

## **Katharine Burgdorff Tyler**

### **Geomechanics Consultant**

*Katharine is a project leader and advisor specializing in wellbore image analysis, pore pressure prediction, fractured reservoir characterization, wellbore stability and sand production prediction. She started with Geomechanics International (GMI) in 2002 which became part of RDS (Reservoir Development Services) at Baker Hughes in 2008. During her previous roles at GMI and RDS, Katharine was involved with GMI•Imager™ and GMI•MohrFrac™ software development and training. She also helped to develop and teach a new tutorial-based GMI•SFIB™ course and has experience using Techlog to develop natural fracture and fluid flow analysis deliverables and to process image logs. She worked for the Asia Pacific region starting in 2004 and was the Geomechanics Team Lead for the Asia Pacific group before moving back to the U.S. in June 2009. After continuing to consult for the RDS Asia Pacific group remotely she joined the North America consulting group in March 2014. She holds a B.A. in Geology from Middlebury College and was part of research teams involved in sediment coring in the Southern Ocean off Antarctica as well as in the North Atlantic.*

### **Geomechanics Areas of Expertise**

Image analysis, stress constraint, wellbore stability, natural fracture permeability, fault stability, pore pressure prediction, sand production prediction

### **Professional Experience**

J. Kowan Consulting, LLC, Melrose, Massachusetts, **Geomechanics Consultant**, 2017–Present

- Lead geomechanics projects and interface directly with clients to deliver results
- Provide expert level review and advice on various geomechanics topics, as needed
- Support business development efforts

Baker Hughes RDS (Asia Pacific & North America Groups), **Geomechanics Advisor**, 2009–2016

- Consult as project lead in wellbore image analysis, pore pressure prediction, in situ stress and geomechanical modeling, wellbore stability, natural fracture permeability and characterization including geothermal reservoirs, and sand production prediction using HeliSand3D
- Deliver findings to clients in presentations and as written reports
- Work on integrated teams to solve multi-disciplinary problems for clients
- Mentor/advise geomechanics specialists and associates and review client deliverables
- Assist sales efforts for geomechanics consulting work
- Develop and teach training courses in image importing and analysis, fracture analysis and stress modelling
- Qualified peer assessor for natural fracture permeability analysis

Geomechanics International (GMI) / Baker Hughes RDS, Asia Pacific Group, **Geomechanics Team Lead**, Australia, 2007–2009

- Identified project leaders, maintained project scheduling program and coordinated resources required to ensure projects are executed and delivered under project timeframe
- Verified and updated projected monthly revenue targets by liaising with Asia-Pacific Business Development Managers and Operations Manager

- Communicated closely with software development managers to ensure software changes, concerns or problems are understood so that these do not reduce project efficiency
- Product manager for GMI•MohrFrac<sup>TM</sup> software package

GMI, California and Perth, Australia, **Geomechanics Specialist**, 2002–2007

- Consulting in wellbore image analysis, in situ stress and geomechanical modeling, wellbore stability, fracture permeability as well as consulting in tectonically and geothermally active zones
- Product manager for GMI•MohrFrac<sup>TM</sup> software package

Marine geology research cruises aboard the *RV/IB Nathaniel B. Palmer*, East Antarctica and *R/V Knorr*, Iceland, **Research Assistant**, 2001–2002

- 60-day research cruise in Antarctica encompassed work as a research assistant doing lab work on ocean sediment samples and monitoring and editing SeaBeam swathmapping data; followed by a year-long research project on electrical resistivity measurements on ocean sediments collected in a 153-page senior thesis
- 40-day research trip to the North Atlantic to survey the Gardar, Bjorn and Eirik sediment drifts; work included p-wave and magnetic susceptibility core measurements, an 8-hour daily navigation watch, editing SeaBeam swathmapping data and assistance with core deployment and recovery and sampling

LDEO, Columbia University, NY, **Lamont Doherty Summer Internship and Research Position**, 2000

