Biography

Simon George is the leader of the organic geochemistry group at the Department of Earth and Environmental Sciences, Macquarie University in Sydney, Australia. He is also the Director of the Macquarie University Marine Research Centre. He was the Acting Head of the EPS Department from Jan 2014 until 1st February 2015 and was Deputy Head of the EPS Department, 2018-2019.

Simon George has more than 30 years experience in organic geochemistry, including 15 years specialising in petroleum geochemistry at CSIRO. Organic geochemistry involves the study of the chemical and isotopic signatures in rocks and sediments, which tell us information about the past. We can reconstruct the nature and timing of important events in the evolution of life. Biomarkers are hydrocarbons that retain the structural information from the original lipids from which they were derived. Biomarkers and other hydrocarbons in oils, rocks and sediments provide us the ability to understand source inputs, subsequent burial and heating history (thermal maturity) and alteration events (such as oil biodegradation). The chemistry of insoluble fractions of organic matter, such as kerogen and asphaltenes, provides further useful information.

Employment

Professor
Dept of Earth and Environmental Sciences
2 Jan 2020 → present

MQ Centre for Energy and Environmental Contaminants
1 Jan 2015 → present

Macquarie University Marine Research Centre
1 Jan 2015 → present

Research outputs

Biomarker signatures of Upper Cretaceous Latrobe Group petroleum source rocks, Gippsland Basin, Australia: distribution and geological significance of aromatic hydrocarbons

Assessing hydrocarbon biomarkers released from Archean rocks after hydrochloric acid treatment (Bitumen II)

Disequilibrium between relative abundances of diahopanes and diasteranes suggests different formation mechanisms

Geochemical characteristics of coal seam biodegradation
Reassessing the syngeneity of biomarkers from South China: Late Neoproterozoic or not?

Ancient DNA from marine sediments: precautions and considerations for seafloor coring, sample handling and data generation

Higher-plant evolution during the Cretaceous to Palaeogene in the Gippsland Basin, Australia
Jiang, L. & George, S. C., Sep 2019. 2 p.

Integrating heavy-mineral, geochemical and biomarker analyses of Plio-Pleistocene sandy and silty turbidites: a novel approach for provenance studies (Indus Fan, IODP Expedition 355)

Petroleum charge history in the Baiyun depression and Panyu lower uplift in the Pearl River Mouth Basin, northern South China Sea: constraints from integration of organic geochemical and fluid inclusion data

Depositional environment, organic matter sources, and variable 17α(H)-diahopane distribution in Early Permian samples, southern Sydney Basin, Australia

Relationship between the fluorescence colour of oil inclusions and thermal maturity in the Dongying Depression, Bohai Bay Basin, China: part 2. fluorescence evolution of oil in the context of petroleum generation, expulsion and cracking under geological conditions

Algal-derived polycyclic aromatic hydrocarbons in Paleogene lacustrine sediments from the Dongying Depression, Bohai Bay Basin, China

Lake evolution and its influence on the formation of oil shales in the Middle Jurassic Shimengou Formation in the Tuanyushan area, Qaidam Basin, NW China

Using petroleum inclusions to trace petroleum systems – a review

Fluid inclusion and stable isotopic studies of thermochemical sulfate reduction: Upper permian and lower triassic gasfields, northeast Sichuan Basin, China

Relationship between the fluorescence color of oil inclusions and thermal maturity in the Dongying Depression, Bohai Bay Basin, China: Part 1. Fluorescence evolution of oil in the context of hydrous pyrolysis experiments with increasing maturity

The occurrence of isorenieratane and 24-n-propylcholestanes in Paleogene lacustrine source rocks from the Dongying Depression, Bohai Bay Basin: implications for bacterial sulfate reduction, photic zone euxinia and seawater incursions
Ethanol-blended fossil fuels: is reduction of atmospheric pollution the only concern?

The potential of Medicago sativa for microbial-enhanced phytoremediation of diesel fuel contaminated sites

Sediment microfabric records mass sedimentation of colonial cyanobacteria and extensive syndepositional metazoan reworking in Pliocene sapropels

Origin, source, mixing, and thermal maturity of natural gases in the Panyu lower uplift and the Baiyun depression, Pearl river Mouth basin, northern South China sea

Hydrocarbon biomarkers preserved in carbonate veins of potentially Paleoproterozoic age, and implications for the early biosphere

Biomarker signatures of Upper Cretaceous Latrobe Group hydrocarbon source rocks, Gippsland Basin, Australia: distribution and palaeoenvironment significance of aliphatic hydrocarbons

Phenolic compounds in oil-bearing fluid inclusions: implications for water-washing and oil migration

The influence of vegetation and soil properties on springtail communities in a diesel-contaminated soil

Predicting the weathering of fuel and oil spills: a diffusion-limited evaporation model

The occurrence and distribution of rearranged hopanes in crude oils from the Lishu Depression, Songliao Basin, China

Biomarker signatures of Upper Cretaceous to Paleogene hydrocarbon source rocks from the Latrobe Group, Gippsland Basin

Comparison of the geochemistry of Upper Cretaceous and Palaeogene hydrocarbon source rocks from the Latrobe Group, Gippsland Basin

Effect of ethanol on the vertical migration of diesel fuel: Implications for phytoremediation
Genetic typing of natural gases and condensates in the Songnan-Baodao Sag, Qiongdongnan Basin, South China Sea

Geochemical characteristics of coal seam biodegradation

Hydrocarbons and hot springs; looking at analogues in the quest for life on Mars

Lower-middle Cambrian microbialites from South Australia: architecture, ecology & biogeochemistry

Organic geochemistry and petroleum potential of Permian outcrop and core samples from the southern Sydney Basin

Paleozoic oil-source correlation in the Tarim Basin

Stromatolite construction, biofacies and biomarkers in the lower Cambrian Hawker Group, Arrowie Basin, South Australia

Thermal maturity variations and unusual biomarker distributions in Permian outcrop and core samples from the southern Sydney Basin

Tracing the redox evolution of the palaeo-ocean through the Late Neoproterozoic in South China: insights from trace elemental proxies

