Description

As a consulting geologist I work on a wide range of project types and geographical locations.
Historically the focus was on oil and gas projects but more recently I have supported a number of energy transition projects.
As a geologist I put together a 3D understanding of the rocks at depth which enables engineers to determine how fluid may flow through those rocks. I use data collected while drilling wells but also surface analogues of geological settings to help understand what happens between wells.

Career Story

- A levels: Geology, Maths, Physics
- BSc: Geology, MSc: Basin Evolution and Dynamics
  I loved sciences but didn't enjoy biology and chemistry as subjects in their own right. Geology brought all the sciences together into a single subject.
- Career:
  - 1998 & 1999 – summer intern: *learning about company roles sold me on my career path.*
  - 2000 – Consultant Geologist; *focus on well data interpretation, mapping and estimation of hydrocarbon volumes. What is the opportunity?*
  - 2004 – Exploration Geologist: *completion of exploration workflow culminating with planning and execution of successful gas discovery well.*
  - 2006 – Geologist: *geological support for North Sea licence work.*
  - 2007 – Geologist & Technical Manager: *redevelopment of a late life gas asset, identification of new projects for the company, technical management of a global subsurface team.*
  - 2013 – Geologist: *geological modelling of a field development in the Southern North Sea to support development drilling. Geological evaluation of exploration opportunities.*
  - 2015 – Consultant Geologist: *support for companies covering technical evaluations.*
  - *2019* – Consultant Geologist & Director: u*tilising my varied experience to support a range of projects in both oil and gas and energy transition disciplines. Working to support the wider business requirements of the consultancy and management of consulting teams.*

Day to day highlights

- Hybrid working pattern, option to spend 50% of my time working from home
- Identify and meet with business stakeholders to understand their technical needs
- Work with team members to develop and deliver project plans
- Undertake technical workflows covering areas of expertise
- Manage and prioritise technical work across the company
- Spend time with team members to provide coaching and general support
- Develop workflows for energy transition projects
- Work with other directors to support the overall running of the company

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"It's incredible at an outcrop to have the skills to problem solve and interpret the depositional setting of an unknown rock millions of years old"

Subsurface Geoscientist

Senior well planning geoscientist

Sarah Ledingham

ADURA

Role Description

As a part of the Mariner Field well services team I use 3D/4D datasets, horizon amplitude extractions and well logs to place well paths in the most efficient location to maximise reserves in complex injected and faulted sand geometries. This is a collaborative approach so I work closely with subsurface colleagues but also planning, drilling and well engineers and operation engineers as wells are actively steered whilst drilling. I run geological prognosis for horizons and faults, net sand length analysis, assess shallow hazards such as overburden hydrocarbons and contribute to risk assessments to generate drillable and safe wells.

Career Story

- Highers: English, French, Design & Manufacture and Biology, Geography (AH)
- BSc: Geology and Petroleum Geology (changed from Geography in Year 3)
- MSc: Integrated Petroleum Geosciences (IPG)
- Career :
  - 2022 – Equinor scholarship with 3-month inhouse summer research project as part of MSc; *A multidisciplinary evaluation of the Mariner Field Dornoch Formation, learning skills in petrophysics, geophysics, reservoir modelling, well planning and more.*
  - 2022 – Early Career Geoscientist and Modeller at Equinor – Geologist and Reservoir Modeller: *using geological skills to work up depositional concepts whilst learning on the job to close the loop of petrophysical/geophysical/geology inputs into synthesised 3D reservoir models and uncertainty analysis for a high pressure/temperature gas condensate field.*
  - 2024 – Associate Geoscientist – Well Planner: *learning how to generate and optimise well paths within complicated sand geometries for a heavy oil, injectite-reservoired field.*
  - 2025 – Senior Geoscientist – Well Planner: continued well planning activities whilst upskilling with reciprocal motoring opportunities; *teaching well planning and learning PPFG (pore pressure/fracture gradient)*
  - Late 2025: employer became 'Adura' following merger of Shell and Equinor's UK assets

Day to Day Highlights

- Working in a multi-disciplinary team to progress project planning.
- Opportunities to attend courses, diversify skills and learn new software.
- Involvement in the early planning stages of future wells offering insight in the field's future.
- Software learnings; enhancing daily skills and aiding those with problems.
- Documenting progress for both internal and official government requirements.
- Working to update geological inputs (faults, horizons etc) at well scale detail to help progress and enhance field knowledge.
- Whole team meetings with reservoir engineers, production engineers, geos and petrophysics to understand progress on everyone's tasks and to have a more holistic view of field progress
- Engaging with my role in the company's subsurface young advisor group, offering insight to senior management from extended research and discussions with employees

