



CURRICULUM VITAE

BERNIE B. BERNARD

May 2005

PROFESSIONAL EXPERIENCE:

- Vice President, TDI-Brooks International, Inc., 1998-present
- General Manager (managing partner) of B&B Laboratories, providing analytical services to the environmental and geochemical markets, Jun 96 -present.
- Consulting Scientist under contracts for instrument design and testing, Jan 96 - present.
- Deputy Director, Geochemical & Environmental Research Group, Texas A&M University, May 93 - Oct 95.
- Research Scientist, Geochemical & Environmental Research Group, Texas A&M University, May 93 - Jan 96.
- Contract Design Consultant, O.I. Corporation, Apr 93 - Jun 95.
- Vice President, Director of Technology, O.I. Corporation, Jan 86 - Apr 93.
- Vice President, Chief Chemist, O.I. Corporation, Aug 80 - Dec 85.
- Assistant Professor, Geochemistry, University of Oklahoma, Aug 78 - Jul 80.
- Chemist and Consultant, O.I. Corporation, Sep 77 - Jul 80.
- Research Associate, Texas A&M University, Chemical Oceanography, Sep 77 - May 78.
- Research Assistant, Texas A&M University, Chemical Oceanography, Sep 75- Aug 76.
- Research Technician, Abilene Christian University, Chemistry, Sep 70 - Aug 74.

FORMAL EDUCATION:

Abilene Christian University

Dept. of Chemistry
Abilene, TX 79601
B.S. Chemistry, May 1974
highest honors
w/physics double major

Texas A&M University

Dept. of Oceanography
College Station, TX 77843
Ph.D. Geochemistry (Chem Ocn), May 1978
highest honors
Distinguished Graduate Award

MANAGEMENT COURSES:

Stanford University

Graduate School of Business
Executive Program for Smaller Companies
Palo Alto, CA 94305
Certificate of Completion, July 1992

▪ *Hewlett Packard Company*

Process of Management Course for Managers
Palo Alto, CA 94304
Certificate of Completion, June 1992

TECHNICAL TRAINING

- Installation and Operation of the Kongsberg Simrad HPR400P USBL system (2003, 2004, 2005).
- STCW (fire fighting, first aid & CPR, Sea Survival and Ship responsibilities (2001)
- Health, Safety and Environmental, B&B Laboratories, (1998).
- Sport Diver Certificate, PADI (renewed 2004, original certification by NASDS 1967)



FIELD EXPERIENCE:

Over 20 years field experience including several weeks sea time per year on several research vessels, including Chief Scientist and Party Chief responsibilities on over 20 cruises.

UNIVERSITY COURSES TAUGHT AS FACULTY MEMBER:

- Organic Geochemistry, graduate level, U. Oklahoma, School of Geology & Geophysics
- Isotope Geochemistry, graduate level, U. Oklahoma, School of Geology & Geophysics

PROFESSIONAL SUMMARY:

A hands-on senior manager with 9 years of experience in graduate academia and 21 years of management experience in industry. Can add a high level of value in scientific research as well as in technical product and methods development and training. Highly experienced in designing, testing, comparing and validating sampling equipment and analytical instrumentation and methods. Able to write cogent technical reports and deliver effective marketing, technical, and training seminars. Has directed business, marketing, and human-resource functions as well as technical function in three \$5-18 million organizations. Has over 20 years of experience in natural gas geochemistry, including an expertise in the measurement and interpretation of molecular and isotopic compositions of the light hydrocarbon gases in the marine environment. Published models for the interpretation of the natural sources of light hydrocarbon gases have become commonly shown in the scientific literature as "*Bernard Plots*" and are commonly used and cited by investigators world wide in their research, papers, and presentations. Analytical methods developed for the measurement of the concentrations of interstitial gases in marine sediments continue to be in wide use. Scientific investigations at TDI-Brooks has resulted in an accumulation of data from over 25,000 cores taken in the continental shelves, slopes, and the deep water adjacent to continental margins worldwide. Continues to be in the scientific forefront of the development of analytical methods and interpretive models for the composition and source of natural gases, and routinely gives scientific presentations at chemical and geological society meetings each year.