A simple and flexible correlation for predicting the viscosity of crude oils

Effects of oil cracking on fluorescence color, homogenization temperature and trapping pressure reconstruction of oil inclusions from deeply buried reservoirs in the northern Dongying Depression, Bohai Bay Basin, China

Biomarker signatures of Upper Cretaceous hydrocarbon source rocks from the Latrobe Group, Gippsland Basin
Carbon isotopic compositions of n-alkanes and isoprenoids provide evidence of source contributions for Xihu petroleum

Investigation of a thermal effect on rearranged hopanes

Organic geochemistry of Pliocene sapropels from ODP Sites 964 and 967, eastern Mediterranean Basin

Phenolic compounds in oil-bearing fluid inclusions: implications for water-washing and oil migration

The fate and bioavailability of fuel spills in polar marine environments: effect of evaporation and dissolution

The transformation of sediment into rock: insights from IODP site U1352, Canterbury Basin, New Zealand

Distinguishing in situ stromatolite biosignatures from silicification and dolomitisation using short wave, visible-near and thermal infrared spectroscopy: a mars analogue study

In search of early life: Carbonate veins in Archean metamorphic rocks as potential hosts of biomarkers

Assessing fuel spill risks in polar waters: Temporal dynamics and behaviour of hydrocarbons from Antarctic diesel, marine gas oil and residual fuel oil

Organic geochemical characteristics of the Mesoproterozoic Hongshuizhuang Formation from northern China: implications for thermal maturity and biological sources

A possible shale gas prospect? First results of the organic composition and thermal maturity of the Carboniferous Namoi Formation, northern NSW, Australia

Sedimentary organic matter record of Early Cretaceous environmental changes in Western Liaoning Province, NE China

Petroleum potential and kinetic models for hydrocarbon generation from the Upper Cretaceous to Paleogene Latrobe Group coals and shales in the Gippsland Basin, Australia

Applications of oil-bearing fluid inclusions in petroleum exploration, and advances in the techniques for their analysis

Arabian night and sea story: biomarkers from a giant mass transport deposit
Behaviour of hydrocarbons from fuels in polar seawater and effects on the Antarctic amphipod Paramoera walkeri

Carbon isotope records of thermochemical sulfate reduction corrosion effects on carbonate minerals, Upper Permian and Lower Triassic carbonates, NE Sichuan Basin, China

Combined heavy mineral and biomarker analysis in silt: a novel approach for provenance studies (Indus Fan, IODP Expedition 355)

Constraining the impact of benthic meiofaunal activity on organic carbon burial in ancient oxygen-depleted sedimentary environments

Effects of oil cracking on fluorescence color, homogenization temperature and trapping pressure reconstruction of oil inclusions from deeply buried reservoirs, Northern Donging Depression, China
Ping, H., Chen, H., Thiéry, R. & George, S. C., 2016, p. 50.

Evaluating the performance of field science in an analogue EVA suit: stromatolite identification by geologists and non-geologists

Multi-proxy geochemical analyses of Indus Submarine Fan sediments sampled by IODP Expedition 355: implications for sediment provenance and palaeoclimate reconstructions.

Multi-proxy geochemical analyses of Indus Submarine Fan sediments sampled by IODP Expedition 355: implications for sediment provenance and palaeoclimate reconstructions

Oil-bearing fluid inclusions and solid bitumens: biogeochemical repositories of information about the Archean biosphere

Oil-bearing fluid inclusions and solid bitumens as biogeochemical repositories of information about the Archean biosphere

Organic contamination of 2.6Ga stromatolitic dolomites leading to false-positive biomarker results

Organic geochemical characterisation of aliphatic fractions of Pliocene sapropels from ODP Sites 964 and 967, Eastern Mediterranean Basin
Shallow to moderate burial diagenesis and lithification processes in a mixed carbonate/siliciclastic slope succession in the Canterbury Basin, New Zealand

Sub-marine mass slide as a potential biomarker reservoir: preliminary results from IODP Expedition 355, Arabian Sea

The stable carbon isotopic compositions of individual n-alkanes and isoprenoids provide evidence of source contributions for petroleum generated from the Xihu Depression, East China Sea

Cyanobacterial Inhabitation on Archean Rock Surfaces in the Pilbara Craton, Western Australia

Reappraisal of hydrocarbon biomarkers in Archean rocks

Characterisation of organic inclusions in stalagmites using laser-ablation-micropyrolysis gas chromatography-mass spectrometry

Hydrocarbons preserved in a ~2.7 Ga outcrop sample from the Fortescue Group, Pilbara Craton, Western Australia

Analysis of individual oil-bearing fluid inclusions in single quartz crystals from the Barrandian Basin (Lower Palaeozoic, Czech Republic) using ToF-SIMS

A petrological investigation to find potential biomarker sites in Precambrian rocks

Compound specific carbon isotope analysis of palaeo gases trapped in fluid inclusions: implications for the source of gas in the Browse Basin, Australia

Global sea level changes or local tectonics? First Miocene biomarkers in cored sedimentary rocks from IODP Expedition 317, Canterbury Basin, New Zealand

New insights on potential sources of hydrocarbons in the Gippsland Basin
On the filling and leakage of petroleum from traps in the Laminaria High region of the northern Bonaparte Basin, Australia

Organic geochemistry of non-marine Permian–Triassic mass extinction (PTME) sections in the Sydney Basin, Australia

Predicting the weathering and bioavailability of fuel spills in cold marine environments

Predicting the weathering and bioavailability of fuel spills in polar marine environments

Reappraisal of hydrocarbon biomarkers in Archean rocks

The organic geochemistry of Permian shales from southern New South Wales, Australia

The spatial distribution of hydrocarbon biomarkers in an Archean stromatolite outcrop in the Fortescue Group, Pilbara region, Western Australia

Generation characteristics of Mesozoic syn- and post-rift source rocks, Bonaparte Basin, Australia: new insights from compositional kinetic modelling

Marine influence helps preserve the oil potential of coaly source rocks: Eocene Mangahewa Formation, Taranaki Basin, New Zealand

A comparative multiproxy approach to address paleo-redox change at the Paleocene-Eocene boundary, New Jersey continental margin

Assessing the syngeneity and indigeneity of hydrocarbons in the ~1.4 Ga Velkerri Formation, McArthur Basin, using slice experiments

Assessing the syngeneity and indigeneity of hydrocarbons in the ~1.4 Ga Velkerri Formation, McArthur Basin, using slice experiments
Flannery, E. N. & George, S. C., 2014.