Subsurface Task Force

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"I am happiest when I get exposure to basins and geology all across the world – from the North Sea to SE Asia"

Geoscientist

New Ventures and Exploration

Daniel Crisp

dana PETROLEUM

Role Description

I am responsible for basin screening and play fairway analysis. I am expected to develop and evaluate exploration leads and prospects and going forward manage a portfolio of such opportunities. I also often participate in data room visits and attend both operated and non-operated partner workshops to support the team leader and work collaboratively.

Subsurface Task Force

Career Story

- BSc: Geology and Petroleum Geology 2013-17
- MSc: Integrated Petroleum Geoscience 2017-18
  Highlights included geophysics, sedimentology, regional exploration, petrophysics and field trips to the Spanish Pyrenees and Utah. I also completed my thesis with Dana Petroleum on the impact of salt movement on the deposition of the Forties Formation.
- Career:
  - 2018 – Offshore Production Chemist (self-employed) - *Worked on numerous FPSOs and production platforms in the North Sea and Atlantic. Key roles includes testing for oil , sediment and water in produced oil, technical reporting and production optimisation by adjusting chemical rates.*
  - 2021 – Dana Petroleum - Technical Assistant Exploration and New Ventures team – *Regional geological studies, map generation using multiple software's, aid data managements and head scout for the company looking for new opportunities.*
  - 2023 – Dana Petroleum - Geoscientist – Exploration and New Ventures.

Day to day highlights

- Hybrid working pattern, 3 days in the office, 2 days at home and a half day every Friday
- Review and evaluate subsurface prospects – ultimately to assign a risk and volume range.
- Plenty of collaboration and workstation sessions with colleagues to utilise all experience and generate new ideas.
- Regional, local and prospect 3D interpretation of seismic horizons and faulting alongside the use of analogues to understand geometries.
- Be able to present risks and descriptions clearly to peers – generating technically robust reports and presentations.
- Use of multiple software's such as Petrel, ArcGIS, Petrosys and GeoX.
- Access to multiple scouting resources and academic databases to improve knowledge base.

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Senior Geoscientist

(self-employed)

Peter Browning-Stamp

Role Description

I have worked from new ventures and exploration to field development, mature production, enhanced oil recovery (EOR) and asset repurposing. My experience has a particular focus on the North Sea, Central and Eastern Europe, sub-Saharan Africa, and the Middle East.

I have worked across conventional oil and gas, geothermal energy, and CO_2 storage. I often find myself applying deep technical insights to support both traditional hydrocarbon developments and energy transition projects.

Career Story

- A levels: Geology, Environmental Science, Design - BSc: Geology
  - 2012 - Avalon Sciences – Graduate Program
  - 2013 – Spectrum – Junior Geoscientist/Geoscientist
    Technical lead Balkans/Adriatic, 6 month posting to Perth
  - 2016 – Founder PannEx – Self Employed Consultant
    Won the Oil and Gas Authority's exploration competition
  - 2017 – Ardent Oil – Geoscientist/Senior Geoscientist
    Worked on applications for new exploration licences in UK and Denmark
  - 2020 – Baron Oil – Exploration Advisor
    Eastern Europe New Ventures
  - *2020 – Horizon Energy – Principal Geoscientist*
    UK Mid North Sea High exploration in carbonates of the Zechstein Supergroup
  - 2023 – Ross Offshore/Fidelis New Energy – Lead Geophysicist
    Carbon capture onshore Denmark
  - 2024 – London Oil Scouts – Chairman
  - 2025 – Indio Energy – Exploration Manager - Mozambique

Day to day highlights

- Being self employed gives lots of flexibility but some challenges.
- Working for a variety of clients worldwide.
- Mixed remote/hybrid working pattern, with 1-2 days in London per week.
- Significant international travel to Africa and Europe.
- Manage a significant exploration budget for projects.
- Manage and prioritise the CCS and oil and gas work programmes
- Spend time in the field, planning activities and operations.
- Working with national governments and hydrocarbon agencies
- Spend time with team members to provide coaching and general support
- Acting as subject matter expert.
- Attend conferences and external meetings

Subsurface Task Force

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"What keeps me motivated is the challenge of decoding complex underground puzzles and turning scientific insight into real-world energy solutions"

Geoscientist

Somar Abdullatif

SERICAENERGY

Role Description

At Serica Energy, I serve as a cross-functional senior geoscientist. I regularly integrate geological, geophysical, petrophysical, and reservoir engineering data to develop comprehensive subsurface models.

