

# ***CURRICULUM***

**Helen Jamieson Gibson**

## ***VITAE***

### **Employment Record**

**2004: Contract Geologist, Intrepid Geophysics:** Training to develop expert user skills in “3D GeoModeller” software, and to investigate and promote innovative ways this new tool can be applied to best-service the hydrocarbon exploration and production industry. Also, advising on 3D GeoModeller’s software development.

Author and presenter at the 2004 APPEA conference (Thermal history reconstruction in the Amadeus Basin, central Australia.)

#### *Geotrack International Pty. Ltd., Melbourne*

**Senior Geologist, 1993 to 2002:** Career centred on thermal history and basin modelling, report writing and client liaison. In detail, work involved interpretation of apatite fission track analysis (AFTA<sup>®</sup>) results and geochemical data from a variety of world-wide geologic terrains, plus basin modelling, culminating in prime authorship of about 35 reports to oil companies, government groups and universities. Major reports included two, non-exclusive studies of oil producing basins on the North-west Shelf, Australia. Additionally: marketing tasks and regular presentations to oil companies and conference audiences.

**Visiting Scientist, 2001 (Graz, Austria):** Three months leave from Geotrack was taken to continue collaborative research on central Australian exhumation history with Dr. Stüwe at the University of Graz. As an employee of the University, I also assisted in supervising students, gave a seminar and assisted preparation of a book subsequently published by Stüwe.

**Research Assistant, 1990 to 1993:** on a half-time basis (while completing an MSc) I assisted with the advancement of AFTA<sup>®</sup> techniques, and their development for direct application to oil and gas exploration problems. (Example: statistical studies, and microprobe analyses.)

#### *CRA, Victoria*

**Contract Geologist, late 1989 to 1990:** Supervision of drilling for exploration of gold and base metals in western Victoria. Duties involved management of an exploration programme and supervision of sub-contractors.

#### *Golden Shamrock Mines Ltd., Eastern Australia*

**Geologist, 1988 and 1989:** Performing gold and base metal exploration programmes (surface and underground mapping, sampling for geochemistry, magnetometer survey, diamond and percussion drilling). Also land owner negotiations and maintenance of exploration tenements.

**Special Project, 1989 (Idaho, USA):** Three months assisting gold exploration and ore reserve estimation of a shear zone-hosted gold deposit in Idaho.

## Academic Record

### *1990-1993 Master of Science Degree (Geology)*

Thesis work in thermochronology and structural geology based on field studies in the Murchison Basin, New Zealand. The study involved thermal history modeling of AFTA<sup>®</sup> data and revealed Oligocene and Miocene timing on the re-activation of fault systems of this inverted basin. Short courses in: Petroleum Geology and Programming in C. Supervisors: Assoc. Prof. C.J.L. Wilson and Dr. P.F. Green. University of Melbourne, Australia.

### *1984-1987 Bachelor of Science Degree (Honours)*

Fourth year thesis in structural and metamorphic geology; short courses in: isotope geology and geochronology, metamorphism and microstructure, and research methods. Laboratory component investigated diffusion in mineral systems by numerical modeling. Field component based in the Reynolds Range, Northern Territory. Supervisors: Assoc. Prof. C.J.L. Wilson and Prof. R. Powell. Undergraduate subjects: Geology, Chemistry, Geography, Meteorology, Marine Science. University of Melbourne, Australia.

## Referees

**Dr. Kerry A. Hegarty, Director**, Geotrack International Pty. Ltd., 37 Melville Road, Brunswick West, Vic., 3055. Phone 61 3 9380 1077, [mail@geotrack.com.au](mailto:mail@geotrack.com.au)

**Dr. Peter Tingate, Lecturer and Project Leader CO<sub>2</sub>CRC**, Australian School of Petroleum (formerly NCPGG), Santos Petroleum Engineering Building, University of Adelaide, SA., 5005. Phone 61 8 8303 4296, [ptingate@ncpgg.adelaide.edu.au](mailto:ptingate@ncpgg.adelaide.edu.au)

## Personal details

**Birth Date** December 21, 1965

**Nationality** Australian



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## *Interests*

Hiking, kayaking, photography, surf lifesaving, yoga

## *Affiliations*

Member: Petroleum Exploration Society of Australia

Panel Judge: Banksia Foundation Environmental Awards (1993, 2003, 2004) in the Category of “Leadership in Sustainability in the Minerals Industry”