Beginnings

Bioavailability and fate of toxic aromatic hydrocarbons in fuel spills in the Antarctic marine environment
Biomarkers or not? A petrologic assessment of Archean rocks and their oil inclusions

Coal contribution to oil and gas accumulations in the Bonaparte and Gippsland basins: new insights from molecular and bulk kinetic data

Crude oil in Archean carbonates

Exploration of Miocene biomarkers in cored sedimentary rocks from IODP Expedition 317, Canterbury Basin, New Zealand
Bratenkov (Aharonovich), S. & George, S. C., 2014.

Geochemical characterisation and predicted bulk chemical properties of petroleum generated from Jurassic and Cretaceous source rocks in the Vulcan Sub-basin, Bonaparte Basin, North West Shelf of Australia

Global sea level changes or local tectonics? First Miocene biomarkers in cored sedimentary rocks from IODP Expedition 317, Canterbury Basin, New Zealand

In memoriam: John W. Smith (1925-2014)

Innovative fluorescence spectroscopic techniques for rapidly characterising oil inclusions

Investigating the syngeneity and the paleobiology of hydrocarbon biomarkers in the Fortescue Group at 2.7-2.8 Ga

Origin and evolution of biomarkers in cored Miocene sedimentary rocks from IODP Expedition 317, Canterbury Basin, New Zealand
Bratenkov (Aharonovich), S. & George, S. C., 2014.

Petroleum biodegradation in subantarctic Macquarie Island soils

Potential sources of petroleum accumulations in the Gippsland Basin: insights from pyrolysis and bulk chemical data

Predicting the weathering and bioavailability of fuel spills in cold marine environments

Preliminary results on the organic composition and thermal maturity of the Carboniferous Namoi Formation, northern NSW, Australia: a possible shale gas prospect?
Bratenkov (Aharonovich), S. & George, S., 2014.
Sensitivity of the Antarctic amphipod Paramoera walkeri to diesel and fuel oil: lethal and behavioural impacts

An exciting future for biomarker geochemistry in very old rocks: single oil inclusion analysis by TOF-SIMS

Application of a linear transfer model for the estimation of the hydrocarbon concentration in the seawater of Antarctica following a fuel spill

Flash pyrolysis GCMS analysis of fluid inclusions

Geochemistry of Mesoproterozoic Hongshuizhuang Formation shales in northern part of North China: implications for provenance, source weathering and paleoclimate

Investigating the syngeneity and the palaeobiology of hydrocarbon biomarkers in the Fortescue Group at 2.7-2.8 Ga

The Organic geochemistry of the Mesoproterozoic Velkerri Formation and investigations into syngenicism and indigenicity of hydrocarbons using slice experiments

Chemical changes of fluid inclusion oil trapped during the evolution of an oil reservoir: Jabiru-1A case study (Timor Sea, Australia)

Mass Spectrometry Techniques for Analysis of Oil and Gas Trapped in Fluid Inclusions

Radiocarbon analysis of halophilic microbial lipids from an Australian salt lake

A Record of life in changing Neoarchean environments of the Fortescue Group, Pilbara region, Western Australia

Assessing toxicity of diesel and fuel oil on early life stages of Antarctic marine invertebrates

Biomarkers in offshore Canterbury Basin sediments, New Zealand: Organic matter input and thermal maturity

Chemical fossils: marking the origins of life
Coal degradation in anaerobic sediments associated with acid mine drainage

Field observations relating to the c. 2740 Ma Mopoke Member, Kylena Formation, Fortescue Group, Pilbara region, Western Australia

Investigating the syngeneity and paleobiology of hydrocarbon biomarkers in the Fortescue Group at 2.7-2.8 Ga

Source rock mapping using fluid inclusion geochemistry in the offshore Perth Basin

Sr isotopic composition of pore water of shelf cores from IODP Expedition 317: Canterbury Basin, New Zealand

The rate of removal and the compositional changes of diesel in Antarctic marine sediment

Paleosalinity significance of occurrence and distribution of methyltrimethyltridecyl chromans in the Upper Cretaceous Nenjiang Formation, Songliao Basin, China

Biogeochemistry of sediments at ultra-deep burial depth recovered during IODP Expedition 317, Canterbury Basin, New Zealand


Analysis of organic biomarkers in single Precambrian oil-bearing fluid inclusions using ToF-SIMS

Analysis of single Precambrian oil-bearing fluid inclusions as a way of constraining evolution of eukaryotes

Biogeochemical processes in Holocene-Pleistocene sediments at <100 m depth recovered during IODP Expedition 317, Canterbury Basin, New Zealand

Expedition 317 summary
IODP Expedition 317: exploring the record of sea-level change off New Zealand

Methods

New biomarker results from the 2.7 Ga Tumbiana Formation, Pilbara region

Paleontology and field observations of the approximately 2720 Ma Tumbiana Formation in the northwest Pilbara, Western Australia

Site U1351

Site U1352

Site U1353

Site U1354

Diisopropyl naphthalenes: Environmental contaminants of increasing importance for organic geochemical studies

Canterbury Basin sea level: global and local controls on continental margin stratigraphy
Compound specific radiocarbon analysis of hypersaline microbial biomarkers

Does the Neoarchaean Fortescue group record the earliest evidence for oxygenic photosynthesis?

Genesis and biogeochemical evolution of hydrocarbons in the Neo-Mesoproterozoic sediments of the Yanshan Basin, North China

How does depth affect the preferential degradation process in Antarctic marine sediments polluted by diesel?