I collaborate closely with engineering, drilling and HSE (Health, Safety and Environment) teams to optimise field development and generate opportunities. Our team design and execute exploration and development workflows, from prospect generation to field appraisal and production optimisation. I regularly provide technical mentorship to junior geoscientists and support ongoing talent development within the subsurface team.

Career Story

Subsurface Task Force

BSc: Applied Geology, Geophysics & Hydrogeology – Damascus Univ.
MSc: Petroleum Geology – Damascus University
MSc: Petroleum Geoscience – Royal Holloway, University of London

- 2007 – started in the field as a geoscientist and wellsite geologist with Gulfsands in Syria
- 2012 – moved to London with Gulfsands; broadened focus to New Ventures in Syria, North Africa and South America
- 2016 – funded and led Aya Petroleum – *acted as Principal Geoscientist in multiple startups, providing key technical leadership and shaping exploration success*
- 2018 – at Serica Energy, I serve as a cross-functional Senior Geoscientist: *evaluating subsurface assets, supporting field development, and leading exploration projects. My role combines technical interpretation, strategic planning, and opportunity screening—whether it's maturing producing fields, assessing carbon storage sites, or evaluating geothermal potential.*
- *In the 2020s, my focus has expanded to include better understanding of low-carbon initiatives, CO_2 storage and alternative energy strategy. I work closely across disciplines to deliver innovative, practical solutions for late-life asset recovery and the energy transition.*

Day to day highlights

- Subsurface: evaluate subsurface, analyse reservoirs.
- Prospects & volumes: generate prospects, calculating resource size and assessing risks
- New Ventures: evaluating new venture opportunities.
- Portfolio Management: manage exploration and development assets.
- Net-Zero: support CO_2 storage and geothermal reviews.
- Collaboration: work in multidisciplinary teams.

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"No two days are ever the same! I enjoy leading teams and working together to overcome challenges and find solutions"

Chief Executive Officer

Lorna Blaisse

Helium One

Role Description

I am responsible for the overall direction and performance of the Company. Accountable to the board of directors and stakeholders for the success of the Company.

My role requires me to oversee all aspects of the business and strategy, instilling a Company culture and leading the day-to-day operations. I manage remote teams globally and have the privilege of getting to work with different cultures and engage at every level.

Career Story

- A levels: Biology, Chemistry, Physics and Geography
- Degree: MSci with an International Year in *Petroleum Geoscience* Royal Holloway University, London and University of Adelaide, Australia
- Fellow of The Geological Society of London
- Career:
  - 2007 Tullow Oil plc – Geologist; *learnt fundamental geological principles in the southern North Sea and then worked extensively on East Africa projects including the Albertine Rift in Uganda and gained valuable wellsite experience*
  - 2012 African Petroleum Corporation Ltd – Exploration Geologist; *worked on the West Africa Transform Margin evaluating prospectivity, volumetrics and risking*
  - 2013 Delonex Energy UK Ltd – Lead Geologist *where I co-led a successful 6 well exploration programme in the southern Termit Basin, Chad*
  - 2020 Helium One Global Ltd – Principal Geologist *where I transitioned out of oil and gas, into the helium space and led 2D seismic and drilling projects in Tanzania*
  - 2023 Helium One Global Ltd – *appointed CEO and successfully led the Company through a drilling campaign, first helium discovery in Tanzania, completed a feasibility study and was awarded Tanzania's first Mining Licence for helium. Bought into a joint venture helium development project in the USA and completed transactions totalling >£30 million to deliver success*

Day to Day Highlights

- Engaging remotely with teams across UK and Tanzania
- Engagement with joint venture partners in USA and Australia
- Manage and deliver company strategy and work programmes
- Corporate engagement with investor/public relations teams, brokers and advisers
- Work alongside Senior Management team to make timely decisions, problem solve and ensure projects are delivered within budget
- Provide leadership and guidance to teams across all functions
- Ensure in-country compliance and regulatory procedures are adhered to
- Instil a strong HSE culture across the business; both office and field based
- Ensure projects have budget allocations and are managed with minimal overspend

