

Jeffrey A. Karson

Professor of Geology

*Department of Earth Sciences, 204 Heroy Geology Laboratory
Syracuse University, Syracuse, NY 13244-1070
315-443-7976 (office); 315-443-2672 (Department office)
jakarson@syr.edu*

Academic Degrees

Ph.D. (Geology) State University of New York at Albany, 1977
M.S. (Geology) State University of New York at Albany (SUNYA), 1975
B.S. (Geology) Case Institute of Technology (Case Western Reserve University), 1972

Academic Positions, Affiliations & Awards

Professor, Department of Earth Sciences, Syracuse University, August 2006-present
Department Chair and Jessie Page Heroy Professor, Department of Earth Sciences, Syracuse University, 2007-2013
Fellow, Geological Society of America, 2006
Professor, Division of Earth & Ocean Sciences, Nicholas School of the Environment & Earth Sciences, Duke University, 1996-2006
Department Chair, Department of Earth & Ocean Sciences, Duke University, 1996-2000
Research Fellow, Danish Lithosphere Center, 1994-2000
Adjunct Research Scientist, Lamont-Doherty Earth Observatory, 1992-2002
Professor, Department of Geology, Duke University, 1992-1996
Associate Professor, Department of Geology, Duke University, 1986-92
Associate Scientist, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, 1984-86
Summer Faculty Fellow, Department of Geology & Planetology, Jet Propulsion Lab, California Institute of Technology, 1984 and 1985
Assistant Scientist, Department of Geology & Geophysics, Woods Hole Oceanographic Institution, 1980-84
Postdoctoral Scholar, Woods Hole Oceanographic Institution, 1979-80
Postdoctoral Fellow, University of Toronto, 1977-79
Research Assistant, Department of Geological Sciences, SUNY at Albany, 1976-77
Teaching Assistant, Department of Geological Sciences, SUNY at Albany, 1972-76

Professional Affiliations

Fellow of the Geological Society of America; American Geophysical Union;
International Association of Structural and Tectonic Geologists; Working Group
on Mediterranean Ophiolites

Professional Service

Scientific Community

Reviewer for several scientific journals (*Nature*, *G-cubed*, *Geology*, *Tectonophysics* and others)

Reviewer for National Science Foundation proposals (EAR, OCE, and others)
National Science Foundation, Ocean Sciences Research Section Panel, 1996-1998, 2001-2004, 2012

Reviewer for proposals to other institutions (NERC, Keck Foundation, National Geographic Society, Newton Foundation)

Nominator for Distinguished Colleagues for Fellowships in GSA and AGU, 2009-2014

NOAA Ocean Exploration *R/V Nautilus* Advisory Board, 2009-present

NOAA Ocean Exploration Review Panel, 2012

University National Oceanographic Laboratories (UNOLS), Deep Submergence Science Committee (DESSC), 2004-10

Invited Speaker, Nordic Volcanological Institute, Summer School on Magmatic Plumbing Systems and Intrusions, 2010

RIDGE 2000 Education & Outreach Advisory Committee, 2003-2008

Editorial Board, *Geology*, 2004-2006

National Science Foundation MARGINS Program Review Committee, 2004

Reviewer for Council for the International Exchange of Scholars, Senior Fulbright Scholar Program, 1998-1999

Editorial Review Committee, 4th RIDGE Theoretical Institute, Proceedings Volume, 1997-1998

Chief, Editorial Review Board, ODP Leg 153, Scientific Results Volume, 1997

Invited Lecturer, RIDGE & Nordic Volcanological Institute, Summer School on Active Processes at Mid-Ocean Ridges, 1997

Geological Society of America, Structural Geology & Tectonics Division, Short Course Committee, 1992-1995

Co-Convener, RIDGE Theoretical Institute on Faulting and Magmatism at Mid-Ocean Ridges, 1995

Co-Convener, RIDGE RISES Workshop on Crustal Accretion Variables, 1994

Ocean Drilling Program: Tectonics Panel, Liaison to Lithosphere Panel and Member of Offset-Drilling Working Group, 1990-1993

National Research Council, Ocean Studies Board: Continental Margins Workshop and Strength of the Lithosphere Workshop, 1989

Convener, Workshop on Remote Sensing of Ophiolites and the structure of oceanic crust, 1986

University

Co-sponsor (with VPR Gina Lee Glauser), Fast-Forward, Operational Excellence, Sponsored Programs Initiative, 2014-present

Chief Human Resources Officer Search Committee, 2012

Syracuse University Lecture Series Advisory Board, 2007-present

Syracuse University Advance Program participant and supporter

North Carolina State University, Department of Marine, Earth & Atmospheric Sciences, External Review Committee, 2006
Union College, Department of Geology, External Review Committee, 2007
Duke University Fulbright Program Reviewer, 2004-06
Duke University Science and Engineering Library Committee, August 2004-06
Duke University Library Council, August 2004-06
Duke University Ad Hoc Committee on Scientific Misconduct, 1999
Nicholas School of the Environment & Earth Sciences Faculty Council, 1996-99
Nicholas School of the Environment/Geology Department Merger Task Force, 1996
Duke University Academic Tenure & Promotions Committee, Co-Chair, 1995-96
Duke University Study Abroad Program Committee, 1988-92

College

Earth Sciences Chair Succession Review Committee, 2016
Syracuse University, College of Arts & Sciences, Science & Math Council, 2009-13
J.D. Steele Distinguished Chair Review Committee, 2012
Chair, Dean's Excellence Initiative Proposal Review Committee, 2011

Department

Chair, Department of Earth Sciences, Syracuse University, 2007-13
Chair, Division of Earth & Ocean Sciences, NSEES, Duke University, 1996-2000
Successfully nominated 4 colleagues for university-level distinguished teaching and research awards at Syracuse University
Successful proposals, searches, hires, and start-ups for 9 faculty members (Duke University and Syracuse University)
Managed 9 promotion and tenure cases
Negotiated 4 faculty retirements

Community

Frequent contributor to Café Jr. Scientifique, MOST, 2007, 2010, 2015
Coordinator for lava flow demonstrations for k-12 classes from local schools, 2009-present

Teaching Highlights

- Taught fundamental courses in geosciences (Undergraduate: Introductory Geology, Earthquakes & Volcanoes, Structural Geology; Graduate: Plate Tectonics, Microstructures, Advanced Structural Geology, Oceanic Lithosphere)
- Created a website for public outreach & education locally and on-line (>30M website hits worldwide fall 2013-fall 2014); <http://lavaproject.syr.edu>
- Launched "*The Subject is Lava*" Massive Open Online Course (April 2014) <https://syracuseu.coursesites.com/>
- Built an ocean exploration command and control center for virtual student participation and direction of NOAA research cruises (2011-present)
- Developed a new cross-disciplinary course on the *Science & Art of Lava* HRN 340/350 in the Renée Crown Honors Program (fall 2014 & 2015) and College of Arts & Sciences (2016)

Online Resources

Karson, J.A., D.J. Fornari, D.S. Kelley, M.J. Perfit, and T.M. Shank, *Discovering the Deep: A Photographic Atlas of the Seafloor and Oceanic Crust*, Cambridge University Press (electronic version, slide shows and video clips): <http://www.cambridge.org/us/academic/subjects/earth-and-environmental-science/oceanography-and-marine-science/discovering-deep-photographic-atlas-seafloor-and-ocean-crust?format=HB>

Orange is the new black (lava): The Syracuse University Lava Project, AGU Volcanology, Petrology & Geochemistry Division Website, Spotlight on Research, 11/14-present: <http://vgp.agu.org/orange-is-the-new-black-lava/>

MOOC: The Subject is Lava (launched 4/14): <http://syracuseU.coursesites.com>

Syracuse University Lava Project: <http://lavaproject.syr.edu>

Faculty Website: <http://asfaculty.syr.edu/pages/ear/karson-jeff.html>

Pito Deep Cruise 2005: <http://www.nicholas.duke.edu/pitodeep/index.html>

Lost City Cruise 2003: <http://www.lostcity.washington.edu>

Lost City NOAA Exploration:

<http://oceanexplorer.noaa.gov/explorations/05lostcity>

Hess Deep Expedition: <http://www.nicholas.duke.edu/hessdeep/hessdeep.html>

Macquarie Island: <http://www.aad.gov.au/stations/macca>

Research Experience

Extensive collaborations with geophysicists, petrologists and geochemists

Field-based studies of faulting and magmatic construction in rift zones and transform faults in oceanic and continental terranes worldwide. Led and coordinated, geological field expeditions with 3-10 investigators to remote regions of Africa, Greenland, Iceland, Canada, Arabia, Iceland and sub-Antarctic islands, principal or co-principal investigator on ~20 research grants in support of these projects

Oceanographic research cruises including extensive work with submarines (e.g., *DSRV Alvin*), remotely operated and autonomous vehicles, and crustal drilling; chief scientist on 10 cruises

Co-founder of the Syracuse University Lava Project

- Overall management of unique fusion of science, education, art and outreach on campus and on-line featuring large-scale (~half ton) experiments with molten rock for scientific investigations with national/international collaborators and K-university class demonstrations on campus
- Led summer program for Keck Geology Consortium for undergraduate students (June 2014, June 2015)
- Facilitated artistic creations by Professor Robert Wysocki and interdisciplinary student participation from across the University (VPA, Arts & Sciences, L.C. Smith, Architecture, Newhouse Schools)

- Linked lava research and education through field studies of lava in Iceland and experiments at Syracuse University in the Keck Geology Consortium Lava Project; <http://www.keckgeology.org>
- * Linked field investigation of active fissure eruption at Holuhraun, Iceland, to lava flow experiments and SU classes via NSF RAPID grant (fall 2014)

Extramural Funding by Topic

Support for scientific research and education from the National Science Foundation and other agencies totaling >\$6M (not counting research vessel costs).

Iceland Tectonics & Volcanism

RAPID Investigation of Active Fissure Eruptions, Holuhraun, Iceland
\$16,506, NSF-EAR, 1505710, 12/15/14-11/30/15

Rift Propagation, Transform Migration, and Microplate Tectonics in Iceland
\$380,025, NSF-OCE, 05/03/12-08/05/11

Structural Control of Hydrothermal flow: A Comparison Between the RIDGE2000 Sites and Iceland Spreading Centers
\$159,411, NSF-OCE, 08/19/09-04/07/09, with D. Curewitz (Syracuse)

Iceland Flexure Zones: Analogs for Mid-Ocean Ridge Spreading Centers
\$310,736, NSF-OCE, 07/29/04-02/11/08, with R. Varga (Pomona)

Lava Project & Education

Constraining Processes in Natural and Experimental Lava Flows
\$44,000, Keck Geology Consortium, 6/12/15-6/11/16

Lava Flow Demonstrations for SU Undergraduate Classes
\$3000, Co-curricular and i-Learn Funds, CAS Dean's Office, 10/14-5/15

RAPID Investigation of Active Fissure Eruptions, Holuhraun, Iceland
\$16,506, NSF-EAR, Petrology & Geochemistry, 11/03/14-11/02/15

Calibrating Natural Basaltic Lava Flows with Large-Scale Lava Experiments
\$44,000, Keck Geology Consortium, 6/15/14-6/14/15

Lava Flow Demonstrations for SU Undergraduate Classes
\$3000, Co-curricular and i-Learn Funds, CAS Dean's Office, 10/13-5/14

The Syracuse University Lava Project: Going to the Next Level in Science, Art, Education & Outreach
\$150,000 (infrastructure and program support), May 2013, with Robert Wysocki (Syracuse University Sculpture Program)

Lava Flow Demonstrations for Undergraduate Earth Science Classes
\$2000, Co-curricular Funds, CAS Dean's Office, 9/112-5/13

The Syracuse University Lava Project (initial funding)
\$20,000, Syracuse University Central Administration (multiple sources), June 2010, with Robert Wysocki (Syracuse University Sculpture Program)

Extending the Scope of Geological Field Trips with Computers
\$89,600, FIPSE (Fund for the Improvement of Post-Secondary Education)
8/1/91-7/31/93, with S.D. Hurst and R.D. Perkins (Duke)