Integrated ocean drilling program expedition 317 preliminary report Canterbury Basin sea level global and local controls on continental margin stratigraphy

IODP Expedition 317, Canterbury Basin, offshore NZ: on-board geochemistry results

Long-term degradation of lubricant oil in Antarctic sediments

Organic geochemical evidence of a microbial ecology in the 2.7 Ga Tumbiana Formation from stromatolitic outcrop samples, Fortescue Basin, Western Australia

Preliminary results on Canterbury Basin Sea-Level transect, New Zealand, IODP Exp. 317

Preserved biomarkers in ephemeral saline lake sediments as constraints on inland regional evaporative regimes

Radiocarbon dating of archaeal lipids in microbial mats from an Australian salt lake
Generation and expulsion of oils from Permian coals of the Sydney Basin, Australia

Stability of complex hydrocarbons within fluid inclusions in rocks exposed to high temperatures

Assessment of regional oil charge patterns using oil inclusion geochemistry in the Vulcan Sub-basin, NW Australia

Cautions in the interpretation of petroleum fluid inclusion data in petroleum system analysis: insight from spectroscopic analyses of natural and synthetic inclusions

Di-iso-propylnaphthalenes: environmental contaminants of increasing importance for organic geochemists

Geochronology based on radiocarbon dating of archaeal biomarkers, Lake Tyrrell, Northern Victoria, Australia

Hydrocarbons in Antarctic marine sediment: expect the unexpected

Influence of depositional environment and early diagenesis on molecular maturity parameters of coals and related oils an example from the Taranaki Basin

Oil-bearing fluid inclusions from the Palaeoproterozoic: A review of biogeochemical results from time-capsules >2.0 Ga old

Pyrolysis of Jamison Sandstone solid bitumen from the Mesoproterozoic Roper Superbasin

Source rock and fluid inclusion study of Neoproterozoic-Mesoproterozoic sediments in the Yanshan Basin, North China

Tracking petroleum systems in the Perth Basin by integrating microscopic, molecular and isotopic information on petroleum fluid inclusions

The indigenous origin of Witwatersrand "carbon"

Changes to oil fluorescence by the invasion of gas or water

Fluid inclusions provide evidence for early oil composition prior to gas condensate migration into reservoirs
The suitability of the fuel used for motor-sledging on Scott's last expedition, 1910-1913

Preservation of hydrocarbons and biomarkers in oil trapped inside fluid inclusions for >2 billion years

Distribution and geochemical composition of oil-bearing fluid inclusions compared to crude oil, oil shows and rock extracts in a Campos Basin well, offshore Brazil

Hydrocarbons in Antarctic marine sediments: degradation and ecological effects over five years

Hydrocarbons in Antarctic marine sediments: degradation and ecological effects over 5 years (SRE4)

Hydrocarbons in solid bitumens and fluid inclusions from the Palaeoproterozoic Oklo natural fission reactors, Gabon

Influence of depositional environment and early diagenesis on molecular maturity parameters of coals an example from the Taranaki Basin

Palaeoproterozoic hydrocarbons associated with uranium and gold deposits

The palaeoenvironment and palaeoecology of the 2.7Ga Tumbiana Formation, Pilbara Craton, Western Australia

The Paleontology and Stratigraphy of the 2.7Ga Tumbiana Formation, Pilbara Craton, Western Australia

Determining the extent of weathering of spilled fuel in contaminated soil using the diastereomers of pristane and phytane

New insights into the chemical composition of chitinozoans

Oil and its biomarkers associated with the Palaeoproterozoic Oklo natural fission reactors, Gabon

Petroleum charge history in the Lunnan Low Uplift, Tarim Basin, China - Evidence from oil-bearing fluid inclusions
Proterozoic oils in the roper superbasin, Northern Australia

The 2006 AOGC Medal

Geochemical analysis techniques and geological applications of oil-bearing fluid inclusions, with some Australian case studies

Determining the extent of biodegradation of fuels using the diastereomers of acyclic isoprenoids

Biomarker evidence for two sources for solid bitumens in the Subu wells: Implications for the petroleum prospectivity of the East Papuan Basin

Cambrian petroleum systems and oil migration in the Georgina Basin, Australia

Eukaryote-derived steranes in Precambrian oils and rocks: fact or fiction?

Hydrocarbon-aqueous mixtures in syndiagenetic fluid inclusions

Monitoring biodegradation, weathering and bioremediation in cold climates

Oil-bearing fluid inclusions from the Palaeoproterozoic: biogeochemical time-capsules for >2.0 billion years

Oils sourced from Permian coals - geochemical evidence from Sydney Basin oil seeps and shows

Petroleum migration in the Georgina Basin: evidence from the geochemistry of oil inclusions and bitumens

Precambrian inclusion oils in the Roper Group: a review

Unravelling the oily past of giant gas fields using oil-bearing fluid inclusions.
Using laser micropyrolysis to decipher the chemical record of metazoans during the "Cambrian Explosion"

Quantitative whole oil gas chromatography as a tool for understanding biodegradation processes in oil reservoirs

Biomarkers from Huronian oil-bearing fluid inclusions: An uncontaminated record of life before the Great Oxidation Event

Applying innovative fluorescence spectroscopy techniques to study petroleum inclusions

Biomarkers trapped in 2.45 Ga oil inclusions from Canada

Geochemical characteristics of fluid inclusion oils from the Lunnan Low Uplift (Tarim Basin, China)

Recent developments and applications of the laser micropyrolysis GC-MS technique

Solid bitumen and oil-bearing fluid inclusions associated with Proterozoic natural fission reactors at Oklo (Gabon, Africa)

Using oil inclusions for reconstruction fluid evolutions: an example from the Gidgealpa oilfield (Cooper-Eromanga basins, Central Australia)

Early diagenesis of organic matter in isorank coal seams of the Mangahewa Formation, Taranaki Basin, New Zealand

Evaluating the extent of biodegradation of fuel spills using the stereochemical isomers of acyclic isoprenoids