Subsurface Task Force

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"I enjoy supporting clients and colleagues in exploring innovative solutions"

Hydrogeologist

Mine heat specialist hydrogeologist

Dan Mallin Martin

Mining Remediation Authority

Role Description

My role in the Heat and By-product Innovation Team lets me work closely with clients to explore the feasibility of using former coal mining heritage for a sustainable new heat source. Mine water heat is an exciting new way to support homes/businesses with sustainable and low carbon sources of heating, as we strive toward Net Zero goals. My role involves reviewing archive records, hydrochemistry data, historic and active pumping regimes, to tie all this information together and determine the feasibility of extracting warm water, sustainably, at a given site.

Career Story

- Advanced Highers: Chemistry, Physics, Maths
- BSc: Applied Geology, MSc: Hydrogeology
  My passion is for understanding the world I can see around me
- Career – British Geological Survey:
  - 2017 – joined to support the development of the UKGEOS Cheshire observatories development. *Working with a wide range of subsurface specialists on designing a comprehensive subsurface laboratory facility*
  - 2018 – became a project hydrogeologist within the groundwater protection team. *Key projects included:*
    Environmental Baseline monitoring, in Yorkshire, County Durham and Lancashire. Monitoring the impacts of Shale Gas exploration, historical mining legacies, and modern groundwater utilisation
- Hydrogeologist (Mine Heat) – Mining Remediation Authority:
  - 2021 – joined as a hydrogeologist specialising in mine heat feasibility studies, working with clients to appraise potential in their projects. *I wanted to move back into clean energy, and had previously worked on mine water heat during my masters, so I took my background I'd developed at BGS and applied it to a more commercial-style sector*

Day to day highlights

- Hybrid and flexible working arrangements
- Plenty of site work, both with clients, and supervising of drilling for Mining Remediation Authority research and development projects
- Able to independently lead much of my project work
- Exploring new opportunities and constantly learning something new about historic mining, and its influence on current opportunities
- Get to work with a diverse range of specialist colleagues
- Engaging with clients, suppliers and researchers to find solutions when investigating mine water heat feasibility
- Working with a great supportive team who are all just as passionate as me

Subsurface Task Force

Click to return to roles

"I enjoy solving puzzles and putting together logical arguments to describe geological systems."

Numerical Modeller

Principal Consultant

Kate Thatcher

Quintessa

Role Description

I build strong relationships with clients to help them find solutions to their questions. This is often at the cutting edge of science. I've worked with clients from around the world, including Canada, Switzerland, Japan, France and the UK. Most projects are about radioactive waste disposal or CO_2 storage and involve understanding how natural and man-made systems work, representing that in numerical models and communicating the understanding to audiences including technical experts and the general public.

Career Story

- A levels: Maths, Further Maths, Physics, Chemistry
- MSci: Natural Sciences (Earth Sciences), PhD: Hydrogeology
  I like the challenge of explaining complicated things in simple ways.
- Career – Quintessa Ltd (small consultancy company):
  - 2012 – Consultant at Quintessa; *moved out of academia and was able to use my technical skills to help clients answer their questions.*
  - 2014 – Promoted to Senior Consultant
  - 2020 - Promoted to Principal Consultant.
    Gradually gaining responsibility for client interactions, project management, winning contracts, delivering work and mentoring less experienced colleagues.
    Working in CO_2 storage; initially modelling CO_2 in the subsurface and moving into Risk Assessment for currently active projects.
    Building numerical models of underground experiments for disposal of radioactive waste, representing heat transport, water flow and mechanical deformation of both rocks and engineered barriers that are proposed to be used in storage sites.
    Assessing the consequences of any potential exposure to radioactive material that might arise for a given disposal site. This includes high-level modelling of geology, earth surface processes, groundwater flow, flora and fauna on the site and future human activities.
    Elected Trustee Director for the trust that owns the company – director experience

Day to day highlights

- Working with helpful and intelligent colleagues/ clients, often world experts in their field.
- Time for solo working and deep thinking as well as collaborating with others.
- Part-time working (28 hours per week) with flexibility in timing of working hours. Work 2-3 days in the office.
- Opportunity for international travel for conferences and workshops.
- Small employee-owned company means individuals can input into almost all company decisions and make choices about their career.
- Interesting real-world problems to solve, contributing to a low carbon future.