Rifts & Rifted Margins

Geometry and Kinematics of Faulting and Dike Intrusion in the Tertiary East Greenland Rifted Margin
\$119,307, NSF-EAR, 6/1/95-5/31/97 (field program funded separately by the Danish Lithosphere Center- \$2M)

Detailed Study of Deltaic Facies in East African Rift Lakes
\$30,000, SEPRO (A Group of 6 Oil Co. Sponsors), 4/1/91-3/31/93
(Structure and tectonics portion of much larger grant) with T. Johnson and C. Scholz (Duke)

Upper Crustal Extension in the Turkana Rift: 3-D Geometry and Kinematics of Small-Magnitude Extension in East Africa
\$109,969, NSF-EAR, 3/1/90-8/31/92

Tectonic Study of the Rukwa-Malawi Rift, East African Rift System
\$11,650, National Geographic Society, 4/1/86-3/31/87

Geologic Transect of the Southern Turkana Rift, East African Rift System
\$4900, Duke University Research Council, 7/1/86-6/30/87

Marine Geology & Geophysics

Major Grants Awarded as Principal Investigator or co-Investigator; do not include cost of ship time or costs for use of submarines or remotely operated vehicles

Structure and Composition of Superfast Crustal Structure Exposed at Pito Deep,
\$610,132, NSF-OCE, 1/1/03-12/31/05, with E. Klein (Duke), R. Hey (U of HI), D. Naar (USF), and J. Gee (SIO)

Investigation of a new class of hydrothermal systems: The Lost City Hydrothermal Field: A peridotite-hosted, off-axis system at 30°N on the Mid-Atlantic Ridge
\$303,087, NSF- OCE, 4/1/02-3/31/05, with D. Kelley and others (U of WA)

Accomplishment Based Renewal: Geometry and Kinematics of Upper Crustal Construction at Mid-Ocean Ridges: Supplement for Paleomagnetic Studies of Upper Crustal Rocks from Hess Deep
\$ 35,000, NSF-OCE, 10/1/01-9/30/02, subcontract to College of Wooster (R. Varga)

Supplement to: Eastern Atlantis Ridge-Transform Intersection High: Oceanic Analog to a Continental Core Complex?- for interactive cruise web site
\$30,000, NSF- OCE, 10/1/00-9/30/01, with D. Blackman (SIO)

Accomplishment Based Renewal: Geometry and Kinematics of Upper Crustal Construction at Mid-Ocean Ridges
\$ 350,000, NSF- OCE, 1/1/00-12/31/03

Near-Bottom Geological and Geophysical Investigation of an "Oceanic Core Complex": Eastern Atlantis Ridge-Transform Intersection Massif
\$264,505, NSF- OCE, 3/1/99-12/31/02, with D. Blackman (SIO) and D. Kelley (U of WA)

Jason/Medea & Alvin Investigation of the Uppermost Oceanic Crust at Hess Deep
\$ 310,498, NSF-OCE, 9/1/98-8/31/01, with E.M. Klein (Duke) and S.D. Hurst (U of IL)

Laser Surface Mapping System for Quantitative Orientation and Morphologic Data from *Alvin* and ROVs
\$217,336, NSF- OCE, RIDGE, and ODP, 6/1/98-5/31/99

Continuation of Digital Processing and Geological Interpretation of Sonar Images from Major Submarine Scarps: Blanco Trough and Kane Fracture Zone
\$86,848, NSF-ODP, 6/1/94-5/31/96, with J. Delaney (U of WA) and F. Spiess (SIO)

Structural Evolution of Lower Crustal and Upper Mantle Rocks Exposed on the Median Valley Walls of the MARK Area
\$20,249, JOI/USSSP, 4/1/94-3/31/95

Drilling in the Western Wall of the MARK Area: ODP Leg 153 (co-chief scientist)
\$42,800, Ocean Drilling Program, 1/1/93-10/31/96

Correlation of Geologic and Seismic Structures in the Southern MARK Area: Surface Manifestations of Active Normal Faulting on the Mid-Atlantic Ridge
\$297,350, NSF-OCE, 3/1/93-12/31/96

Crack Structure of Seafloor Outcrops Based on Analysis of Digital Images
\$66,773, ONR, 1/1/92-9/30/93
with S.D. Hurst (Duke)

Rock Magnetic Properties and Paleomagnetism of Upper Crustal Sections of the East Pacific Rise at Hess Deep
\$18,360, NSF-OCE, 7/1/91-6/31/92
(nominal P.I. for postdoctoral investigator S.D. Hurst)

Variations in Tectonic Extension Along Slow-Spreading Ridge Axes
\$20,500, ONR, 10/1/89-12/31/91

A New Approach to the Study of Episodic Accretion on the Mid-Atlantic Ridge: Interpretation & Sampling of Crustal Sections at the Kane Transform Based on a Complete Outcrop Map
\$92,873, NSF-OCE, 7/1/90-12/31/92, with J. Delaney (U of WA) and F. Speiss (SIO)

Structural Study of Fast-Spread Oceanic Crust Exposed in the Walls of Hess Deep
\$93,643, NSF-OCE, 1/1/90-7/31/91, with P. Lonsdale and J. Natland (SIO)

Site Survey of Potential Drill Sites at the Kane Fracture Zone and Adjoining Ridge Segment
\$9,330, JOI, Inc. (SC from URI), 3/1/86-6/31/86

An Investigation of the Seismic Variability of the Oceanic Moho
\$99,830, NSF-OCE (funded in full but returned due to departure of P.I.'s from submitting institution), with T Brocher (WHOI)

Combined Petrological, Geochemical, and Structural Study of the Mid-Atlantic Ridge 23-24°N Latitude Using ALVIN and ANGUS
\$92,853, NSF-OCE, 2/15/86-7/31/88

Submersible Investigation of the Clipperton Transform: Tectonic Manifestations of a Fast-Slipping Plate Boundary
\$91,937, NSF-OCE (SC from URI), 1/1/85-12/31/86, with P.J. Fox (URI) & K. Macdonald (UCSB)

Site Survey of Potential Drill Sites In and Near the Kane Fracture Zone
\$42,206, JOI, Inc., 8/1/84-6/30/86

Deformation Microstructures in Mafic Rocks from the Oceanic Crust
\$86,589, NSF-OCE, 1/1/83-12/31/84

A Cooperative Investigation of Hydrothermal and Geological Processes at the TAG Hydrothermal Field, Mid-Atlantic Ridge 26°N
\$81,002, NSF-OCE, 3/15/82-2/28/84, with W. Bryan, G. Thompson & M. Mottl (WHOI)

Seismic Reflection Profiling with a Deep-Towed Vertical Hydrophone Array
\$52,492, NSF-Ocean Sciences, 1/1/81-12/31/82, with T. Brocher (WHOI)

Petrogenesis and Geochemical Evolution of Deep Oceanic Crust
\$144,948, NSF-OCE, 2/1/81-1/3/82

Manned Submersible and Photographic Investigation of Deep Crustal Stratigraphy and
Structure in the Kane Fracture Zone, Mid-Atlantic Ridge at 24°N
\$190,290, NSF-OCE, 3/1/80-2/22/81, with W. Bryan and G. Thompson (WHOI)

The Oceanographer Transform Fault (35°N, 35°W): The Structure and Dynamics of a
Transform and Adjacent Ridge Axis
\$146,202, ONR, (subcontract from LDGO/SUNYA), 1/1/80-12/31/83, with P.J.
Fox (SUNYA)

Ophiolites & Related Terranes

Tectonic, Magmatic and Hydrothermal Evolution of Ocean Floor Spreading at
Macquarie Island
\$390,000, Antarctic-Australian Research Expedition (ANARE), 1/1/01-12/33/03,
with G. Davidson (U of Tasmania)

Internal Structure of Uppermost Oceanic Crust Exposed on Macquarie Island:
Implications for Seafloor Spreading Processes
\$130,000, Antarctic-Australian Research Expedition (ANARE), 10/1/99-9/30/00

Remote Sensing Study of a Precambrian Suture Zone in Morocco
\$4,800, Duke University Research Council, 7/1/89-6/30/90

Structural Evolution of the Bou Azzer Ophiolite Complex, Morocco
\$1,185, Duke University Research Council, 7/1/87-6/30/88

Geological, Petrological, and Geochemical Study of the Ophiolitic Rocks of the Bay of
Islands Region of Western Newfoundland
\$109,000, NSF-EAR, 4/1/81-3/31/83, with J. Casey and D. Elthon (U of Houston)

Structural and Petrofabric Studies of the Ultramafic/Gabbro Transition Zone in the Bay
of Islands Ophiolite Complex, Western Newfoundland
\$37,674, NSF-EAR, 5/1/74-5/30/76, with J.F. Dewey (SUNYA, advisor)

Graduate & Postdoctoral Supervision

Primary supervisor for 16 MS Theses, 11 Ph.D. Dissertations and 4 Postdoctoral investigators at Duke University and Syracuse University.

M.S. Theses Supervised Duke University

- Istvan Barany**, 1987. Basaltic Breccias of the Clipperton Fracture Zone: Sedimentation and Tectonics in a Fast-Slipping Oceanic Transform
- Jennifer R. Brown**, 1987. Variations in Volcanic Processes along the Median Valley of the Mid-Atlantic Ridge 22°50'N to 23°40'N
- Alec T. Winters**, 1988. Extensional Faulting in the MARK Area
- Walter H. Wheeler IV**, 1989. Livingstone Mountains Border Fault System, Lake Nyasa (Malawi), East Africa: A Case Study of an Oblique-Slip Rift Basin Border Fault From Onshore and Subsurface Perspectives (with B.R. Rosendahl)
- Wendy J. Graber**, 1991. Geology of a Late Proterozoic Intra-Arc Basin, Kelaa des Mgouna Inlier, Anti-Atlas, Morocco
- Sarah E. Bigger**, 1993. Tectonics of the Eastern Third of the Kane Transform Fault, Mid-Atlantic Ridge, 23°38'N Latitude: An Up/Down-Looking Sonar Perspective
- Tyler Clark**, 1998. Structure and Stratigraphy of the Deep River Basin, NC: Border Faults and Accommodation Zones (with P.E. Malin)
- Sarah Tougas**, 1998. Structural Analysis of East Pacific Rise Crust Exposed in the Hess Deep Rift: Constraints on Crustal Accretion at Fast-Spreading Ridges
- Carrie Lee**, 2002. The internal structure of the sheeted dike complex at the Hess Deep Rift : implications for spreading processes beneath the fast-spreading east Pacific rise
- Peter Rivizzigno**, 2002. The Major Lake Fault Zone: An Oblique Spreading Structure Exposed in the Macquarie Island Ophiolite, Southern Ocean
- Melissa Cardwell Dowland**, 2003. Structural Evolution of the Blönduós Flexure Zone, Northern Iceland
- Lindsay Morgan Chutas**, 2007. Structures in Upper Oceanic Crust: Perspectives from Pito Deep and Iceland

Syracuse University

- Aleece F. Nanfито**, 2011. Rift-Parallel, Strike-Slip Faulting in Iceland: Kinematic Analysis of the Gljufurá Fault Zone
- Matthew T. Kissane**, 2012. Investigations into Lava Flow Morphology, Using Field-Scale Basalt Flows
- Keegan T. Runnals**, 2015. Multiple generations of faulting: A kinematic analysis of the Lagerfljót Region, northeast Iceland
- James A. Proett**, 2015. Enigmatic rift-parallel, strike-slip faults around Eyjafjörður, northern Iceland