It's Life but not as we know it

Oil and its biomarkers trapped inside fluid inclusions ca. 2.45-2.0 Ga

Oil-bearing fluid inclusions: biogeochemical time-capsules for > 2.0 billion years
Oil from Late Permian coals in the Sydney Basin, Australia: a geochemical study

Organic geochemical characteristics of Late Permian coals from the southern Sydney Basin, Australia

Petroleum charge history in the Lunnan Low Uplift, Tarim Basin, China: revealed from fluid inclusion investigation

Petroleum charge history of a stacked reservoir offshore Brazil as inferred from the distribution and geochemistry of petroleum inclusions

Quantitative whole oil gas chromatography as a tool for understanding biodegradation processes in oil reservoirs

Use of the distribution and geochemistry of oil-bearing fluid inclusions to unravel petroleum charge histories: an example from offshore Brazil

Characterisation of fluid inclusion oil in a Mid-Proterozoic sandstone and dolerite (Roper Superbasin, Australia)

Composition and origin of fuel from the hut of explorer Robert Falcon Scott, Cape Evans, Antarctica

Geochemical comparison of fluid inclusion and present-day oil accumulations in the Papuan Foreland - Evidence for previously unrecognised petroleum source rocks

Australian contributions to the field of organic geochemistry

Charge history of the Gidgealpa oilfield, Cooper Eromanga basins: evidence from fluid inclusion oil analysis
Brunsing, J., Volk, H. & George, S. C., 2005, p. 54-54. 1 p.

Clues to fill histories of gas fields in the Caswell Sub-basin– evidence from the distribution and geochemistry of palaeo-oils

Composition and origin of fuel from Scotts expedition to Antarctica

Diamondoids as bioremediation indicators for diesel spills

Enhancement of the capability of the laser micropyrolysis GC-MS technique

**Molecular and isotopic characteristics of shallow surface sediments from petroleum seep areas, offshore North West Australia**

**Petroleum migration in the Georgina Basin: Evidence from petrography and diagenesis of carbonate reservoirs, and from the molecular composition of oil inclusions and bitumens encountered in the Elkedra and Ross wells**

**Precambrian oil in the Roper Superbasin: A Fluid Inclusion Perspective**

**Recognising oil mixing using maturity parameters from different molecular weight fractions of oils**

**The use of biomarkers from oil inclusions to constrain Paleoproterozoic ecosystems and environments**

**Total Scanning Fluorescence (TSF) as an effective screening tool for delineating oil families**

**Unravel the origin and processes of heavy oil genesis using integrated fluid inclusion analysis**

**Variability of molecular maturity parameters in isothermal source rocks - Implications for assessing the thermal maturity of oils**

**Fluid inclusion evidence for an early, marine-sourced oil charge prior to gas-condensate migration, Bayu-1, Timor Sea, Australia**

**The analysis of oil trapped during secondary migration**

**Geochemistry of oil in fluid inclusions in a middle Proterozoic igneous intrusion: implications for the source of hydrocarbons in crystalline rocks**

**Changes in the molecular composition of crude oils during their preparation for GC and GC-MS analyses**

**Australian Petroleum CRC Project 5.1A: Inter-laboratory comparison of molecular and stable isotopic data commonly used in petroleum exploration studies**
Biomarker evidence for two sources of solid bitumens in the Subu wells, east Papuan Basin

Chemical composition of fuel from the hut of explorer Robert Falcon Scott, Cape Evans, Antarctica

Comparing the geochemical composition of fluid inclusion and crude oils from wells on the Laminaria High, Timor Sea

Feasibility of combining molecular with isotopic characterisation of fluid inclusion oils - a case history from the Perth Basin

Feasibility of combining molecular with isotopic characterisation of fluid inclusion oils - a case history from the Perth Basin

Geochemical and compound specific carbon isotopic characterisation of fluid inclusion oils from the offshore Perth Basin (Western Australia): implications for recognising effective oil source rocks

Geochemical characterisation of Proterozoic oil trapped in fluid inclusions in sedimentary and igneous rocks in the Roper Superbasin, Australia

Novel petroleum systems in Papua New Guinea indicated by terpane and methylhopane distributions

Oil-bearing fluid inclusions: Geochemical analysis and geological applications

Oil migration in the Vulcan Sub-basin, Timor Sea, investigated using GOI and FIS Data

Oil source rocks in the Papuan Foreland as inferred by the geochemistry of crude and fluid inclusion oils

Organic petrology and geochemistry of solid bitumens in the Eastern Papuan Basin

Precambrian petroleum: new insights from oil-bearing fluid inclusions

The distribution and composition of sulphur isotopes and flash pyrolysis products of solid bitumens from Papua New Guinea

The distribution and isotopic composition of sulfur in solid bitumens from Papua New Guinea

Two sources of solid bitumens shown by biomarker evidence in the Subu wells, east Papuan Basin

Variability of molecular source and thermal maturity indicators in a marine-influenced coal seam: the Greta Seam, Sydney Basin

Variation of molecular maturity parameters in iso-rank, marine-influenced coals: A systematic study on extracts of Eocene Taranaki coals

Biomarkers, brines, and oil in the Mesoproterozoic, Roper Superbasin, Australia

Oil migration in the Middle Proterozoic Roper Superbasin, Australia: evidence from oil inclusions and their geochemistries

Compound specific carbon isotopic characterisation of fluid inclusion oils

Geochemical comparison of fluid inclusion and reservoired oils in the Papuan Foreland Basins - Evidence for unrecognised petroleum source rocks

Geochemistry and microthermometry of ~ 1400 Million year-old oil in fluid inclusions in sedimentary and igneous rocks in the Roper Superbasin, Australia

Predicting abundances and n-alkane profiles of oil inclusions from bulk fluorescence spectrophotometry

Selected papers from the Chinese 2001 Symposium on Research and Technological Advances of Reservoir Geochemistry

The analysis of oil trapped in the process of secondary migration

Variabilities in response of aromatic thermal maturity markers in the Proterozoic Middle Velkerri Formation, McArthur Basin, Australia
Coal as a source rock for oil: A review