Click to return to roles

"Fantastic working part of a team, solving problems and making two UK gas discoveries"

Geophysicist

Senior Geophysicist - Exploration

Matthew Dack

DELTIC ENERGY

Role Description

As a senior geophysicist, my role is to study the Earth's physical properties using geophysical data, such as seismic, gravity and magnetics. Along side a team of other subsurface professionals, I work collaboratively to try and evaluate petroleum systems and understand the potential location of hydrocarbon accumulations. I help to plan new seismic data acquisition/processing, legacy data reprocessing and interpretation. Interpretation involves the integration of multiple datasets and techniques to quantitatively model the subsurface

Career Story

- A levels: Geography, Biology, Chemistry, German
- BSc: Geology & Physical Geography, MSc: Petroleum Geoscience
- *I enjoy being part of a dynamic team and sharing knowledge in the office or in the field*
- Career – Geophysical Contractor and Operated Oil & Gas:
  - 2013 – Nexen (now CNOOC) internship with UK Onshore Unconventional team; *first experience working for a large independent operator as part of my MSc thesis*
  - 2013 – Geoscientist, CGG Ltd. (now Viridien); *putting all aspects of my MSc into practice, but with particular focus on 2D/3D seismic interpretation techniques*
  - 2017 – Senior Geoscientist, Viridien; *responsible for NW Europe multi-client seismic data acquisition, reprocessing and interpretation projects, building my quantitative interpretation experience*
  - 2021 – Geophysicist, Deltic Energy; *utilising the geophysical skillset built in my previous roles, within the exploration team of small UK focussed oil and gas operator*
  - 2024 – Senior Geophysicist, Deltic Energy; *undertaking aspects of new seismic acquisition, reprocessing and interpretation – with particular focus on seismic modelling, velocity model building for depth conversion and advanced interpretation techniques such as amplitude versus offset analysis (to investigate porosity/fluid fill) and quantitative interpretation*

Day to day highlights

- Using and adapting geophysical techniques to solve complex subsurface problems
- Brainstorming of ideas within a highly experienced technical team
- Active participation in drilling operations, with the ability to test exploration concepts
- Attend technical meetings with licence partners and presenting technical studies
- Exposure to multiple aspects of the exploration and development life cycle, in particular the commercial aspects of the industry
- Conduct studies in support of exploration work programmes
- Ability to attend and present at industry conferences and exhibitions
- Good team environment, with social events and networking opportunities

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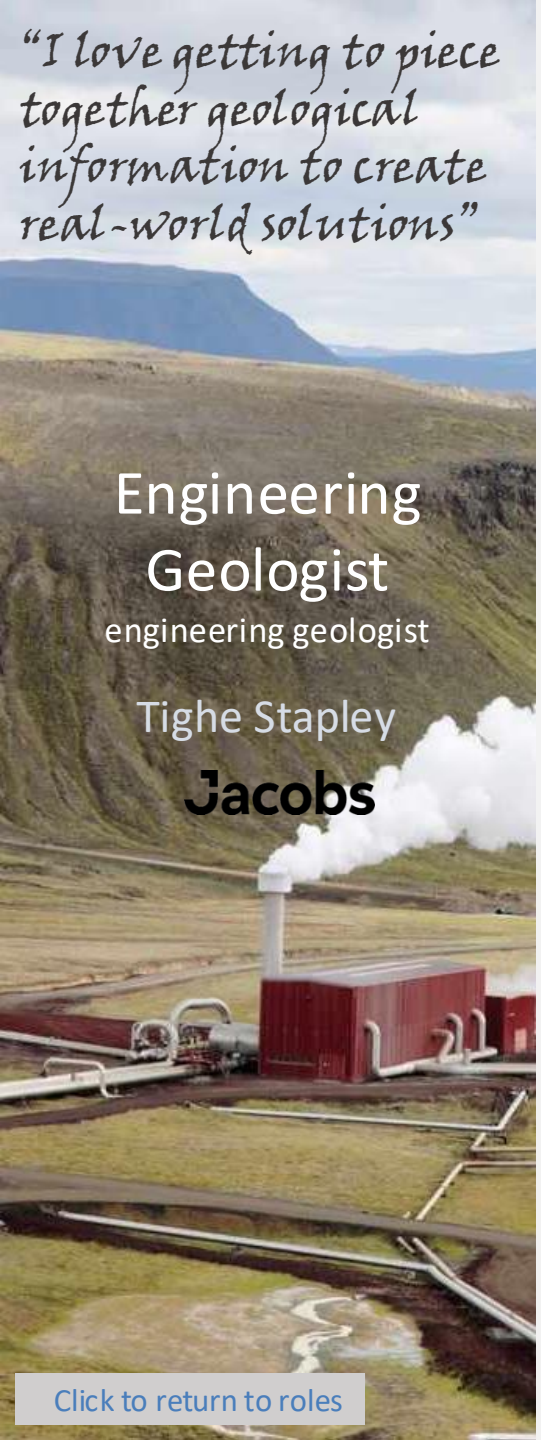