Ph.D. Dissertations Supervised

Duke University

- Kevin P. Hefferan**, 1992. Oblique Collision and Syn-Orogenic Basin Development in a Pan-African Suture Zone, Anti-Atlas Mountains, Morocco
- Nico R. Mliga**, 1994. Depositional Environments, Stratigraphy and Hydrocarbon Potential of the Rukwa Rift Basin, Southwest Tanzania
- Walter H. Wheeler IV**, 1994. Structural Studies of Transform Fault Tectonics and Rift Basin Formation Along the Western Branch of the East African Rift System
- Dengliang Gao**, 1997. Seafloor Geology at the Eastern Intersection of the Mid-Atlantic Ridge and the Kane Transform (23°40'N): A New Perspective from Side-Scan Sonar Image Analysis
- Róisín M. Lawrence**, 1998. Paleomagnetic Studies of the Geometry and Kinematics of Faulting at the Slow-Spreading Mid-Atlantic Ridge (MARK Area)
- Daniel Curewitz**, 1999. Investigations of Faulting, Magmatism, and Hydrothermal Activity in Extensional Environments
- Elizabeth A. Williams**, 2004. The Structural History of the Atlantis Massif, an Oceanic Core Complex at 30°N on the Mid-Atlantic Ridge

Syracuse University

- Drew L. Siler**, 2011. Structure and Kinematics of Segment-Scale Crustal Accretion Processes in Iceland and Implications for Analogous Mid-Ocean Ridge Systems
- Andrew J. Horst**, 2013. Structure and Accretion At Mid-Ocean Ridges With High Magma Supply: Perspectives from Seafloor Escarpments and Iceland
- Christopher J. Sant**, current. Dynamics and Morphology of Large-Scale Experimental Lava Flows
- James A. Farrell**, current. Kinematics of Regional Strike-Slip Faulting in Iceland: implications for Spreading at Mid-Ocean Ridges and Rifted Margins

Member of many M.S. thesis and Ph.D. dissertation committees at Duke and Syracuse Universities as well as in the following institutions: Université Cadi Ayyad, Marrakech Morocco (6 M.S., 3 Ph.D.), Woods Hole-MIT Joint Program (5 Ph.D.), Danish Lithosphere Center (2 Ph.D.), Université Paris VI (1 Ph.D.), University of Washington (1 Ph.D.), University of North Carolina-Chapel Hill (1 Ph.D.); University of Natal (1 M.S.); University of Iceland (1 Ph.D).

Postdoctoral Investigators Supervised

Duke University

Stephen D. Hurst (Senior Research Programmer, University of Illinois) Duke University, 1995-2002, Supported by grants from NSF, ODP, ONR
Digital field trips, digital image analysis, HD expedition

Nicolas W. Hayman, (Research Scientist, University of Texas, Institute for Geophysics) Duke University, 2003-2007)

Syracuse University

Daniel Curewitz (Lecturer, Syracuse University) Syracuse University, 2008-2011, Supported by NSF grants, structural controls on hydrothermal systems in Iceland and the mid-ocean ridge system

Aisha R. Morris (AAAS Congressional Fellow; Director RESSES, UNAVCO), Syracuse University, 2009-2011, supported by Alliance for Graduate Education and the Professoriate Postdoctoral Fellowship, volcanic processes on Earth and Mars

Refereed Publications by Topic
(complete listing)

Marine Geology & Geophysics

2010-present

- Szitkar, F., Tivey, M.A., Kelley, D.S., Karson, J.A., Früh-Green, G.L., and Denny, A., Magnetic exploration of a low-temperature ultramafic-hosted hydrothermal site (Lost City, 30°N, MAR), *Proc. Nat. Acad. Sci.*, in review, 2016.
- Worman, S.L., Pratson, L.F., Karson, J.A. and Klein, E.M., Global rate and distribution of H₂ gas produced by serpentinization within oceanic lithosphere, *Geophys. Res. Lett.*, 43, 12, 6435-6443, doi:10.1002/2016GL06906612, 2016.
- Horst, A. J., R. J. Varga, J. S. Gee, J. A. Karson, Diverse magma flow directions during construction of sheeted dike complexes at fast- to superfast-spreading centers, *Earth Planet Sci. Let.*, 408, 119-131, 2014.
- Karson, J.A., K.L.C. Bell, A.F. Nanfity, D. Joyce, M. Cunha, J. Cristobo and E. Manhon, In search of serpentinization on Gorrington Bank, in Bell, K.L.C., K. Elliot, C. Martinez and S.A. Fuller, eds., *New Frontiers in Ocean Exploration: The E/V Nautilus and NOAA Ship Okeanos Explorer 2011 Field Season*, *Oceanography*, 25 (1), supplement, 38-39, 2012.
- Horst, A.J., R.J. Varga, J. Gee and J. Karson, Paleomagnetic constraints on constructional deformation of superfast-spread oceanic crust exposed at Pito Deep Rift, *J. Geophys. Res.*, 116, B12103, doi:10.1029/2011JB008268, 2011.
- Christeson, G.L., J.A. Karson, and K.D. McIntosh, Mapping of seismic layer 2A/2B boundary above the sheeted dike unit at intermediate-spreading crust exposed near the Blanco Transform, *Geochemistry, Geophysics, Geosystems (G-Cubed)*, 11, Q03015, doi: 10.1029/2009GC002864, 2010.

2000-2009

- Hayman, N.W. and J.A. Karson, Faulting and hydrothermal alteration in superfast spread crust of the East Pacific Rise exposed at Pito Deep, *G-cubed 10*, Q02013, doi:10.1029/2008GC002319, 2009.
- Pollock, M.A., E.M. Klein, J.A. Karson and D.S. Coleman, Compositions of dikes and lavas from the Pito Deep Rift: Implications for accretion at superfast spreading

centers, *Journal of Geophysical Research* 114, B03207, doi:10.1029/2007JB005436, 2009.

Heft K., K.M. Gillis, M.A. Pollock, J.A. Karson, E.M. Klein, Constraints on the nature of axial hydrothermal systems from the sheeted dike complex exposed at Pito Deep, *G-Cubed* 9 (5), Q05O07, doi:10.1029/2007GC001926, 2008.

Varga, R.G., A. Horst, J.S. Gee and J.A. Karson, Direct evidence from anisotropy of magnetic susceptibility for lateral melt migration a superfast spreading centers, *G-Cubed* 9 (8), Q08008, doi:10.1029/2008GC002075, 2008.

Christeson, G.L., K.D. McIntosh and J.A. Karson, Inconsistent correlation of seismic layer 2a and lava layer thickness in oceanic crust, *Nature* 445, doi:10.1038/nature05517, 2007.

Hayman, N.W. and J.A. Karson, Faults and damage zones in fast-spread crust exposed on the north wall of the Hess Deep Rift: Conduits and seals in seafloor hydrothermal systems, *G-Cubed*, 8, 10, Q10002, doi:10.1029/2007GC001623, 2007.

Kelley, D.S., G.L. Früh-Green, J.A. Karson, and K.A. Ludwig, Lost City hydrothermal field revisited, *Oceanography* 20, 4, 90-99, 2007.

Perk, N.W., L.A. Coogan, J.A. Karson, J.A., E.M. Klein, and H.D. Hanna, The primitive lower oceanic crust from Pito Deep: Implications for the accretion of the lower crust at the southern east Pacific Rise, *Contributions to Mineralogy and Petrology*, doi:10.1007/s00410-007-0210-z, 2007.

Boschi, C., G.L Früh-Green, A.G. Delacour, D.S. Kelley, and J.A. Karson, Mass transfer and fluid flow during detachment faulting and development of an oceanic core complex, Atlantis Massif (MAR 30°N), *G-cubed* 7(1), doi:10.1029/2005GC001074, 2006.

Karson, J.A., G.L. Früh-Green, D.S. Kelley, E.A. Williams, D.R. Yoerger, and M. Jakuba, Detachment shear zone on the Atlantis Massif Core Complex, Mid-Atlantic Ridge 30°N, *G-Cubed* 7 (6), doi:10.1029/2005GC001109, 2006.

Stewart, M.A., J.A. Karson and E.M. Klein, Four-dimensional upper crustal construction at fast-spreading mid-ocean ridges: A perspective from an upper crustal cross-section at the Hess Deep Rift, *J. Volcanology Geothermal Res.* 144, 287-309, 2005.

Karson, J.A., J. Francheteau, J.S. Gee, K.M. Gillis, N.W. Hayman, R. Hékinian, R.N. Hey, S.D. Hurst, E.M. Klein, D.F. Naar, R.G. Varga and Pito Deep 2005 Scientific Party, Nested-scale investigation of tectonic windows into super-fast spread crust exposed at the Pito Deep Rift, Easter Microplate, SE Pacific, *InterRidge Newsletter*, 14, 5-8, 2005.

Kelley, D.S., J.A. Karson, G.L. Früh-Green, D.R. Yoerger, T.M. Shank, D.A. Butterfield, J.M. Hayes, M.O. Schrenk, E. Olson, G. Proskurowski, M. Jakuba, A. Bradley, B. Larson, K. Ludwig, D. Glickson, K. Buckman, A.S. Bradley, B. Brazelton, K. Roe, M.J. Eland, A.

- Delacour, S.M. Bernasconi, M.D. Lilley, J.A. Baross, R.E. Summons, and S.P. Sylva, Geological, biological, and hydrothermal processes at the Lost City Vent Field: A serpentinites-hosted ecosystem: The Lost City Hydrothermal Field, *Science* 307, 1428-1434, 2005.
- Pollock, M.A., E.M. Klein, J.A. Karson, and M. A. Tivey, Temporal and spatial variability in the composition of lavas exposed along the Western Blanco Transform Fault, *G-cubed* 6 (11), doi:10.1029/2005GC001026, 2005.
- Hurst, S.D. and J.A. Karson, Side-scan processing and interpretation along the northern wall of the Hess Deep Rift: Texture analysis and geologic ground-truth, *J. Geophys. Res.* 109 (B02107, doi:10.1029/2002JB002116, 2004.
- Varga, R.G., J.A. Karson and J.S. Gee, Paleomagnetic constraints on deformation models for oceanic crust exposed at the Hess Deep Rift: Implications for axial processes at the East Pacific Rise, *J. Geophys. Res.* 109 (B2102), doi:10.1029/2003JB002486, 2004.
- Früh-Green, G.L., D.S. Kelley, S.M. Bernasconi, J.A. Karson, C. Boschi, K.A. Ludwig, D.A. Butterfield, 30,000 Years of Hydrothermal Activity at the Lost City Hydrothermal Field, *Science* 301, 495-498, 2003.
- Karson, J.A. and G.L. Christeson, Comparison of geologic and seismic structure of uppermost fast-spread oceanic crust: Insights from a crustal cross section at the Hess Deep Rift, in *Small-Scale Crustal Heterogeneity: Nature, Scaling, and Seismic Properties*, edited by J.A. Goff and K. Holliger, Kluwer/Plenum Publishing, NY, 99-129, 2003.
- Stewart, M.A., E.M. Klein, J.A. Karson and J.G. Brophy, Geochemical relationships between dikes and lavas at the Hess Deep Rift: Implications for magma eruptibility, *J. Geophys. Res.*, 108(B4), 2184, doi:10.1029/2001JB001622, 2003.
- Blackman, D.K., J.A. Karson, D.S. Kelley, J.R. Cann, G. L. Früh-Green, J.S. Gee, S.D. Hurst, B.E. John, J. Morgan, S.L. Nooner, D.K. Ross, T.J. Schroeder and E.A. Williams, Geology of the Atlantis Massif (Mid-Atlantic Ridge, 30°N): Implications for the evolution of an ultramafic oceanic core complex, *Mar. Geophys. Res.* 23, 443-469, 2002.
- Karson, J.A., Geologic structure of the uppermost oceanic crust created at fast- to intermediate-rate spreading centers, *Ann. Rev. Earth Planet. Sci.*, 30, 347-384, 2002.
- Karson, J.A., E.M. Klein, S.D. Hurst, C.E. Lee, P.A. Rivizzigno, D. Curewitz, A.R. Morris, and Hess Deep '99 Scientific Party, Structure of uppermost fast-spread oceanic crust exposed at the Hess Deep Rift: Implications for subaxial processes at the East Pacific Rise, *Geochemistry, Geophysics, Geosystems (G-Cubed)*, 3, doi:10.1029/2001GC000155], 2002.
- Karson, J.A., M.A. Tivey, and J.R. Delaney, Internal structure of uppermost oceanic crust along the western Blanco Transform Scarp: Implications for subaxial accretion and deformation at the Juan de Fuca Ridge, *J. Geophys. Res.*, 107(B9), 2181, doi:10.1029/2000JB000051, 2002.
- Lawrence, R.M., J.S. Gee, and J.A. Karson, Magnetic anisotropy of serpentinitized peridotites from the MARK Area: Implications for the orientation of mesoscopic

structures and major fault zones, *J. Geophys. Res.*, 107(B4), 2073, doi:10.1029/2000JB000007, 2002