A review of the evidence for expulsion of commercial quantities of oil from humic coal

Biodegradation of low molecular weight hydrocarbons in Barrow Island crude oils

Changes in the molecular composition of crude oils during their preparation for GC and GC-MS analyses

Evidence for an early, marine-sourced oil charge prior to gas-condensate migration, Bayu-1, Timor Sea

Evidence for a new oil family in the Nancar Trough area, Timor Sea

My life before I was compressed: fluid flow histories on the northern Australian convergent margin

Organic geochemical characterisation of bitumens in the Campanian Pale Sandstone, Papua New Guinea

Reply to comment by Oxtoby on "Assessing the maturity of oil trapped in fluid inclusions using molecular geochemistry data and visually-determined fluorescence colours"

The effect of minor to moderate biodegradation on C5 to C9 hydrocarbons in crude oils

The use of fluid inclusion oils to reconstruct the charge history of petroleum reservoirs an example from the Taranaki Basin

Use of aromatic compound distributions to evaluate organic maturity of the Proterozoic middle Velkerri Formation, McArthur Basin, Australia

In situ analytical pyrolysis of coal macerals and solid bitumens by laser micropyrolysis GC - MS

Assessing the maturity of oil trapped in fluid inclusions using molecular geochemistry data and visually-determined fluorescence colours
Charge histories of petroleum reservoirs in the Gippsland and Taranaki Basins Evidence from the analysis of oil inclusions and crude oils

Enhanced petroleum systems analysis in frontier basins: integrating geochemistry with geoscience

Extracting oil from fluid inclusions for geochemical analyses: size matters!

Hydrocarbon charge history of the northern Londonderry High: Implications for trap integrity and future prospectivity

The effect of minor to moderate biodegradation on C5 to C9 hydrocarbons in crude oils

The Use and abuse of fluorescence colours as maturity indicators of oil in inclusions from Australasian petroleum systems

Validation of source kitchens and petroleum charge history in complicated basin using fluid inclusion: an example from Tazhong 4 oilfield in central uplift, Tarim Basin

Validation of source kitchens and petroleum charge history of the Tazhong 4 oilfield (central uplift of Tarim Basin) using fluid inclusion data

Geochemical appraisal of palaeo-oil columns: implications for petroleum systems analysis in the Bonaparte Basin

Tricyclic terpenoid composition of Tasmanites kerogen as determined by pyrolysis GC-MS

Adopting a unified approach to examine petroleum generation kinetics

Geochemical correlation of gas emissions in the Cataract River gorge, Australia

Oil-bearing fluid inclusions: geochemical analysis techniques and geological applications

Organic geochemistry of gas emissions in the Cataract River gorge
Organic maturity evaluation of the Proterozoic middle Velkerri Formation, Northern Territory, Australia: use of aromatic hydrocarbon distributions

Use of fluid inclusions to locate palaeo-oil water contacts and application to investigation of petroleum systems

Effects of biodegradation on Australian Permian coals

Coal mining beneath a gorge; induced fracturing and the release of the reservoired gases

Influence of the aromatic fraction on fluorescence colour of natural oil inclusions from oil fields in Australia and Papua New Guinea

Introduction to the Special Issue: Proceedings of the 1998 Australian Organic Geochemistry Conference

Mass spectral characteristics of C_{19} and C_{20} tricyclic terpanes detected in Latrobe Tasmanite oil shale

Organic compounds trapped in aqueous fluid inclusions: a constraint on the interpretation of low molecular weight hydrocarbons in oil inclusions

Tasmanite oil shale, Tasmanites and novel tricyclic terpenoids

The use of oil-inclusion fluorescence colours as maturity indicators: a cautionary note from molecular geochemistry data

The use of oil inclusion geochemistry and basin modelling for assessing oil charge history: Blackback oilfield, Gippsland Basin, Australia

Use of fluid inclusions to locate palaeo-oil water contacts and application to investigation of petroleum systems

Applications of laser micropyrolysis-gas chromatography-mass spectrometry

A study of the gross compositions of oil-bearing fluid inclusions using high performance liquid chromatography

Constraining the oil charge history of the South Pepper oilfield from the analysis of oil-bearing fluid inclusions
Organic compounds trapped in aqueous fluid inclusions

Proterozoic source rocks: sedimentology and organic characteristics of the Velkerri Formation, Northern Territory, Australia

Correlation of oils trapped in fluid inclusions from the Cooper/Eromanga Basin System, Australia

Effects of biodegradation on the molecular composition of Australian Permian coal

Evaluating factors which control the fluorescence colour of oil-bearing fluid inclusions

Geochemical comparison of oil trapped in fluid inclusions and reservoired oil in Blackback oilfield, Gippsland Basin, Australia

Geochemistry of a palaeo-oil column, Octavius 2, vulcan sub-basin

Novel tricyclic terpenoids from Tasmanite facies

Vagrant oils: geochemical signposts to unreocgnised petroleum systems

Geochemical comparison of oil-bearing fluid inclusions and produced oil from the Toro sandstone, Papua New Guinea

Comparison of palaeo oil charges with currently reservoired hydrocarbons using molecular and isotopic analyses of oil-bearing fluid inclusions: Jabiru oilfield, Timor Sea

Describing the oil charge history of the South Pepper oilfield from the analysis of oil-bearing fluid inclusions

Determining the gross composition of oil-bearing fluid inclusions using HPLC

Fluid inclusion record of early oil preserved at Jabiru field, vulcan sub-basin
Laser micropyrolysis GC–MS: A micro-selective analytical method

Organic compounds trapped in aqueous fluid inclusions

A new apparatus for laser micropyrolysis-gas chromatography/mass spectrometry

Laser micropyrolysis gas chromatography mass spectrometry

The effects of varying tissue preservation on the aliphatic hydrocarbons within a high-volatile bituminous coal

An HPLC method for analysis of oil in fluid inclusions in geochemical systems

Comparison of palaeo oil charges with currently reservoired hydrocarbons using the geochemistry of oil-bearing fluid inclusions

Geochemical comparison of early oil preserved in fluid inclusions with current oil charge, Jabiru Field, Vulcan Sub-basin

Interfacing a laser microprobe to a GC-MS

Laser micropyrolysis gas chromatography mass spectroscopy (a new tool!) for petrographical chemistry (a new discipline!)