Committee Member: Hunt Memorial Preschool

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## Publications Record

### Full papers

- Gibson, H., Ambrose, G., Duddy, I., Tingate, P. and Marshall, T. (2004) Post-Early Carboniferous Thermal History Reconstruction from well data in the Amadeus Basin, Central Australia. *The APEA Journal*, In press.
- Duddy, I, Green,P., Gibson, H. and Hegarty, K. (2004) Regional palaeo-thermal episodes in Northern Australia. In Proceedings from the 2003 Timor Sea Symposium, *NTGS Special Publication*, In press.
- Biermeier, C., Wiesinger, M., Stüwe, K., Foster, D., Gibson, H., and Raza, A. (2003) Aspects of the structural and late thermal evolution of the Redbank Thrust System, central Australia: constraints from the Spears Metamorphics. *Australian Journal of Earth Sciences*, Vol.50, 983-999.
- Gibson, H.J. and Stüwe, K. (2000) Multiphase cooling and exhumation of the southern Adelaide Fold Belt: constraints from apatite fission track data. *Basin Research*, Vol. 12, 31-45.
- Gibson, H.J., Green, P.F., and Wilson, C.J.L. (1996) Thermal history reconstruction in and around the Murchison Basin: implications for hydrocarbon prospectivity. *New Zealand Petroleum Conference Proceedings*, Vol. 1, 76-85.
- Thomson, K., Underhill, J.R., Green, P.F., Bray, R.J., and Gibson, H.J. (1999) Evidence from apatite fission track analysis for the post-Devonian burial and exhumation history of the northern Highlands, Scotland. *Marine and Petroleum Geology* 16, 27-39.

### Abstracts

- Duddy, I.R., Green, P.F., Gibson, H.J. and Hegarty, K.A. (2003). Regional paleothermal episodes in Northern Australia identified using AFTA. In: *Timor Sea Symposium Handbook*, Darwin, pp 7.
- Gibson, H.J. (1991) Late Cretaceous and Cenozoic deformation of the Murchison Basin New Zealand: tectonic history evaluation using apatite fission track analysis. In: *Cratonic margins: structural and tectonic processes*, Specialist Group in Tectonics and Structural Geology Conference, Margaret River (Ed. by A.C. Duncan), Geological Society of Australia Abstracts No. 31, 22-23.
- Gibson, H.J. (1992) Deformation of the Murchison Basin, New Zealand: tectonic history evaluation using apatite fission track analysis. In: *7<sup>th</sup> International Workshop on Fission-Track Thermochronology*, Philadelphia, pp 57.
- Gibson, H.J., Wilson C.J.L., and Green, P.F. (1995) The roles of apatite fission track analysis (AFTA™) and field structural mapping in tectonic studies: example from the Murchison Basin, New Zealand. In: *Specialist Group in Tectonics and Structural Geology Conference*, Clare Valley, Geological Society of Australia Abstracts No. 40, 49-50.
- Gibson, H.J. and Stüwe, K (2000) Multiphase cooling and exhumation of the southern Adelaide Fold Belt revealed from apatite fission track data and thermal history modelling. In: *9<sup>th</sup> International Conference on Fission Track dating and Thermochronology*, Lorne, (Ed. by W.F. Noble, P.B. O'Sullivan and R.W. Brown), Geological Society of Australia Abstracts No. 58, 117-119.
- Lisker, F., Wilson C.J.L., and Gibson, H.J. (in press) The Vestfold Hills between Lambert rifting and Gondwana breakup; evidence from apatite fission track dating. In: *9<sup>th</sup> International Symposium on Antarctic Earth Sciences*, Potsdam, Germany, September 2003.

### Qualifications (unpublished)

- Gibson, H.J. (1987) Diffusion in mineral systems and the geology of the south-eastern Reynolds Range, Northern Territory. BSc (Hons) Thesis, University of Melbourne.
- Gibson, H.J. (1993) The tectonic and thermal evolution of the Murchison Basin, New Zealand: an apatite fission track study. MSc Thesis, University of Melbourne.