- Stewart, M.A., E.M. Klein and J.A. Karson, The geochemistry of dikes and lavas from the north wall of the Hess Deep Rift: Insights into the four-dimensional character of crustal construction at fast-spreading mid-ocean ridges, *J. Geophys. Res.*, 107, doi 10, 1029/2001JB000545, 2002.
- Blackman, D.K., D.S. Kelley, J.A. Karson and Shipboard Scientific Party, Seafloor Mapping and Sampling of the MAR 30°N Oceanic Core Complex-MARVEL (*Mid-Atlantic Ridge Vents in Extending Lithosphere*) 2000, *InterRidge Newsletter*, 10, 33-36, 2001.
- Gillis, K.M., K. Muehlenbachs, M. Stewart, T. Gleeson, and J.A. Karson, Fluid flow patterns in fast-spreading East Pacific Rise crust exposed at Hess Deep, *J. Geophys. Res.*, 106, 26,311-26,329, 2001.
- Karson, J.A., Oceanic crust when Earth was young, *Science*, 292, 1076-7, 2001.
- Kelley, D.S., J.A. Karson, D.K. Blackman, G.L. Früh-Green, D.A. Butterfield, M.D. Lilley, E.J. Olson, M.O. Schrenk, K.K. Roe, G.T. Lebon, P.A. Rivizzigno and the AT3-60 Shipboard Party, An off-axis hydrothermal vent field near the Mid-Atlantic Ridge at 30° N, *Nature*, 412, 145-149, 2001.
- Kelley, D., Karson, J., Blackman, D., Früh-Green, G., Butterfield, D., Lilley, M., Schrenk, M., Olson, E., Roe, K., Lebon, J., and Shipboard Scientific Party, Discovery of Lost City: An off-axis, peridotite-hosted, hydrothermal field near 30°N on the Mid-Atlantic Ridge, *RIDGE Events Newsletter*, 11, 3-9, 2001.
- Meurer, W.P., M. Sturm, E.M. Klein, and J.A. Karson, Basalt compositions from the Mid-Atlantic Ridge at the SMARK area (22°30'N to 22°50'N)—Implications for parental liquid variability at isotopically homogeneous spreading centers, *Earth Planet. Sci. Lett.*, 186, 451-469, 2001.
- Sturm, M., E.M. Klein, J. Karsten, D. Graham, and J. Karson, Evidence for subduction-related contamination of the mantle beneath the southern Chile Ridge: Implications for ambiguous ophiolite compositions, in *Ophiolites and Oceanic Crust: New Insights from Field Studies and Oceanic Drilling*, edited by Y. Dilek, E.M. Moores, D. Elthon and Nicolas, *Geol. Soc. Amer.*, Special Paper, 349, 13-20, 2000.
- Sturm, M., S. Goldstein, E.M. Klein, J.A. Karson, and M.T. Murrell, Uranium-series age constraints on lavas from the axial valley of the Mid-Atlantic Ridge, MARK Area, *Earth Planet. Sci. Lett.*, 181, 61-70, 2000.

1990-1999

- Karson, J.A., Geological investigation of a lineated massif at the Kane transform: Implications for oceanic core complexes, *Phil. Trans. Roy. Soc. Lond.*, 357, 713-740, 1999.
- Karson, J.A., S.D. Hurst, E.M. Klein, and Hess Deep '99 Scientific Party, Large-scale ARGO II digital images of upper crustal structures at Hess Deep, *RIDGE Events Newsletter*, 10, 29-32, 1999.

- Kocak, D.M., F.M. Caimi, V.L. Asper, and J.A. Karson, 3-D Laser Line Scanners for Undersea Scientific and Industrial Applications, *Oceans'99*, 1105-1114, 1999.
- Curewitz, D. and J.A. Karson, Geological consequences of dike intrusion at mid-ocean ridge spreading centers, in *Faulting and Magmatism at Mid-Ocean Ridges*, edited by W.R. Buck, P.T. Delaney, J.A. Karson and Y. Lagabriele, *American Geophysical Union, Geophysical Monograph 106*, 117-136, 1998.
- Gao, D., S.D. Hurst, J.A. Karson, J.R. Delaney, and F.N. Spiess, Computer-aided interpretation of side-looking sonar images from the eastern intersection of the Mid-Atlantic Ridge with the Kane transform, *J. Geophys. Res.*, *103*, 20,997-21,014, 1998.
- Karson, J.A., Fault rocks from the Mid-Atlantic Ridge, 24°N, in *Fault-Related Rocks: A Photographic Atlas*, edited by A.W. Snoke, J. Tullis and V.R. Todd, Princeton University Press, 194-197, 1998.
- Karson, J.A., Internal structure of oceanic lithosphere: A perspective from tectonic windows, in *Faulting and Magmatism at Mid-Ocean Ridges*, edited by W.R. Buck, P.T. Delaney, J.A. Karson and Y. Lagabriele, *American Geophysical Union Geophysical Monograph 106*, 177-218, 1998.
- Lagabriele, Y., D. Bideau, M. Cannat, J.A. Karson, and C. Mével, Ultramafic plutonic rocks exposed along the Mid-Atlantic Ridge (10°N-30°N): Symmetrical-asymmetrical distribution and implications for seafloor spreading processes, in *Faulting and Magmatism at Mid-Ocean Ridges*, edited by W.R. Buck, P.T. Delaney, J.A. Karson, and Y. Lagabriele, *American Geophysical Union, Geophysical Monograph 106*, 153-176, 1998.
- Lawrence, R.M., J.A. Karson, and S.D. Hurst, Dike orientations and fault-block rotations in slow-spread oceanic crust at the SMARK Area, Mid-Atlantic Ridge at 22°40'N, *J. Geophys. Res.*, *103*, 663-676, 1998.
- Karson, J.A. and R.M. Lawrence, Tectonic setting of serpentinite exposures on the western median valley wall of the MARK area in the vicinity of Site 920, in *Proc. Ocean Drill. Program Scientific Results*, edited by J.A. Karson, M. Cannat, D.J. Miller and D. Elthon, *Ocean Drilling Program, College Station, TX*, 153, 5-22, 1997.
- Karson, J.A. and R.M. Lawrence, R.M., Tectonic window into gabbroic rocks of the middle oceanic crust in the MARK area near sites 921-924, in *Proc. Ocean Drill. Program Scientific Results*, edited by J.A. Karson, M. Cannat, D.J. Miller and D. Elthon, *Ocean Drilling Program, College Station, TX*, 153, 61-76, 1997.
- Curewitz, D. and J.A. Karson, Structural control of hydrothermal discharge, *J. Volcanology Geothermal Res.*, *79*, 149-168, 1997.
- Cannat, M., J.A. Karson, D.J. Miller, and ODP Leg 153 Shipboard Scientific Party, Probing the plutonic foundation of the Mid-Atlantic Ridge, *Eos*, *76*, 129-133, 1995.
- Auzende, J.M., M. Cannat, P. Gente, J.-P. Henriot, T. Juteau, J.A. Karson, Y. Lagabriele, C. Mével, and M. Tivey, Observation of sections of oceanic crust and mantle cropping out

- on the southern wall of the Kane Fracture Zone (N. Atlantic), *Terra Nova*, 6, 143-148, 1994.
- Hurst, S.D., J.A. Karson, and K.L. Verosub, Paleomagnetic study of tilted diabase dikes in fast-spread oceanic crust exposed at Hess Deep, *Tectonics*, 13, 789-802, 1994.
- Auzende, J.M., M. Cannat, P. Gente, J.P. Henriët, T. Juteau, J.A. Karson, Y. Lagabrielle, and M.A. Tivey, A transect through 0-4 Ma oceanic crust: Nautilite dives along the Kane Transform, *RIDGE Events*, 4, 3-10, 1993.
- Auzende, J.M., M. Cannat, P. Gente, J.P. Henriët, T. Juteau, J.A. Karson, Y. Lagabrielle, C. Mével, and M. Tivey, Deep layers of mantle and oceanic crust exposed along the southern wall of the Kane Fracture Zone: Submersible observations, *Acad. Sci. C.R.*, 317, 1641-1648, 1993.
- Auzende, J.M., M. Tivey, M. Cannat, P. Gente, J.P. Henriët, T. Juteau, J.A. Karson, and Y. Lagabrielle, First in situ exploration of the MAR South of the Atlantis Fracture Zone, *Acad. Sci. C.R.*, 316, 1415-1422, 1993.
- Karson, J.A., Tectonics of slow-spreading mid-ocean ridges, *Oceanus*, 34 (4), 51-59, Winter 1991/1992.
- Karson, J.A., J.R. Delaney, and F.N. Spiess, Vertically layered mafic-ultramafic complex observed on the seafloor, *RIDGE Events*, 3, 3-4, 1992.
- Karson, J.A., S.D. Hurst, and P. Lonsdale, Tectonic rotations of dikes in fast-spread oceanic crust exposed near Hess Deep, *Geology*, 20, 685-688, 1992.
- Karson, J.A. and A.T. Winters, Along-axis variations in tectonic extension and accommodation zones in the MARK Area, Mid-Atlantic Ridge 23°N Latitude, in *Ophiolites and Their Modern Oceanic Analogues*, edited by L.M. Parson, B.J. Murton and P. Browning, 107-116, *Geol. Soc. Lond. Spec. Publ. 60*, Blackwell Scientific Publishers, 1992.
- Mutter, J.C. and J.A. Karson, Structural processes at slow-spreading ridges, *Science*, 257, 627-634, 1992.
- Gente, P., C. Mével, J.-M. Auzende, J.A. Karson, and Y. Fouquet, An example of a recent accretion on the Mid-Atlantic Ridge: The Snake Pit Neovolcanic Ridge (MARK Area, 23°22'N), *Tectonophys.*, 190, 1-29, 1991.
- Karson, J.A., Accommodation zones and transfer faults: Integral components of Mid-Atlantic Ridge extensional systems, in *Ophiolites Genesis and Evolution of Oceanic Lithosphere*, edited by Tj. Peters, A. Nicolas and R.G. Coleman, pp. 21-37, Kluwer, Dordrecht, 1991.
- Karson, J.A., Geologic processes along slow-spreading ridge axes and their potential as seismic sources, in *Characterization of Mid-Ocean Ridge Earthquake Activity Using Acoustic Data from U.S. Navy Permanent Hydrophone Arrays*, convened by G.M. Purdy, Ridge Inter-Disciplinary Global Experiments, Woods Hole Oceanographic Institution, pp. 26-29, 1991.
- Mével, C., M. Cannat, P. Gente, E. Marion, J.-M. Auzende, and J.A. Karson, Emplacement of deep crustal and mantle rocks on the west median valley wall of the MARK Area (MAR 23°N), *Tectonophys.*, 190, 31-53, 1991.

- Karson, J.A., Seafloor spreading on the Mid-Atlantic Ridge: Implications for the structure of ophiolites and oceanic lithosphere produced in slow-spreading environments, in *Oceanic Crustal Analogues, Proceedings of the Symposium "TROODOS 1987"*, edited by J. Malpas, E.M. Moores, A. Panayiotou, and C. Xenophontos, 547-555, Geological Survey Department, Nicosia, Cyprus, 1990.
- Karson, J.A., Tectonic disruption of volcanic units of the oceanic crust, in *Proceedings of a Workshop on the Physical Properties of Volcanic Seafloor*, edited by G.M. Purdy and G.J. Fryer, 138-142, Woods Hole Oceanographic Institution, 1990.
- Karson, J.A. and P.A. Rona, Block-tilting, transfer faults, and structural control of magmatic and hydrothermal processes in the TAG Area, Mid-Atlantic Ridge 26° N, *Geol. Soc. Amer.*, 102, 1635-1645 (Cover figure for this issue), 1990.