Role Description

My work in geothermal currently involves mostly feasibility and resource studies; modelling the geology beneath a site to analyse whether a geothermal project can be implemented to provide renewable energy for their operations and help their decarbonisation.

I work as part of a multi-disciplinary team that provides geothermal solutions worldwide.

Career Story

- A levels: Geology, Chemistry, Maths.
- BSc: Geological Sciences and MSc: Engineering Geology.
  With a dissertation in sustainable concrete alternatives and their embodied carbon.
- Pre-Career – Adele Adams Associates
  - ↓ 2021 – LMS Designer and Sustainability Advisor:
    An internship turned full-time job to fund my MSc. Began doing website editing, finished doing the sustainability initiatives through showcasing my degree knowledge.
- Career – Jacobs
  - ↓ 2022 – Graduate Engineering Geologist:
    Two years on the graduate program learning how to apply my academic knowledge to project work; gaining an understanding of office dynamics and the working environment; and experiencing a wide range of project types under the umbrella of engineering geology.
  - ↓ 2024 – Engineering Geologist:
    Work varies from undertaking feasibility studies, to writing desk studies, to designing and supervising ground investigations, then reporting on the ground conditions' interpretations. My interests led me through improving sustainability processes when I first joined to now be more involved with the geology of renewable technologies, particularly geothermal. Jacobs is now expanding my reach to develop and work on global projects and initiatives.

Day to Day Highlights

- Flexible, hybrid working combined with periods of onsite supervision of ground works.
- Working for and learning from people right across the globe that are experts in a wide variety of fields, e.g. from nuclear to geothermal.
- Creating 3D ground models and interpreting the earth's processes to create a history of how the area formed and how that affects what can be built there.
- Working on engineering solutions which bring aid to people.
- Attending conferences and webinars that expand my knowledge and experience.
- Being able to start encouraging others into the industry and provide mentorship.

Subsurface Task Force

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"Creative problem solving, adaptability and seeking out new diverse connections helped me to establish a supportive network who I continue to learn from everyday"

Geophysicist

4D Lead East Hemisphere

Francesca Twynam

Role Description

I work on expanding the use of time-lapse 4D seismic to support better decisions in subsurface development. 4D seismic is the repeated acquisition of 3D seismic data over time, allowing us to track changes in the oil/gas/CO_2 reservoir and better understand how it behaves. I help introduce new technologies, explore new markets, and support oil/gas and CO_2 storage projects. I collaborate closely with project teams and research groups, bringing together geophysics in seismic processing, and geology in reservoir modelling to create integrated solutions.

Career Story

- A levels: Geology, Maths, Physics
- BSc: Geology, MSc: Petroleum Geoscience for Reservoir Production and Development
- Career history:
- Weatherford, Aberdeen
  - ↓ 2014 – Sand control engineer; *Developing test programmes for downhole products*
- REDA Energy, Aberdeen
  - ↓ 2015 – Development chemist; *Experimenting with chemical formulation for improved well integrity; close client business engagement and technical product scoping*
- SLB, Crawley
  - ↓ 2016 – Fixed step graduate programme; *complete several technical training programmes in France and Houston learning about seismic processing and depth imaging*
  - ↓ 2019 – Seismic processing geophysicist; *testing/quality control of new seismic technologies*
  - ↓ 2024 – Staff Geophysicist; *peer mentoring and technical leadership to scope new projects*
  - ↓ 2025 – 4D Lead for the East Hemisphere; *technology strategy and global project oversight*
  - ↓ 2024-Present – GESGB Young Professional Director; *volunteer position to support career development for energy geoscientists transitioning into the energy industry*

Day to day highlights

- Hybrid working pattern, with 2 days in the office and some international travel to visit clients and present in technical workshops/conferences.
- Spend time with team members to provide technical support or deliver 4D training.
- Manage and prioritise input to research and development for 4D technology portfolio.
- Engage with clients and internal stakeholders to identify data challenges and potential business opportunities.
- Execute business critical technology development projects to demonstrate differentiating technology for global application.
- Monitor ongoing active projects across multiple applications from oil and gas to CO_2 storage monitoring ensuring 4D data integrity.