TECHNICAL STRENGTHS:

- Designing sampling equipment and analytical instruments to compete in a world-class environment, in terms of reliability, performance, manufacturability, and cost.
- Understanding specific market needs and opportunities in environmental, geochemical, and other analytical fields.
- Having detailed knowledge and understanding of the technologies for scientific measurement in the environmental and geochemical fields.
- Having in-depth (published) knowledge of organic, environmental, and stable isotope geochemistry.
- Generating and interpreting scientific data and writing technical publications with high value added.
- Making technical presentations, producing and directing seminars, communicating information accurately and concisely.
- Having ability to operate and support analytical equipment, including installation, application, training, maintenance, and repair.
- Having ability to match innovative electromechanical engineering to analytical procedures to advance current state of methodology.

MANAGEMENT STRENGTHS:

- Providing leadership for organizational growth in terms of setting values, providing a vision of the future,
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developing a strategy for business approach, setting and achieving measurable goals, reviewing and rewarding successes.

- Identifying and leveraging core competencies of the organization.
- Seeing big-picture and relating issues to general management principles, in terms of organizational achievements, shortfalls, strengths, weaknesses, opportunities, and risks. Applying sound management principles to day-to-day activities.
- Providing financial management by generating and tracking basic business and accounting parameters, ratios, and statements. Understanding of normal bounds of such financial indicators for maintaining control.
- Ability to assess and react to competitive environment, including the interactive forces of competitors, suppliers, customers, potential substitute technologies, and new entrants to the market.
- Belief in and ability to develop long-term organizational relationships with customers, regulatory agencies, and suppliers for stability and continual quality improvement.
- Belief in and ability to manage people and develop human resources, including technical and supervisory training, delegating according to maturity, and motivating by instilling a sense of accomplishment in each person.

TECHNICAL INTERESTS:

- Sampling equipment and analytical instrumentation design and automation
- Geochemical exploration and migration of hydrocarbons in the marine environment
- Natural gas geochemistry methods and interpretation
- Environmental chemistry and water quality
- Gas hydrate geochemistry
- Petroleum geochemistry
- Dynamic and static headspace analysis of volatiles in soils

MANAGEMENT INTERESTS:

- Business Development
- Product Market Development
- Sampling Process Development
- International Technical Sales
- Human Resource Development

PUBLICATIONS:

- 1975 Metal-isotope measurement of iron pentacarbonyl, *J. Chem. Phys.*, 63, 3694-3696, with B. Hutchinson, R. L. Hance and M. Hoffbaur.
- 1976 Natural gas seepage in the Gulf of Mexico, *Earth Planet. Sci. Lett.*, 31, 48-54, with J.M. Brooks and W.M. Sackett.
- 1977 Input of low-molecular-weight hydrocarbons from petroleum operations into the Gulf of Mexico, in *Fate and effects of Petroleum Hydrocarbons in Marine Ecosystems and Organisms*, Proceedings of a Symposium (November 1976), Seattle, edited by D.A. Wolfe, pp. 373-384, with J.M. Brooks and W.M. Sackett.
- 1977 A geochemical model for characterization of hydrocarbon gas sources in marine sediments, in *Proceedings of the Ninth Annual Offshore Technology Conference*, OTC 2934 (May 1977) Houston, pp. 435-438, with J.M. Brooks and W.M. Sackett.
- 1977 Light hydrocarbons in recent continental shelf and slope sediments, *Journal of Geophysical Research*, 83, 4053-4061, with J.M. Brooks and W.M. Sackett.