1980-1989

- Barany, I. and J.A. Karson, Basaltic breccias of the Clipperton fracture zone: Sedimentation and tectonics in a fast-slipping oceanic transform, *Geol. Soc. Am.*, 101, 204-220, 1989. (Cover figure for this issue.)
- Mével, C., J-M. Auzende, M. Cannat, J-P. Donval, J. Dubois, Y. Fouquet, P. Gente, D. Grimaud, J. Karson, M. Segonzac, and M. Stievenard, La ride du Snake Pit (dorsale medio-Atlantique, 23° 22'N): resultats preliminaires de la campagne HYDROSLAKE, *Acad. Sci. C.R.*, t. 308, Ser. II, 545-552, 1989.
- Campbell, A.C., M.R. Palmer, G.P. Klinkhammer, T.S. Bowers, J.M. Edmond, J.R. Lawrence, J.F. Casey, G. Thompson, S.E. Humphris, P.A. Rona, and J.A. Karson, Chemistry of hot springs on the Mid-Atlantic Ridge, *Nature*, 335, 514-519, 1988.
- Brown, J.R. and J.A. Karson, Variations in axial processes on the Mid-Atlantic Ridge: The Median Valley of the MARK Area, *Mar. Geophys. Res.*, 10, 109-138, 1988.
- Karson, J.A. and J.R. Brown, Geologic setting of the snake pit hydrothermal site: An active vent field on the Mid-Atlantic Ridge, *Mar. Geophys. Res.*, 10, 91-107, 1988.
- Karson, J.A. and D.L. Elthon, Evidence for variations in magma production along spreading centers: a critical appraisal, *Geology*, 15, 127-131, 1987.
- Karson, J.A., G. Thompson, S.E. Humphris, J.M. Edmond, W.B. Bryan, J.R. Brown, A.T. Winters, R.A. Pockalny, J.F. Casey, A.C. Campbell, G. Klinkhammer, M.R. Palmer, R.J. Kinzler, and M.M. Sulanowska, Along-axis variations in seafloor spreading in the MARK Area, *Nature*, 328, 681-685, 1987.
- Karson, J.A., Along-axis variations in the MARK Area, *Eos*, 67, 663, 1986.
- Karson, J.A., Lithosphere age, depth, and structural complications resulting from migrating transform faults, *J. Geol. Soc. Lond.*, 143, 785-788, 1986.
- Karson, J.A. and P.J. Fox, Geological and geophysical investigation of the Mid-Cayman Spreading Center: Seismic velocity measurements and implications for the constitution of Layer 3, *Geophys. J. R. Astr. Soc.*, 85, 389-412, 1986.

Pearce, G.W. and J.A. Karson, On pressure demagnetization, *Geophys. Res. Lett.*, 8, 725-728, 1981.

Schouten, H., J.A. Karson, and H.J.B. Dick, Geometry of transform zones, *Nature*, 288, 470-473, 1980.

Lava Project

2012-present

Karson, J. A. and R.W. Hazlett, Constraining processes in natural and experimental basaltic lava flows, in Varga, R.J. ed., *Proceedings of the Twenty-Ninth Annual Keck Research Symposium in Geology*, 29, 5 pp., 2016.

Karson, J. A. and R.W. Hazlett, Calibrating natural basaltic lava flows with large-scale experiments, in Varga, R.J. ed., *Proceedings of the Twenty-Eighth Annual Keck Research Symposium in Geology*, 28, 6 pp., 2015.

Edwards, B.R., J.A. Karson, R.J. Wysocki, E. Lev, I. Bindemen and U. Kueppers, Insights on lava-ice/snow interactions from large-scale basaltic melt experiments, *Geology*, doi:10.1130/G34305.1, 2013.

Karson, J.A. and R.J. Wysocki, Do-it-Yourself Lava Flows: Science, art, and education in the Syracuse University Lava Project, *EARTH*, 57, 9, 38-45, 2012

Lev, E., M. Spiegelman, R.J. Wysocki, and J.A. Karson, Investigating lava flow rheology using video analysis and numerical flow models, *J. Volcanology Geothermal Res.*, 247-248, 62-73, <http://dx.doi.org/10.1016/j.jvolgeores.2012.08.002>, 2012.

Iceland

2006-present

Karson, J.A., Propagating rifts, migrating transform faults, and microplate tectonics in Iceland, *Nature*, in preparation, 2016.

Karson, J.A., L.A. Chutas, A.F. Nanfito, J.A. Proett, K.T. Runnals and K. Sæmundsson, Widespread rift-parallel strike-slip faulting in Iceland, *G-cubed*, in preparation, 2015.

Horst, A.J., Varga, R.J., Gee, J.S., and Karson, J.A., A broken bookshelf mechanism to accommodate large rotations of crustal blocks in the Tjörnes Fracture Zone of northern Iceland, *Tectonics*, in preparation, 2016.

- Siler, D.L. and J.A. Karson, Segment-scale crustal accretion processes in Iceland, *Tectonics*, in review, 2015.
- Karson, J. A. (2016), Crustal accretion of thick, mafic crust in Iceland: Implications for volcanic rifted margins, *Can. J. Earth Sci.*, 53, 1-11, doi:doi.org/10.1139/cjes-2016-0039.
- Siler, D.L. and J.A. Karson, Focused subsidence during Tertiary crustal construction in the magmatic rift zones of Iceland: Structure and stratigraphy of the Vatnsdalur Flexural Basin, *Geol. Soc. Amer. Bull.*, 124, doi:10.1130/B30562.1, 2012.
- Siler, D.L. and J.A. Karson, Three-dimensional structure of inclined sheet swarms: Implications for crustal thickening and subsidence in the volcanic rift zones of Iceland, *J. Volcanology Geothermal Res.*, 188, 333–346, 2009.
- Sæmundsson, K. and J. A. Karson, Stratigraphy and tectonics of the Húsavík-Western Tjörnes area, Unpublished Report, prepared for Alcoa and HRV Engineering, ÍSOR-2006/-32, 35 pp. and 1:20,000 Geological Map, 2006.

Rifts & Rifted Margins

2000-present

- Pratson, L., D. Cacchione, N. Driscoll, R. Burger, C. Fulthorpe, J. Fildalez, J. Karson, B. Mullenbach, D. O'Grady, D. Orange, C. Paola, G. Parker, M. Steckler, J. Swenson, and P. Wiberg, Seascape Evolution on Continental Shelves and Slopes, in *Continental-Margin Sedimentation: From Sediment Transport to Sequence Stratigraphy*, edited by C.A. Nittrouer, J.A. Austin Jr., M.E. Field, J.H. Kravitz, J.P.M. Syvitski, and P.L. Wiberg, International Association of Sedimentologists, Special Publication 37, Blackwell Publishing Ltd, Oxford, 2006.
- Furman, T., J. G. Bryce, J.A. Karson, and A. Iotti, East African Rift System (EARS) plume structure: Insights from Quaternary mafic lavas of Turkana, Kenya, *Journal of Petrology* 45, 1069-1088, 2004.

1990-1999

- Curewitz, D. and J.A. Karson, Ultracataclasis, sintering, and frictional melting in Tertiary pseudotachylytes from East Greenland, *J. Struct. Geol.*, 21, 1693-1713, 1999.
- Karson, J.A. and C.K. Brooks, Structural and magmatic segmentation of the Tertiary East Greenland volcanic rifted margin, in *Continental Tectonics*, edited by C. MacNiocail and P. Ryan, Geological Society of London, Special Publication 164, 313-338, 1999.
- Karson, J.A., C.K. Brooks, M. Storey, and M. Pringle, Tertiary faulting and pseudotachylytes in the east Greenland volcanic rifted margin: Seismogenic faulting during magmatic construction, *Geology*, 26, 39-42, 1998.

Karson, J.A. and P.C. Curtis, Axial Quaternary volcanic centers in the Turkana Rift, N. Kenya, *J. Afr. Earth Sci.*, 18, 15-35, 1994.

Wheeler, W.H. and J.A. Karson, Extension and subsidence along a "weak" continental transform: An example from the Rukwa Rift, East Africa, *Geology*, 22, 625-628, 1994.

1980-1989

Karson, J.A. and P.C. Curtis, Quaternary volcanic centers in Lake Turkana, *Geol. Sur. Kenya, Open File Report No. 5246*, 55 pp. plus 3 large format maps, 1990.

Bloomer, S.H., P.C. Curtis, and J.A. Karson, Geochemical variation of Quaternary basaltic volcanics in the Turkana Rift, Northern Kenya, in *Rifting in Africa: Karoo to Recent*, edited by B.R. Rosendahl, J.J.W. Rogers, and N.M. Rach, *J. African Earth Sci., Spec. Vol.*, 8, 511-532, 1989.

Dunkelman, T.J., B.R. Rosendahl, and J.A. Karson, The structural and stratigraphic evolution of Lake Turkana, Kenya, as deduced from multichannel reflection data, in *Rifting in Africa: Karoo to Recent*, edited by B.R. Rosendahl, J.J.W. Rogers, and N.M. Rach, *J. African Earth Sci., Spec. Vol.*, 8, 489-510, 1989.

Karson, J.A. and P.C. Curtis, Tectonic and magmatic processes in the eastern branch of the East African rift and implications for magmatically active continental rifts, in *Rifting in Africa: Karoo to Recent*, edited by B.R. Rosendahl, J.J.W. Rogers, and N.M. Rach, *J. African Earth Sci., Spec. Vol.*, 8, 431-453, 1989.

Karson, J.A. and C.M. Zehnder, Igneous processes and the evolution of rifted continental margins, in *Margins: A Research Initiative for Interdisciplinary Studies of Processes Attending Lithospheric Extension and Convergence*, Proceedings of a Workshop Sponsored by the National Research Council, 230-245, National Academy Press, Washington, D.C., 1989.

Wheeler, W.H. and J.A. Karson, Structure and kinematics of the Livingstone Mountains border fault zone, Nyasa (Malawi) Rift, southwestern Tanzania, in *Rifting in Africa: Karoo to Recent*, edited by B.R. Rosendahl, J.J.W. Rogers, and N.M. Rach, *J. African Earth Sci., Spec. Vol.*, 8, 393-413, 1989.

Dunkelman, T.J., J.A. Karson, and B.R. Rosendahl, Structural style of the Turkana Rift, Kenya, *Geology*, 16, 258-261, 1988.

Ophiolites & Related Terranes

2000-present

Rivizzigno, P.A. and J.A. Karson, Mid-ocean ridge fault zones preserved on Macquarie Island: Faulting, hydrothermal processes and magmatism in an oblique-spreading environment, *Geology* 32, 125-128, 2004.

Alt, J.C., G. Davidson, D.A.H. Teagle and J.A. Karson, The isotopic composition of gypsum in the Macquarie Island Ophiolite: Implications for sulfur cycle and the subsurface biosphere in oceanic crust, *Geology*, 31, 549-552, 2003.

Hefferan, K.P., H. Admou, Hilal, R., J.A. Karson, S. Samson, A. Saquaque, and J.M. Kornprobst, Proterozoic blueschist-bearing mélangé in the Anti-Atlas Mountains, Morocco, *Precambrian Research*, 118, 179-194, 2002.

Hefferan, K.P., H. Admou, J.A. Karson and A. Saquaque, Anti-Atlas (Morocco) role in Neoproterozoic Western Gondwana reconstruction, *Precambrian Res.*, 103, 89-96, 2000.

1990-1999

Hefferan, K.P., J.A. Karson, and A. Saquaque, Proterozoic collisional basins in a Pan-African Suture Zone, Anti-Atlas Mountains, Morocco, *Precambrian Res.*, 54, 295-319, 1992.