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"I enjoy working with bright creative people in a can-do, glass half full environment"

Geoscientist

Mark Wood

Role Description

Geoscientist responsible for understanding the subsurface and working with various other disciplines to make predictions about how much oil or gas lies within a certain area or how much CO_2 an area could safely store.

Career Story

- Highers: Graphic Com, Maths, English, Chem., Geography, Tech Studies
- BSc: Geology and Petroleum Geology, Aberdeen University
- MSc: Petroleum Geoscience, Imperial College London
- Career – Shell Upstream
  - 2006-7-8 Summer – Internships, informal, within Shell Project Teams
  - 2009 Join Shell as Graduate – seconded into service company to follow wireline field engineering programme, Abu Dhabi, Oman
  - 2011 - Graduate Geologist: Brent Field abandonment, Penguins Field redevelopment, offshore drilling infill wells
  - 2015 – rotational assignment in Nigeria. Trying to get discovered fields to development. Reservoir modelling heavy oil.
  - 2019 – return to UK as CO_2 storage geologist and storage advisor: Southern North Sea exploration, Northern Lights, Acorn and US CO_2 storage projects, and Malaysia as Subsurface Leader / Front End Development Manager
  - 2025 – Senior Growth Geologist supporting various assets across the UK portfolio

Career Highlights

- Climbing sand dunes to watch the sunset after completing a logging job in a remote part of the Omani desert.
- Being part of the team that led to a new $2B installation in the Northern North Sea.
- Advising Asian governments on solutions to mitigate CO_2 emissions using CO_2 storage

Day to day highlights

- Everyday I find the subsurface fascinating, it's a genuine privilege to get to interrogate datasets which few people get to see and make recommendations which have big impact.
- Working with creative, can-do people to solve interesting problems which matter

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"It's okay if you do not have it figured out yet! … I most enjoy applying biostratigraphy to integrated projects, providing greater stratigraphic control, allowing our clients to make confident decisions!"

Biostratigrapher/ Micropalaeontologist

Imran Ali

PetroStrat
Integrated Geoscience Solutions

Role Description

Provide routine and wellsite biostratigraphy services globally for projects from Cenozoic to Jurassic - building subsurface frameworks via fossil characterisation. This helps clients solve subsurface challenges, whether for oil and gas or other energy projects. Provide mentoring support and actively seek research and development initiatives to improve workflows. Cross departmental collaborations with integrated, multidisciplinary subsurface projects.

Career Story

- A levels: Maths, ICT, Media; AS Level: Physics
- BSc: Geology, MSc: Applied and Petroleum Micropalaeontology
- Career history:
- University College London, London
  - ↓ 2018 – Research Assistant in Micropalaeontology and Palaeoceanography; *supported published research in a multidisciplinary team, co-supervised MSc theses.*
- PetroStrat, Conwy
  - ↓ 2019 – Stratigrapher/Micropalaeontologist
  - ↓ 2023 – Staff Stratigrapher/Micropalaeontologist;
- CGG (now Viridian)
  - ↓ 2023 – Project Geoscientist; *Project management, multiclient studies, routine integrated biostratigraphy, biostratigraphic research and development, marketing support.*
- PetroStrat, Conwy
  - ↓ 2024-Present – Staff Stratigrapher/Micropalaeontologist, *similar to prior roles plus mentoring and training staff*
- Voluntary roles: 2019-2025 American Association of Petroleum Geologists Europe Young Professionals (YP's) – from graduate opportunities manager to Europe Region President and Secretary. 2025 – present: The Micropalaeontological Society – publicity officer

Subsurface Task Force

Day to day highlights

- Global offshore work, de-risking subsurface with biostratigraphy. It's good fun!
- Training and mentoring new starters, fostering knowledge transfer.
- Project management - liaising with clients to understand subsurface challenges and project goals/objectives. Biostrat gives that extra edge to subsurface projects!
- Research and development with current focus on automation of routine workflows
- Some business development and marketing support to business development team
- Routine biostratigraphy analysis for anything that requires robust subsurface frameworks, including repurposing legacy data for the energy transition.

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