- 1978 Carbon isotopic variations in total carbon dioxide and methane of nearshore sediments, in *Stable Isotopes in the Earth Sciences*, edited by D.W. Robinson, Science Information Division, DSIR, Wellington, N.Z., pp. 39-48, with T. Whelan and J.M. Brooks.
- 1978 Environmental aspects of a well blowout in the Gulf of Mexico, *Environmental Science and Technology*, 12, 695-703, with J.M. Brooks, T.C. Sauer, and H. Abdel-Rehiem.
- 1978 Light hydrocarbons in marine sediments, *Technical Report 78-5-T*, Texas A&M Press, 144p.
- 1979 Methane in marine sediments, *Deep-Sea Research*, 26, 429-443.
- 1979 Characterization of gases in marine waters and sediments, in *Geochemical Exploration, 1978*, edited by J.R. Watterson and T.K. Theobald, Association of Exploration Geochemists, Rexdale, Ontario, pp. 337-346, with J.M. Brooks and W.M. Sackett.
- 1979 Chemical aspects of a brine pool at East Flower Garden Bank, northwest Gulf of Mexico, *Limnology and Oceanography*, 24, 735-345, with J.M. Brooks, T.R. Bright, and C.R. Schwab.
- 1979 Natural gas seepage on the South Texas Shelf, in *Proceedings of the Eleventh Annual Offshore Technology Conference*, OTC 3911, pp. 471-478, with J.M. Brooks, W.M. Sackett, and J. Schwarz.
- 1979 A carbon inventory for Orca Basin brines and sediments, *Earth Planet Sci. Lett.*, 44, 73-81, with W.M. Sackett and J.M. Brooks.
- 1980 Sources of biogenic methane in the Gulf of Mexico, in *Marine Environmental Pollution, 1, Hydrocarbons*, edited by R.A. Geyer, Elsevier Scientific Publishing Co., Amsterdam, pp. 107-192.
- 1980 Environmental aspects of ocean dumping in the western Gulf of Mexico, *J. Water Pollution Control Federation*, 52, 329-350, with others.
- 1980 Facile synthesis of $57\text{Fe}(\text{CO})_5$, *Synth. React. Inorg. Metal-Org. Chem.*, 10, 1-7, with L. Daniels, R. Hance, and B. Hutchinson.
- 1981 Methane in the upper water column of the northwestern Gulf of Mexico, *Journal of Geophysical Research*, 86(11), 11029-11040, with J.M. Brooks and D.F. Reid.
- 1985 Biogenic hydrocarbon gases and sulfate reduction in the Orca Basin brine, *Geochimica et Cosmochimica Acta*, with D.A. Wiesenburg and J.M. Brooks.
- 2000 The nature of gas hydrates on the Nigerian continental margin, In: *Gas Hydrates, Challenges for the Future* (G.D. Holder and P.R. Bishnoi, eds.), *Annals of the New York Academy of Sciences*, 192, 76-94, with J.M. Brooks, W.R. Bryant, and N.R. Cameron.
- 2001 G.A. Cole, A. Yu, F. Peel, R. Requejo, J. DeVay, J.M. Brooks, B.B. Bernard, J.E. Zumberge, S. Brown, Constraining source and charge risk in deepwater areas, *World Oil*, October 2001.
- 2002 S. Nagihara, J.M. Brooks, B.B. Bernard, G.A. Cole, N. Summer, T. Lewis, Application of marine heat flow data important in oil and gas exploration, *Oil and Gas Journal*, July 2002.
- 2004 MacDonald, I.R., G. Bohrmann, E. Escobar, F. Abegg, P. Blanchon, V. Blinova, W. Bruchmann, M. Drews, A. Eisenhauer, X. Han, K. Heeschen, F. Meier, C. Mortera, T. Naehr, B. Orcutt, B. Bernard, J. Brooks and M. de Farago, Asphalt Volcanism and Chemosynthetic Life in the Campeche Knolls, Gulf of Mexico, *Science*, 304, 999-1002.
- 2005 MacDonald, Ian R., Leslie C. Bender, Michael Vardaro, Bernie Bernard, James M. Brooks, Thermal and visual time-series at a seafloor gas hydrate deposit on the Gulf of Mexico slope, *Earth & Planetary Sciences Letters*, 233, 45-59.

OTHER RECENT PUBLISHED REPORTS:

- 1996 Angola Deep Water Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 97-044, TDI-Brooks International, Inc., College Station, Texas, USA, February 1997.