Saquaque, A., M. Benharref, H. Abia, Z. Mrini, I. Reuber, and J.A. Karson, Evidence for a Pan African volcanic arc and wrench fault tectonics in the Jbel Saghro, Anti-Atlas, Morocco, *Geologische Rundschau, Band 81, Heft 1*, 1-13, 1992.

Dilek, Y., E.M. Moores, M. Delaloye, and J.A. Karson, Amagmatic extension and tectonic denudation in the Kizildag Ophiolite, Southern Turkey: Implications for the evolution of Neotethyan Oceanic Crust, in *Ophiolite Genesis and Evolution of Oceanic Lithosphere*, edited by Tj. Peters, A. Nicolas and R.G. Coleman, pp. 485-500, Kluwer, Dordrecht, 1991.

Hefferan, K.P., J.A. Karson, A. Saquaque, and I. Reuber, Reply to comment on Precambrian accretionary tectonics in the Bou Azzer-El Graara Region, Anti-Atlas, Morocco by W.R. Church, *Geology*, 19, 286-287, 1991.

1980-1989

Saquaque, A., H. Admou, J.A. Karson, I. Reuber, and K. Hefferan, Precambrian accretionary tectonics in the Bou Azzer-El Graara Region, Anti-Atlas, Morocco, *Geology*, 17, 1107-1110, 1989.

Karson, J.A., Factors controlling the orientation of dykes in ophiolites and oceanic crust, in *Mafic Dyke Swarms*, edited by H.C. Halls and W.F. Fahrig, *Geol. Assoc. Can. Spec. Pap.* 33, 229-241, 1987.

Collins, J.A., T.M. Brocher, and J.A. Karson, Two-dimensional seismic reflection modeling of the oceanic crust/mantle transition in the Bay of Islands Ophiolite Complex, *J. Geophys. Res.*, 91, 12520-12538, 1986.

Brocher, T.M., J.A. Karson, and J.A. Collins, Seismic stratigraphy of the oceanic Moho based on ophiolite models, *Geology*, 13, 62-65, 1985.

Casey, J.F., D.L. Elthon, F.X. Siroky, J.A. Karson, and J. Sullivan, Geochemical and geological evidence bearing of the origin of the Bay of Islands and Coastal Complex Ophiolites of Western Newfoundland, *Tectonophys.*, 116, 1-40, 1985.

- Karson, J.A., Variations in structure and petrology of the Coastal Complex, Newfoundland: Anatomy of an oceanic fracture zone, in *Ophiolites and Oceanic Lithosphere*, edited by I.G. Gass, S. J. Lippard, and A.W. Shelton, *Geol. Soc. Lond., Spec. Publ. 13*, 131-144, Blackwell Scientific Publications, 1984.
- Karson, J.A., J.A. Collins, and J.F. Casey, Geologic and seismic velocity structure of the crust/mantle transition in the Bay of Islands Ophiolite Complex, *J. Geophys. Res.*, *89*, 6129-6138, 1984.
- Karson, J.A., D.L. Elthon, J.F. Casey, and M. Titus, Deformed and metamorphosed rock assemblages recognized in the Bay of Island Ophiolite Complex, *Ophioliti*, *9*, 463-486, 1984.
- Casey, J.F., J.A. Karson, D.L. Elthon, E. Rosencrantz, and M. Titus, Reconstruction of the geometry of accretion during formation of the Bay of Islands Ophiolite Complex, *Tectonics*, *2*, 509-528, 1983.
- Casey, J.F. and J.A. Karson, Reply to C.H. Donaldson's Comment on "Magma Chamber Profiles from the Bay of Islands Ophiolite Complex", *Nature*, *295*, 717, 1982.
- Karson, J.A., Reconstructed seismic velocity structure of the Lewis Hills Massif and implications for oceanic fracture zones, *J. Geophys. Res.*, *87*, 961-978, 1982.
- Casey, J.F., J.F. Dewey, P.J. Fox, J.A. Karson, and E. Rosencrantz, Heterogeneous nature of oceanic crust and upper mantle: A perspective from the Bay of Islands Ophiolite Complex, in *The Oceanic Lithosphere*, edited by C. Emiliani, *The Sea*, VII, pp. 305-338, Wiley, New York, 1981.
- Casey, J.F. and J.A. Karson, Magma chamber profiles from the Bay of Islands ophiolite complex, *Nature*, *292*, 295-301, 1981.

Publications Prior to 1980

- Casey, J.F., J.A. Karson, S. O'Connell, and E. Rosencrantz, Comment on "The Seismic Velocity Structure of a Traverse Through the Bay of Islands Ophiolite Complex, Newfoundland, an Exposure of Oceanic Crust and Upper Mantle" by M.H. Salisbury and N.I. Christensen, *J. Geophys. Res.*, *84*, 6299-6300, 1979.
- Karson, J.A., Geology of the Lewis Hills Massif, western Newfoundland, *Geol. Sur. Can., Open File Map and Report No. 628*, 1979.
- Karson, J.A. and J.F. Dewey, Coastal Complex, western Newfoundland: An Early Ordovician oceanic fracture zone, *Geol. Soc. Am. Bull.*, *89*, 1037-1049, 1978.

Presentations at National & International Scientific Meetings

(Speaker underlined)

2016

- Farrell, J.A., J.A. Karson and J.A. Proett, Strike-slip faulting within the Hreppar Microplate, southern Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T33C-3053*, 2016.
- Karson, J.A., Continuous spectrum of crustal structures and spreading processes from volcanic rifted margins to mid-ocean ridges, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T51C-2947*, 2016.
- Karson, J.A., Sheeted dike complexes in contemporary oceanic crust: Implications for spreading processes and the interpretation of ophiolites, *Proceedings of the 7th International Dyke Conference*, Beijing, August 2016.
- Karson, J.A., Consequences of rift propagation and transform fault migration in northern Iceland, *Proceedings of the International Workshop on Earthquakes in North Iceland*, June 2016.
- Karson, J. A. and R.W. Hazlett, Constraining processes in natural and experimental basaltic lava flows, in Varga, R.J. ed., *Proceedings of the Twenty-Ninth Annual Keck Research Symposium in Geology*, 2016.
- Davis, N.C., R. Wobus, R.W. Hazlett, and J.A. Karson, Spacing of rootless cones in Iceland and experimental lava flows, *Geological Society of America Cordilleran Section Meeting (Moscow, ID), Abstracts with Programs, 48*, 2016.

2015

- Brandsdóttir, B., R.S. Detrick, N. Driscoll and J.A. Karson Episodic rifting events within the Tjörnes Fracture Zone, an onshore-offshore ridge-transform in N-Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T43H-07*, 2015.
- Junium, C.K., J.A. Karson and T. Kahan, Preservation of organic matter and its signatures on experimental lava flow interfaces: Implications for Mars, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, P33A-2127*, 2015.
- Karson, J.A., Upper crustal structure of oceanic lithosphere formed at intermediate to fast rates: A basis for comparison of MOR vs SSZ ophiolites, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T32C-01*, 2015.
- Karson, J.A., Consequences of rift propagation for spreading in thick oceanic crust in Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T43H-07*, 2015.
- Karson, J. A. and R.W. Hazlett, Calibrating natural basaltic lava flows with large-scale experiments, in Varga, R.J. ed., *Proceedings of the Twenty-Eighth Annual Keck Research Symposium in Geology*, 2015.
- Davis, N.C., R. Wobus, R.W. Hazlett, and J.A. Karson, Comparison of Icelandic rootless cones and experimental lava features, *Geological Society of America N.E. Section Meeting (Bretton Woods), Abstracts with Programs, 47, 3,110*, 2015.

Pelland, C.G., J.A. Karson and R.W. Hazlett, Experimental modeling and analysis of the effect of lava tube morphology on molten basaltic material transport, *Programs*, 47, 3, 110, 2015.

2014

Brown, T.C., M.J. Cheadle, B.E. John, L.A. Coogan, J.S. Gee, J.A. Karson, R. Meyer, G. Ceuleneer, and S. Swapp, Towards solving the conundrum of fast-spread ocean crust formation: Insights from textural analysis of gabbroic rocks from Pito Deep and Hess Deep, East Pacific Rise, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, V31B-4730, 2014.

Karson, J.A., Reconstructing ophiolites: Reassessing assumptions from the oceanic crust and related terranes, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, V53C-4878, 2014.

Karson, J.A., R.W. Hazlett, R.J. Wysocki, M.E. Bromfield, N.C. Browne, N.C. Davis, C.G. Pelland, W.L. Rowan and K.A. Warner, Keck Consortium Lava Project: Undergraduate research linking natural and experimental basaltic lava flows, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, ED51A-3414, 2014.

Proett, J.A. and J.A. Karson, Enigmatic rift-parallel, strike-slip faults around Eyjafjörður, northern Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, T43A-4672, 2014.

Runnals, K.T., J.A. Karson and A.J. Fiorentino II, Multiple generations of faulting: A kinematic analysis of the Lagerfljót Region, northeast Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, T43A-4673, 2014.

Worman, S., L. Pratson, T. Darrah, J.A. Karson and E.M. Klein, An analytical model for the free H₂ produced by serpentinization within the oceanic lithosphere, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, V53A-4827, 2014.

2013

Brandsdóttir, B., R.S. Detrick, G. Helgadóttir, B. Richter, L. Mayer and J.A. Karson, The Tjörnes Transform and Kolbeinsey Ridge, N-Iceland, tectonics and volcanism, Earthquakes in Northern Iceland Meeting, Husavík, Iceland, Abstract Volume, 2013.

Karson, J.A., R.J. Wysocki, B.R. Edwards and E. Lev, Natural-scale lava flow experiments on video: Variations with temperature, slope, and effusion rate, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, V51D-2702, 2013.

Karson, J.A., Rift to drift transition at volcanic rifts and rifted margins: Lessons from Iceland, *Geological Society of America, Annual Meeting (Denver), Abstracts with Programs*, 45, 7, 446, 2013.

Karson, J.A. and R.J. Wysocki, Undergraduate lava flow demonstrations: The next best thing to a volcano, *Geological Society of America, Annual Meeting (Denver), Abstracts with Programs*, 45, 7, 147, 2013.

Lev, E., M. W. Spiegelman, R.J. Wysocki, and J.A. Karson, Determining lava rheology

using video velocimetry and flow models (*Invited*), *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V51D-2703*, 2013.

2012

- Brown, T., M.J. Cheadle, B.E. John, L.A. Coogan, J.S. Gee, J.A. Karson, and S. Swapp, Gabbro microstructure and crystallography from Pito Deep: Evidence for gabbro glacier flow, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, OS13D-1765*, 2012.
- Dietterich, H., K. Cashman, R. Wysocki, and J. Karson, Complex channel networks in Hawai'i and the influence of underlying topography on flow emplacement, *American Geophysical Union, Chapman Conference on Hawaiian Volcanism*, August 2012.
- Edwards, B.R., J. A. Karson, R.J. Wysocki, E. Lev; I. N. Bindeman; U. Kueppers, Experimental insights on natural lava-ice/snow interactions and their implications for glaciovolcanic and submarine eruptions, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V21A-2763*, 2012.
- Karson, J.A., Oceanic Core Complexes: Expressions of Extreme Tectonic Extension in Oceanic Lithosphere, *Geological Society of America, Annual Meeting (Charlotte), Abstracts with Programs, 44, 7, 69*, 2012.
- Karson, J.A. and Wysocki, R.J. Deformation structures in natural-scale experimental lava flows, *Structural Geology & Tectonics Forum*, Williamstown, MA, June 2012.
- Karson, J.A. and R.J. Wysocki, Bringing the volcano to central NY: Natural-scale basaltic lava flow demonstrations for geoscience students, *Geological Society of America, Annual Meeting (Charlotte), Abstracts with Programs, 44, 7, 573*, 2012.
- Lev, E., M. Spiegelman, R. Wysocki, and J. Karson, Investigating lava properties and dynamics using experimental lava flows, computer vision, and numerical modeling, *American Geophysical Union, Chapman Conference on Hawaiian Volcanism*, August 2012.
- Lev, E., M. Spiegelman R. Wysocki, J. Karson, Investigating lava properties using experiments, video analysis, infrared thermometry and numerical flow models, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V11B-2763*, 2012.
- Karson, J.A., R.J. Wysocki, M.T. Kissane, C.M. Smith and S.K. Spencer, Experiments on natural-scale basaltic lava flows: Scope and first results of the Syracuse University Lava Project, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V14A-06*, 2012.
- Wysocki, R.J. and J.A. Karson, "The Lava of Syracuse" A real time lava pour, *NYS STEM Education Collaborative Summer Institute*, July 10, 2012.