- Designed and implemented well characterization project on two drill holes penetrating fractured dolerite in the Palisades sill, NY; continued work from internship program, preparing research for publication (09/01-12/01)

## Education

Middlebury College, Vermont, USA

- Bachelor of Arts in Geology (May 2002)
- Phi Beta Kappa
- Council on Undergraduate Research: 6th Annual Posters on the Hill Award was given to: Katharine Burgdorff, for her senior thesis, "High-resolution Electrical Resistivity Measurements as a Geophysical Tool on East Antarctic Holocene Ocean Sediments"; Katharine's presentation was sponsored by NSF
- Sigma Xi, VT Chapter, John M. White award for Outstanding Achievement in Geological Research, 05/02

## Professional Societies

- Member of the Society of Petroleum Engineers

## Publications

- Alratty, Z., Alquaimi, B., Ansah J., Alsuwadi, S., Almutairi, B., Perumalla, S., **Burgdorff, K.**, Imtiaz, S., Zaitsev, A. Narrowing Formation Fracture Gradient Uncertainty by Integrating Geomechanics

and Microfracturing Test Results: A Case Study from Saudi Arabia. SPE-SAS Annual Technical Symposium & Exhibition held in Al Khobar, Saudi Arabia, April 21-24, 2014. SPE-SAS-375

- Khaksar, A., **Burgdorff, K.**, Rahman, K., White, A., Dunmore, S., Reinaldo, O. Systematic Geomechanical Evaluation for Short Term Gas Storage in Depleted Reservoirs. APPEA Conference & Exhibition, 2012.
- Castillo, David, Rowse, J., Douglas, G., **Burgdorff, K.**, Streit, J., Kendrick, D., Wilson, N. Modeling Detailed Wellbore Breakout Rotations in a Single Borehole in the Papua New Guinea Area to Constrain Active Fault Geometry Away from the Borehole. Proceedings from AAPG International Conference and Exhibition, Perth, Australia, 5 Nov 2006.
- **Burgdorff, K.**, Castillo, D., Rowse, J., Douglas, G., Owad-Jones, S., Streit, J., Kendrick, D. and Wilson, N. Regional Stress State in the Fold Belt Area of PNG and Fine Scale Stress Variation with Implications for Drilling, Exploration and Subsurface Reservoir Characterization. Proceedings from GEO ASIA 2006 Conference, Kuala Lumpur, Malaysia, 14 June 2006, p. 32-35.
- Streit, J., van der Zee, W., **Burgdorff, K.**, Rowse, J. and Douglas, G. Near-Real-Time Wellbore Completion Strategies in Complex Tectonic Settings to Optimize Target Drilling and Completion. Proceedings from GEO ASIA 2006 Conference, Kuala Lumpur, Malaysia, 14 June 2006, p. 56-58.
- Goldberg, D. and **Burgdorff, K.** 2005. Natural fracturing and petrophysical properties of the Palisades dolerite sill. *From: Harvey, P. K., Brewster, T. S., Pezard, P. A. & Petrov, V. A. (eds) Petrophysical Properties of Crystalline Rocks. Geological Society, London, Special Publications, 240, 25-36.*
- Khaksar, A., Warrington, A., Magee, M., **Burgdorff, K.** and Castillo, D. Coupled Pore Pressure and Wellbore Breakout Analysis in the Complex Papua New Guinea Fold Belt Region, 2004. SPE 88607
- **Burgdorff, K.**, Goldberg, D. 2001. Petrophysical characterization and natural fracturing in an olivine-dolerite aquifer, *Electronic Geosciences Journal*, vol.6, n.2.
- **Burgdorff, K.** and D. Goldberg, 2000. Feasibility study for CO<sub>2</sub> sequestration in a natural olivine-diabase aquifer: preliminary site characterization in the Palisades Sill, NY. *Suppl. Eos, Transactions, American Geophysical Union*, vol.81, n.48.