- 1996 Nigeria Ultra Deep Water Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 96-026, TDI-Brooks International, Inc., College Station, Texas, USA , January 1997.
- 1997 Angola Ultra Deep Water Consortium Program, Surface Heat Flow Interpretive Report, Technical Report 98-100, TDI-Brooks International, Inc., College Station, Texas, USA , January 1998.
- 1997 Angola Ultra Deep Water Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 98-155, TDI-Brooks International, Inc., College Station, Texas, USA , April 1998.
- 1997 Central Gulf of Mexico Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 98-115, TDI-Brooks International, Inc., College Station, Texas, USA , February 1998.
- 1997 Western Gulf of Mexico Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 97-065, TDI-Brooks International, Inc., College Station, Texas, USA , July 1997.
- 1998 Gabon Ultra Deep Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 98-206, TDI-Brooks International, Inc., College Station, Texas, USA , September 1998.
- 1998 Nigeria Ultra Deep Consortium Program, Surface Heat Flow Interpretive Report, Technical Report 98-208, TDI-Brooks International, Inc., College Station, Texas, USA , September 1998.
- 1998 Nigeria Ultra Deep Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 98-237, TDI-Brooks International, Inc., College Station, Texas, USA , December 1998.
- 1999 Central Gulf of Mexico Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 99-289, TDI-Brooks International, Inc., College Station, Texas, USA , February 1999.
- 1999 Central Gulf of Mexico Heat Flow Program Phase 1, Surface Heat Flow Interpretive Report, Technical Report 99-303, TDI-Brooks International, Inc., College Station, Texas, USA , April 1999.
- 1999 Central Gulf of Mexico Heat Flow Program Phase 2, Surface Heat Flow Interpretive Report, Technical Report 99-324, TDI-Brooks International, Inc., College Station, Texas, USA , June 1999.
- 1999 Western Gulf of Mexico Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 99-338, TDI-Brooks International, Inc., College Station, Texas, USA , August 1999.
- 1999 Western Gulf of Mexico Heat Flow Program, Surface Heat Flow Interpretive Report, Technical Report 00-411, TDI-Brooks International, Inc., College Station, Texas, USA , January 2000.
- 2000 Angola Consortium Heat Flow Program, Surface Heat Flow Interpretive Report, Technical Report 00-510, TDI-Brooks International, Inc., College Station, Texas, USA , July 2000.
- 2000 Angola Ultra Deep Consortium - Central Area, Interpretive Surface Geochemical Exploration Report, Technical Report 00-495, TDI-Brooks International, Inc., College Station, Texas, USA , September 2000.
- 2000 Angola Ultra Deep Consortium - Northern Area, Interpretive Surface Geochemical Exploration Report, Technical Report 00-488, TDI-Brooks International, Inc., College Station, Texas, USA , September 2000.
- 2000 Central/Eastern Gulf of Mexico Consortium Program, Surface Heat Flow Interpretive Report, Technical Report 01-696, TDI-Brooks International, Inc., College Station, Texas, USA , February 2001.
- 2000 Central/Eastern Gulf of Mexico Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 01-698, TDI-Brooks International, Inc., College Station, Texas, USA , May 2001.
- 2000 Nigeria Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 00-446, TDI-Brooks International, Inc., College Station, Texas, USA , March 2000.
- 2000 Nile Delta Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 00-593, TDI-Brooks International, Inc., College Station, Texas, USA , January 2001.
- 2000 Nova Scotia Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 00-587, TDI-Brooks International, Inc., College Station, Texas, USA , January 2001.
- 2001 Guinea-Bissau Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 01-844, TDI-Brooks International, Inc., College Station, Texas, USA , December 2001.



- 2002 Newfoundland Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 02-951, TDI-Brooks International, Inc., College Station, Texas, USA , September 2002.
- 2003 Nigeria Sao Tome Joint Development Zone Consortium Program, Surface Heat Flow Interpretive Report, Technical Report 03-1066, TDI-Brooks International, Inc., College Station, Texas, USA , September 2003.
- 2003 Nigeria Sao Tome Joint Development Zone Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 03-1067, TDI-Brooks International, Inc., College Station, Texas, USA , July 2003.
- 2003 Trinidad Consortium Program, Surface Heat Flow Interpretive Report, Technical Report 03-1087, TDI-Brooks International, Inc., College Station, Texas, USA , September 2003.
- 2003 Trinidad Consortium Program, Interpretive Surface Geochemical Exploration Report, Technical Report 03-1088, TDI-Brooks International, Inc., College Station, Texas, USA , December 2003.

PATENTS DEVELOPED:

TOTAL ORGANIC CARBON ANALYZER

Date of Issue: October 28, 1986
Patent Number: 4,619,902

WATER MANAGEMENT DEVICE FOR GAS CHROMATOGRAPHY SAMPLE CONCENTRATION

Date of Issue: October 5, 1993
Patent Number: 5,250,093

SAMPLE CONCENTRATOR FILTER

Date of Issue: November 16, 1993
Patent Number: 5,261,937

WATER MANAGEMENT DEVICE FOR GAS CHROMATOGRAPHY SAMPLE CONCENTRATION

Date of Issue: October 25, 1994
Patent Number: 5,358,557

MANAGEMENT DEVICE FOR GAS CHROMATOGRAPHY SAMPLE CONCENTRATION

Date of Issue: November 28, 1995
Patent Number: 5,470,380

METHOD AND APPARATUS FOR LINEARIZATION OF NON-DISPERSIVE INFRARED DETECTOR RESPONSE

Date of Issue: June 18, 1996
Patent Number: 5,528,039

WATER MANAGEMENT DEVICE FOR GAS CHROMATOGRAPHY SAMPLE CONCENTRATION

Date of Issue: December 10, 1996
Patent Number: 5,582,633

WATER MANAGEMENT DEVICE FOR GAS CHROMATOGRAPHY SAMPLE CONCENTRATION

Date of Issue: September 29, 1998
Patent Number: 5,814,128