2011

- Croff Bell, K.L., R.D. Ballard, D.F. Coleman, C.N. Roman, M.L. Brennan, T. Turanli, S.N. Carey, P. Nomikou, M. Marani, M. Rosi, J. Austin, M. Canals, J. Karson, L. Mayer, Y. Makovsky, New Frontiers in Ocean Exploration: The 2011 E/V NAUTILUS Field Season, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, OS21A-1570*, 2011.
- Edwards, B.R., J.A. Karson, R. Wysocki, and T. Gregg, Direct Observations of Lava-Ice Interactions: The Syracuse Lava Project, IUGG General Assembly XXV (Melbourne), July 2011.
- Horst, A.J., R.J. Varga, J.S. Gee, J.A. Karson, Paleomagnetic Analysis of Block Rotations in the Wake of the Migrating Tjörnes Transform Zone in Northern Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T23D-2430*, 2011.
- Karson, J.A., A. J. Horst and A.F. Nanfity, A New Look at Spreading in Iceland: Propagating Rifts, Migrating Transform Faults, and Microplate Tectonics, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T23D-2429*, 2011.
- Karson, J.A., R. Wysocki, and M. Kissane, Bringing the Volcano to the Students: The Syracuse University LAVA Project, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, ED31A-0720*, 2011.
- Karson, J.A., D.L. Siler, D.L., A.J. Horst, A.F. Nanfity and R.J. Varga, Subaerial seafloor spreading in Iceland: Manifestations of ridge-hotspot interactions, *Chapman Conference on the Galápagos as a Laboratory for the Earth Sciences*, Puerto Ayora, Galápagos, Ecuador, July 2011.
- Lev, E., J.A. Karson, R. Wysocki, M. Spiegelman, and C. Zappa, Investigating Lava Rheology Using Video Analysis and Flow Models, IUGG General Assembly XXV, Melbourne, July 2011.
- Lev, E., J. Karson, M. Kissane, R. Wysocki, Investigating Lava Rheology Using Lab-Based Lava Flows, Computer Vision, and Finite-Elements Modeling, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V23F-2629*, 2011.
- Pollock, M.A., J.A., Sloan, D.L. Siler, J.A. Karson, Emplacement of a thick extrusive body: A CSD Solution to a Map-Generated Question, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V13C-2615*, 2011.
- Tarlow, S., E. Lev, C. J. Zappa; J.A. Karson and R. Wysocki, Investigating cooling rates of a controlled lava flow using infrared imaging and three heat diffusion models, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, V11C-2523*, 2011.

2010

- Curewitz, D. and J.A. Karson, Investigation of Icelandic rift zones reveals systematic changes in hydrothermal outflow in concert with seismic and magmatic events:

Implications for investigation of Mid-Ocean Ridge hydrothermal systems, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, OS21C-1526*, 2010.

Denny, A.R., D.S. Kelley, G.L. Früh-Green, K.A. Ludwig and J.A. Karson, Geologic Evolution and Structural Control of the Lost City Hydrothermal Field, *Chapman Conference on Oceanic Detachment Faults*, Cyprus, May 2010.

Karson, J.A., D.S. Kelley and G.L. Früh-Green, Detachment Shear Zone Exposed on the S. Wall of the Atlantis Massif Core Complex, Mid-Atlantic Ridge 30°N, *Chapman Conference on Oceanic Detachment Faults*, Cyprus, May 2010.

Karson, J.A., R.J. Varga, D.L. Siler and A.J. Horst, Subaerial Seafloor Spreading in Iceland: Segment-Scale Processes and Analogs for Fast-Spreading Mid-Ocean Ridge Spreading Centers, *European Geophysical Union Meeting*, Vienna, May 2010.

Karson, J.A., Architecture of the oceanic crust and segment-scale spreading processes, *Nordic Volcanological Institute, Summer School on Magmatic Plumbing Systems and Intrusions*, August 10-20, 2010.

Hayman, N.W. and J.A. Karson, Ocean crustal fault rocks and the chemo-mechanical record of hydrothermal fluid flow, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, OS14A-06*, 2010.

Siler, D.L., J.A. Karson and R.J. Varga, Subsidence and basaltic caldera formation during crustal construction in Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, T31B-2160*, 2010.

2009

Curewitz, D. and J. A. Karson, Tracking the evolution of shallow crustal permeability using repeated surveys of hydrothermally active rift zones: Insights into the R2K focus sites via analysis of Iceland rift zones, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, 90 (52), OS21B-07*, 2009.

Horst, A.J., R.J. Varga, J.A. Karson and J.S. Gee, AMS Constraints on Sill Intrusion in Magma-Rich Spreading Environments, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, 90 (52) GP43A-0838*, 2009.

Karson, J.A., D.L. Siler, A.J. Horst, R.G. Varga and D. Curewitz, Toward a Comprehensive View of Seafloor Spreading: Integrating R2K Surface Data with Subsurface Geological Perspectives, *Ridge 2000 Workshop, St. Louis, MO, October 2009*.

Karson, J.A., D.L. Siler, A.J. Horst, R.G. Varga and D. Curewitz, Toward a Comprehensive View of Seafloor Spreading: What's Happening Under the R2K Study Areas? *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, 90 (52), OS21B-01*, 2009.

Nanfito, A.F. and J.A. Karson, Complex Rift-Parallel, Strike-Slip Faulting in Iceland: Kinematic Analysis of the Gljúfurá Fault Zone, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, 90 (52), T21D-1866, 2009.*

Siler, D.L., J.A. Karson, R.J. Varga, M.A. Pollock, A.J. Horst, and A.F. Nanfito, Structure and kinematics of segment scale crustal accretion processes in Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement, 90 (52), OS13A-1165, 2009.*

2008

Hayman, N.W. and J.A. Karson, The role of brittle deformation during fast to superfast seafloor spreading inferred from tectonic windows into East Pacific Rise Crust, *EUG European General Assembly, Geophysical Research Abstracts, 10, EUG2008-A-00000, 2008.*

Horst, A.J., R.J. Varga, J.S. Gee and J.A. Karson, Evidence of magmatic construction and flow within the sheeted dike complex of super-fast spread crust exposed at the Pito Deep Rift, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 89, V43I-04, 2008.*

Karson, J.A., Synthesis of the Geology of Lava and Sheeted Dike Units in Oceanic Crust: Implications for Accretionary Processes, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 89, V43I-05, 2008.*

Pollock, M.A., E.M. Klein, and J.A. Karson, Evolution of magmatic processes at superfast-spreading centers: Insights from spatial variations in upper crustal composition at the Pito Deep Rift, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 89, V51F-2109, 2008.*

Siler, D.L., J.A. Karson and A.J. Horst, Inclined sheet swarms and associated crustal thickening at Icelandic spreading segment centers, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 89, GP13A-08, 2008.*

Varga, R.J., A.J. Horst, J.A. Karson, D.L. Siler, and J.S. Gee, Rapid subsidence and formation of thick volcanic sections at magma-rich spreading centers: Paleomagnetic and AMS evidence from north-central Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 89, GP21D-0801, 2008.*

2007

Christeson, G.L., K.D. McIntosh, and J.A. Karson, Mapping of seismic layer 2A at intermediate-spreading crust exposed near Blanco Transform, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 88, T32B-07, 2007.*

Hayman, N.W. and J.A. Karson, Faults of subaxial origin exposed in the Hess and Pito Deep Rift walls: implications for hydrothermal systems and seismicity of axial regions, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 88, T23B-1415, 2007.*

Horst, A.J., J.A. Karson, R.J. Varga, and J.S. Gee, Models of deformation of uppermost oceanic lithosphere: comparison of crustal flexure in the Blönduós area, northern Iceland, and structure of East Pacific Rise crust at Hess Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 88, T23B-1411*, 2007.

Siler, D.L., J.A. Karson, R.J. Varga and A.J. Horst, Internal structure of the extinct Skagi-Hunafloi Rift Zone, and implications for magmatic construction, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 88, T23B-1424*, 2007.

2006

Chutas, L.A., J.A. Karson, K. Sæmundsson, Rift-parallel strike-slip faulting in the Karahnjúkar area of eastern Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 87, T43D-1687*, 2006.

Hayman, N.W. and J.A. Karson, Fault-controlled fluid-flow regimes along the East Pacific Rise (EPR): Geological views through tectonic windows, *Geological Society of America, Annual Meeting (Philadelphia), Abstracts with Programs 38, 7*, 2006.

Horst, A., R.J. Varga, J.S. Gee, J.A. Karson, Magnetic remanence and anisotropy of magnetic susceptibility of dikes from super-fast spread crust exposed at Pito Deep Rift, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 87, T51C-1546*, 2006.

Karson, J.A., Ophiolites on the Seafloor: Diverse Crustal Structures Reflecting Variations in Accretionary Processes (Invited), *Geol. Assn. Can./Min. Assn. Can, Annual Meeting, Montreal, Canada, May 2006*.

Karson, J.A., Diversity of oceanic crust and implications for accretion at mid-ocean ridges (Invited Keynote Lecture), *German Mineralogical Society (DMG) Meeting, Hannover, Germany, September 2006*.

Karson, J.A., Crustal accretion in Iceland and at mid-ocean ridge spreading centers, *I.A.V.C.E, G.P.L. Walker Symposium on Advances in Volcanology, Reykholt, Iceland, June 2006*.

Pollock, M.A., E.M. Klein, J.A. Karson, N W Hayman, Geochemistry of dikes and lavas in ocean crust: Implications for dike intrusion and eruption at fast to superfast spreading centers, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 87, T41B-1571*, 2006.

2005

Boschi, C., G.L. Früh-Green, J.A. Karson, and D.S. Kelley, Mass transfer and fluid flow during detachment faulting and development of an oceanic core complex, Atlantis Massif, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

- Früh-Green, G.L., C. Boschi, D.S. Kelley, A. Delacour, S.M. Bernasconi, and J.A. Karson, Insights into peridotite-hosted hydrothermal systems from petrological and geochemical studies of the Lost City Hydrothermal System, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Hayman, N.W., K.M. Gillis, J.A. Karson and Pito Deep 2005 Science Party, Faulting and focused fluid flow in superfast EPR crust near Pito Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Hayman, N. and J.A. Karson, Mid-ocean ridge axial faulting and fluid flow in the upper oceanic crust, *Geological Society of America, Annual Meeting (Salt Lake City), Abstracts with Programs 37*, 2005.
- Heft, K., K. Gillis, and Pito Deep 2005 Science Party, Fluid flow and hydrothermal alteration patterns in sheeted dikes at Pito Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Hey, R.N., J.S. Gee and Pito Deep 2005 Science Party, *Alvin* magnetometer investigations of Pito Deep, Easter Microplate, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Hurst, S.D., M. Kolak, M. Bowles and Pito Deep 2005 Science Party, Digital image mosaics of the oceanic crust exposed at the Pito Deep: Mesoscopic perspectives on structure and deformation, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Karson, J.A., Cross sections of the upper oceanic crust in tectonic windows: Implications for sub-axial processes at fast- to intermediate-spreading centers, *RIDGE 2000 Meeting*, Vancouver, BC, October 2005.
- Karson, J.A., Transtension at oceanic ridge-transform intersections, (Invited Keynote Presentation), *Tectonics of Restraining Bends and Releasing Bends in Continental and Oceanic Settings*, *Geological Society of London*, September, 2005.
- Karson, J.A., Internal structure of the upper oceanic crust generated at fast to intermediate rates: The view from tectonic windows in the Pacific, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2005.
- Kelley, D. and the 2003/2005 Science Teams, Serpentinization and life, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Klein, E.M., M.A. Pollock, J.A. Karson and Pito Deep 2005 Science Party, Geochemistry of dikes and lavas recovered from 'tectonic windows' into the upper ocean crust, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.
- Morgan, L.A., J.A. Karson, N.W. Hayman, R.J. Varga, S.D. Hurst and Pito Deep 2005 Science Party, Internal structure of basaltic lavas and sheeted dikes in 3 Ma

super-fast EPR crust exposed at Pito Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

Naar, D.F., R.N. Hey, J.S. Gee, R. Hékinian, J. Francheteau, J.A. Karson, E.M. Klein, K.M. Gillis, R.J. Varga and Pito Deep 2005 Science Party, DSL120 mosaics of superfast EPR crustal layers exposed by ultraslow seafloor spreading near Pito Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

Perk, N., L. Coogan and Pito Deep 2005 Science Party, Primitive cumulates in the upper-plutonics from the East Pacific Rise, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

Pollock, M.A., E.M. Klein, J.A. Karson and Pito Deep 2005 Science Party, Geochemical variability of dikes and lavas exposed in the Pito Deep, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

Varga, R.J. and J.A. Karson, Geologic and Paleomagnetic evidence for spreading-related magmatism, faulting and crustal flexure in the Skagi Area, northern Iceland, *Geological Society of America, Annual Meeting (Salt Lake City), Abstracts with Programs 37*, 2005.