Low molecular weight compounds trapped in fluid inclusions: analysis by on-line crushing in Quantum MSSV

Mapping hydrocarbon charge histories: detailed characterisation of the South Pepper oil field, Carnarvon Basin

Petrography and aliphatic hydrocarbon composition of the Barrett Coal Member, Upper Permian, northern Sydney basin, NSW

A study of sulphur and nitrogen in two high sulphur coals
Implications of variations in petrography on the aliphatic hydrocarbon composition within the Barrett coal member, upper Permian Wittingham coal measures, Northern Sydney basin, New South Wales (NSW), Australia

Molecular geochemistry of oil-generating coals from Turpan Basin, China

Molecular geochemistry of oil-generating coals from Turpan Basin, China

Organic geochemistry of petroleum-bearing fluid inclusions in quartz grains from a Cretaceous sandstone

The geosynthesis of alkylationaromatics

The influence of depositional environment on the methylphenanthrene index

An integrated analytical approach for determining the origin of solid bitumens in the McArthur Basin, northern Australia

Aromatic hydrocarbon distributions in the Greta seam, Sydney Basin

Ketones in a Proterozoic dolerite sill

Pyrolysis of aromatic compounds as a guide to synthetic reactions in sediments

Vitrinite reflectance suppression in coal due to a marine transgression: case study of the organic geochemistry of the Greta Seam, Sydney Basin

Black sandstones in the Midland Valley of Scotland: Thermally metamorphosed hydrocarbon reservoirs?

The organic and isotope geochemistry of the Permian Greta coal, Australia
CSIRO Australia: research and development for the exploration industry

Analytical approaches for determining the origin of solid bitumens: an integrated review

An integrated analytical approach for determining the origin of solid bitumens

Effect of igneous intrusion on the organic geochemistry of a siltstone and an oil shale horizon in the Midland Valley of Scotland

The influence of igneous activity on the generation and accumulation of petroleum in the central area of the Midland Valley of Scotland

The organic geochemistry of some heat-affected samples from the Midland Valley of Scotland

Diagenesis of a Carboniferous sandstone from the Midland Valley of Scotland

Activities
Australian and New Zealand International Ocean Discovery Program Consortium (ANZIC)
Simon George (Visiting researcher)
14 Oct 2018 → 14 Dec 2018

Deputy Head of Department, EPS
Simon George (Participant)
Mar 2018 → ...

Reviewer of grant submitted to Petroleum Research Fund
Simon George (Participant)
Mar 2018

China University of Petroleum - Beijing
Simon George (Visiting researcher)
Nov 2017

Jilin University
Simon George (Visiting researcher)
Nov 2017

Australian Geoscience Council Convention 2018
Simon George (Participant)
Aug 2017 → Oct 2018

Simon George (Speaker)
Zhaojun Liu  
Simon George (Host)  
Nov 2016

China University of Geoscience Beijing  
Simon George (Visiting researcher)  
Jun 2016

Invited keynote speaker for the Geofluids conference, Wuhan, China, June 2016.  
Simon George (Speaker)  
Jun 2016

Jilin University  
Simon George (Visiting researcher)  
Jun 2016

Jilin University  
Simon George (Visiting researcher)  
2016 → 2021

Oral presentation at the Big History Anthropocene Conference, Macquarie University, December 2015. "Geology of the Anthropocene"  
Simon George (Speaker)  
Dec 2015

CAS - Guangzhou Institute of Geochemistry  
Simon George (Visiting researcher)  
Jul 2015

Yangtze University  
Simon George (Visiting researcher)  
Jul 2015

Member of the EPS Learning and Teaching committee  
Simon George (Participant)  
2015 → …

Macquarie University Marine Research Centre (Organisational unit)  
Simon George (Chair)  
2014 → 2018

Projects

AR app for physical campus exploration of evolution / biology / Big History, while walking down Wally's Walk  
11/09/17 → 31/12/17

A reality check for learning approaches; a bank of mobile Virtual Reality (VR) stations for campus wide applications  
Westaway, K., Ralph, T., Hesse, P., George, S., Bulbert, M., Allen, D., Power, R. & Rampe, M.  
1/04/18 → 31/12/18
Australian Drilling Program: Biomarkers, Oxygen and Geobiology
George, S.
7/09/11 → 31/12/16

Australian Membership of the International Ocean Discovery Program
29/06/16 → …

Australian Membership of the International Ocean Discovery Program (2014-2015)
9/07/14 → 31/12/15

Biodegradation and ecotoxicology of spilled fuel oils in polar soils
George, S.
5/03/07 → 4/03/08

CL Monochromator for Scanning Electron Microscopy
1/01/15 → 31/12/15

Constraining the impact of benthic meiofaunal activity on organic carbon burial in ancient oxygen-depleted sedimentary environments
Loehr, S., Kennedy, M., George, S. & Schaefer, B.
1/01/16 → …

Deciphering the organic geochemical record of metazoans during the ‘Cambrian Explosion’ bioevent
George, S.
1/07/07 → 30/06/09

Diatom lipids: the key to past sea-ice history in remote Antarctic regions
Armand, L., George, S., Belt, S., Heraud, P., Bowler, C., Beardall, J. & MQRES, M.
28/02/17 → 23/08/17

Ecological Risks from Oil Products used in Antarctica: Characterising hydrocarbon behaviour and assessing toxicity on sensitive early life stages of Antarctic marine invertebrates
George, S.
5/12/11 → 30/06/12

Facility for large lipid analysis of geological and environmental samples, including new ability to derive important palaeothermometers
George, S., Goodwin, I., Lolas, A., Jacob, D., Westaway, K. & Leefmann, T.
1/01/14 → 31/12/14

Facility for long term preservation and storage of biological, chemical, environmental and geological samples
Nevalainen, H., Packer, N., Karuso, P., Jamie, J., Molloy, M., Brown, L., Liu, F., Herbert, B., George, S. & Vemulpad, S.
1/01/11 → 31/12/11

 Femtosecond laser micropyrolysis gas chromatograph-mass spectrometer
1/01/18 → 31/12/18
Fossils, fuels and ancient molecules: a multidisciplinary study investigating early animal and hydrocarbon evolution in the Cambrian of central Australia
Brock, G. & George, S.
1/01/10 → 31/12/10

Funds to aid with start-up if Produced Water Research Centre, Faculty of Science
George, S.
22/05/12 → 31/12/12

Geochemical changes during coal biodegradation to methane
George, S., Campbell, B. & Loehr, S.
5/03/18 → 5/03/21

Geochemistry Lab - ASE 300 Accelerated Solvent Extractor
George, S., Walter, M., Brock, G., Jamie, J., Gore, D. & McRae, C.
1/01/07 → 31/12/07

Hybrid fourier transform dispersive raman micro-spectrometer
George, S., Kannangara, G., Kennedy, E., McNevin, D., Chen, Y. & Wilison, M.
1/01/09 → 31/12/09

LECO comprehensive two-dimensional gas chromatography (GCxGC) with flame ionization detection system
George, S., Nelson, P., Brock, G. & Jamie, J.
1/01/08 → 31/12/08

Luminescence dating facility - dosimetry and detection
Westaway, K., Goodwin, I., Fryirs, K., Hesse, P., George, S., Choat, M., Fanning, P. & Cohen, T.
1/01/10 → 31/12/10

Macquarie University Energy and Environmental Contaminants Research Centre
1/01/16 → …

Macquarie University Planetary Research Centre
1/07/15 → …

Mass balancing of generation and escape of methane on the North West Shelf of Australia in the Cenozoic
George, S. & Abbassi, S.
21/09/11 → 26/09/12

Models of local and global climate changes through organic inputs and biomarker geochemistry in deep water core sediments in the Indus fan, Arabian Sea
George, S. & Aharonovich, S.
1/01/16 → …

Molecular fossils, environmental genomics & the natural history of an Australian salt lake
George, S. & Brocks, J.
1/01/07 → 31/12/09

MQ Marine Research Centre
George, S., Armand, L., Armbrrecht, L., Bishop, M., Brock, G., Daczko, N., Dadd, K., Goodwin, I., Grech, A., Hesse, P., Irvine, A., Jacob, D., Kennedy, M., Kosnik, M., Loehr, S., Madin, E., Madin, J., Ostrowski, M., Paulsen, I., Santilian, N.,
MQ SAFETY NET

Biogeochemical evolution of animal exoskeletons throughout the Phanerozoic
George, S.
1/01/19 → 31/12/19

Organic geochemistry of Eocene to Oligocene sediments in the Tasmania Gateway – a detailed analysis of depositional environment, organic matter inputs, and palaeo sea surface temperature, ODP Leg 189
Harper, C. & George, S.
22/10/18 → 22/10/20

Oxygenation of Earth: the timing of the origin of cyanobacteria
George, S. & Walter, M.
1/01/10 → 31/12/15

Palaeoenvironments and thermal maturity of the Permian southern Sydney Basin, from drillcore DM Callala DDH1
George, S. & Campbell, B.
1/08/17 → …

Patterns of global climate changes during the Miocene Epoch based on evaluation of the biomarkers from IODP expeditions 313 and 317
George, S. & Aharonovich, S.
27/08/14 → 27/08/16

Precision saw for finely cutting and slicing geological samples
1/01/12 → 31/12/12

Purge and trap concentrator with autosampler for analysis of volatile organic compounds in water and soil samples
George, S., Brock, G., Jamie, I., Nelson, P., Hose, G., Bishop, M., Schaefer, B., Goodwin, I., Armand, L. & Williamson, J.
1/01/10 → 31/12/10

Pyrolysis equipment for chemical analysis of large organic molecules
1/01/17 → …

Rates of depletion of lubricant and fuel contaminants during natural attenuation from Antarctic marine environments, and ecosystem response to exposure to complex mixtures
George, S., Snape, I., McRae, C., Stark, J., King, C. & McIntyre, C.
31/10/07 → 30/06/12

Residual toxicity and risk assessment of petroleum hydrocarbons in Antarctic and sub-Antarctic soils
Hose, G., George, S., Ferrari, B., King, C. & Snape, I.
18/03/13 → 30/06/17

Sediment Hydrocarbon Pyrolysis Analyzer
Zakoshanski, I., Kennedy, M., George, S., Strezov, V., Gore, D. & Jacob, D.
1/01/15 → 31/12/15

Start-up grant for Simon George
George, S.
1/01/07 → 31/12/07
Stromatolite Construction, Biofacies and Biomarkers in Lower Cambrian Carbonates of the Hawker Group, Arrowie Basin, South Australia
George, S. & Teece, B.
1/05/17 → …

Thermal Desorption Capability for Molecular Analysis
George, S., Prentice, C., Taylor, P., Jamie, J., Atwell, B. & Jamie, I.
1/01/13 → 31/12/13

Time-of-flight mass spectrometer for analysis of complex mixtures in oils, ancient rocks, recent sediments, natural products and atmospheric aerosols
George, S., Nelson, P., Gore, D., Jamie, J., Brocks, J., Neilan, B., Kannangara, G., Snape, I., Volk, H. & Wilson, M.
1/01/10 → 31/12/10

Toxicity of chemically and physically dispersed fuels on Antarctic marine biota - applicability of dispersant use for fuel spill response planning
George, S., Harrison, P. & Lane, A.
1/07/13 → 30/06/16

Tracing life's beginnings: molecular fossils from single oil inclusions
George, S., Dutkiewicz, A. & MQRES 3 (International), M. 3.
6/02/13 → 5/02/16

Using ancient phytoplankton communities and genes to illuminate future ocean responses
George, S., Ostrowski, M., Armand, L. & Armbrrecht, L.
1/10/16 → …