Varga, R.J., J.A. Karson, J. Francheteau, J.S. Gee, K.M. Gillis, R. Hékinian, R.N. Hey, E.M. Klein, D.F. Naar and Pito Deep 2005 Science Party, *Alvin, Jason II, DSL-120* investigation of super-fast EPR crust exposed at the Pito Deep Rift, Easter Microplate, SE Pacific, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement 86*, 2005.

2004

Bowles, M., N. Hayman, J.A. Karson, and D.S. Kelley, Fault-hosted hydrothermal breccia at 22°40' N on the Mid-Atlantic Ridge, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2004.

Brandsdóttir, B., B. Richter, C. Riedel, T. Dahm, G. Helgadóttir, E. Kjartansson, R. Detrick, Á. Magnússon, Á. Ásgrímsson, B. Palsson, J. Karson, K. Sæmundsson, L. Mayer, B. Calder, N. Driscoll, Tectonic details of the Tjörnes Fracture Zone, an onshore-offshore ridge-transform in N-Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2004.

Davidson, G., S. Lewis, P. Rivizzigno, J. Karson, J. Alt, D. Teagle and T. Brown, Hydrothermal sulfate precipitation in an oceanic crust transfer fault: Macquarie Island, Southern Ocean, *Australian Geological Convention*, Hobart, Tasmania, 2004.

Godber, K., M. Roach, G. Davidson and J. Karson, Magnetic Delineation of a major seafloor fault and surrounding crustal elements in oceanic crust, Macquarie Island, *Australian Geological Convention*, Hobart, Tasmania, 2004.

- Karson, J.A., Synthesis of geological, geophysical, and hydrothermal processes in the MARK Area, 22°-24°N on the Mid-Atlantic Ridge, RIDGE 2000 Workshop on Potential Intensive Study Sites on the Mid-Atlantic Ridge, Providence, RI, February, 2004.
- Karson, J.A., Outward-dipping normal faults in extensional settings: Stretching, subsidence and creation of accommodation space, Symposium in Honor of C. Kent Brooks, Copenhagen, 2004.
- Karson, J.A., The Atlantis Massif: An Ultramafic Oceanic Core Complex, Plate Tectonics, Plumes, and Planetary Lithospheres: Conference to Celebrate the 75th Birthday of Kevin Burke, University of Houston, November 2004.
- Karson, J.A., B. Brandsdóttir, and K. Sæmundsson, Upper crustal deformation in onshore exposures of the Tjörnes Fracture Zone, northern Iceland, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement T43D-07*, 2004.
- Karson, J.A., R.J. Varga, and K. Sæmundsson, Regional and local flexure zones in Iceland: Upper crustal structures in magmatically robust spreading systems, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement V33G-01*, 2004.
- Pollock, M.A., E.M. Klein, J.A. Karson, and M.A. Tivey, Spatial and geochemical variations of lavas exposed along a crustal section in the Blanco Transform: Insights into accretion of the upper oceanic crust at the southern Juan de Fuca Ridge, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2004.
- Rivizzigno, P., J. Karson, G. Davidson and S. Lewis, Structural Expression of Oblique Seafloor Spreading in the Macquarie Island Ophiolite, *Australian Geological Convention*, Hobart, Tasmania, 2004.

2003

- Früh-Green, G.L., D.S. Kelley, J.A. Karson, S.M. Bernasconi, G. Proskurowski, K.A. Ludwig, Long-lived Serpentinization and Carbonate Precipitation at Lost City Hydrothermal Vent Field, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.
- Jakuba, M., D. Yoerger, A. Bradley, D. Kelley and J. Karson, High Resolution Multibeam Sonar Mapping of the Lost City Hydrothermal Site with the Autonomous Benthic Explorer, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.
- Karson, J.A., Unconformities in Slow-Spread Oceanic Crust: Implications for Spreading Processes and Dismembered Ophiolites, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.

Kelley, D.S., J.A. Karson, G. Früh-Green, and M.O. Shrenk, Ultramafic-Hosted Hydrothermal Systems: The Lost City Field as a Possible Guide for Early Life, *NASA Astrobiology Institute*, Tucson, AR, January 2003.

Kelley, D.S., J.A. Karson, G.L. Früh-Green, D. Yoerger, D.A. Butterfield, M. Schrenk and M. D. Lilley, The Lost City Hydrothermal Field: A novel ultramafic-hosted submarine system, *Geological Society of America, Annual Meeting (Seattle), Abstracts with Programs 35*, 2003

Kelley, D.S., G.L. Früh-Green, J.A. Karson, D. Yoerger and D. Butterfield, Discovering New Mantle-Hosted Submarine Ecosystems: The Lost City Hydrothermal Field, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.

Ludwig, K.A., D.S. Kelley, D.A. Butterfield, B.K. Nelson, J.A. Karson, Chemistry of a serpentinization-controlled hydrothermal system at the Lost City hydrothermal vent field *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.

Varga, R.G., J.A. Karson and J.S. Gee, Paleomagnetic constraints on deformation models for uppermost oceanic crust exposed at the Hess Deep Rift: Implications for axial processes at the East Pacific Rise, *Geological Society of America, Annual Meeting (Seattle), Abstracts with Programs 35*, 2003.

Williams, E.A., J.A. Karson, D.S. Kelley and G. Früh-Green, Cross-Section of the Atlantis Massif – Geologic Framework for the Lost City Hydrothermal Vent Field, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2003.

2002

Hefferan, K.P., J.A. Karson, H. Admou, R. Hilal, A. Saquaque, T. Juteau, M. Bohn, Proterozoic blueschist-bearing mélange in the Anti-Atlas Mountains, Morocco: Implications for Pan-African subduction, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2002.

Karson, J.A., Internal structure of uppermost oceanic crust created at intermediate- to fast-spreading ridges: Evidence of subaxial faulting, tilting, and subsidence from vertical crustal sections, *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2002.

Karson, J.A., E.A. Williams, D.S. Kelley, D.K. Blackman and the MARVEL Cruise Participants, Geologic setting of Serpentinite-Hosted hydrothermal vents at the Lost City, Atlantis Massif, Mid-Atlantic Ridge, 30°N, Inter-Ridge Theoretical Institute on Thermal Regime of Ocean Ridges and Dynamics of Hydrothermal Circulation, Pavia, Italy, September 2002.

Kelley, D.S., J.A. Baross, G.L. Früh-Green, M.O. Schrenk, and J.A. Karson, The ultramafic-hosted Lost City hydrothermal field: Clues in the search for life elsewhere in the solar system? *Eos Transactions of the American Geophysical Union, Fall Meeting Supplement*, 2002.

Williams, E.A., and J.A. Karson, Outcrop-scale structure of the Atlantis Massif with implications for its evolution, Inter-Ridge Theoretical Institute on Thermal Regime of Ocean Ridges and Dynamics of Hydrothermal Circulation, Pavia, Italy, September 2002.

2001

Blackman, D.K., J.A. Karson, D.S. Kelley, J. Cann, G. Früh-Green, J. Gee, B. John, J. Morgan, S. Nooner, T. Schroeder, B. Williams and MARVEL Cruise Participants, New seafloor maps and samples from the Mid-Atlantic Ridge 30°N oceanic core complex, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1099, 2001.

Cann, J., D.K. Blackman, J.P. Morgan and MARVEL Cruise Participants, Geological inferences about the Mid-Atlantic Ridge 30°N core complex from initial analysis of side-scan, bathymetry and basalt petrography, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1099, 2001.

Früh-Green, G.L., D.S. Kelley, J.A. Karson, D.K. Blackman, C. Boschi, B. John, T. Schroeder and MARVEL Cruise Participants, Hydrothermal Alteration, Serpentinization and Carbonate Precipitation at the Lost City Vent Field (30N, Mid-Atlantic Ridge), *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1101, 2001.

Karson, J.A., Sheeted dike complexes in oceanic crust: Implications for subaxial subsidence *beneath mid-ocean ridge spreading centers*, 4th International Dyke Conference, Kwa-Zulu, Natal, South Africa, June 2001.

Karson, J.A., Internal structure of oceanic crust formed at high magma budgets, *RIDGE Symposium on the Icelandic Plume and Crust*, Reykjavik, Iceland, September 2001.

Karson, J.A., Diverse styles of rifting and crustal accretion at mid-ocean ridge spreading centers and continental rift analogs, *Symposium on Rifting in the Continents and Oceans*, Copenhagen, Denmark, October 2001.

Karson, J.A., New views of seafloor spreading from the geology of ophiolites and oceanic crust: Continually collapsing calderas to core complexes, *Geological Society of America, Annual Meeting (Boston), Abstracts with Programs*, 33, A173, 2001.

Karson, J.A., D.S. Kelley, E.A. Williams, D.K. Blackman and MARVEL Cruise Participants, Geologic setting of the Lost City Vent Field, off-axis, serpentinite-hosted vents on the Mid-Atlantic Ridge at 30°N latitude, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1100, 2001.

Kelley, D.S., J.A. Karson, D.K. Blackman, G. Früh-Green, D.A. Butterfield, K.K. Roe, M.D. Lilley, E.A. Olson, M.O. Schrenk, P.J. Camino and MARVEL Cruise Participants, An overview of the Lost City Vent Field: An extensive off-axis, serpentinite-hosted hydrothermal field, 30°N, Mid-Atlantic Ridge, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1100, 2001.

Morgan, J.P., D.K. Blackman, J. Cann and MARVEL Cruise Participants, High-resolution side-scan sonar map of the Mid-Atlantic Ridge 30°N core complex, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1099, 2001.

Rivizzigno, P.A. and J.A. Karson, Structural interpretation of NW-trending, hydrothermally altered fault zones in oblique-, slow-spread oceanic crust of the Macquarie Island ophiolite complex, Southern Ocean, *RIDGE Symposium on the Icelandic Plume and Crust*, Reykjavik, Iceland, September 2001.

Schroeder, T., B.E. John, D.S. Kelley, and MARVEL Cruise Participants, Microstructural observations of an 'oceanic core complex': Atlantis Massif, 30N, Mid-Atlantic Ridge, *Eos Transactions of the American Geophysical Union*, 82, Fall Meeting Supplement, F1100, 2001.

2000

Blackman, D., J. Karson, D. Kelley, and Scientific Party, Structural signature of core complex formation on slow-spreading oceanic crust, *European Geophysical Union Meeting*, March, 2000.

Blackman, D., J. Karson, D. Kelley, and Scientific Party, New seafloor observations of an oceanic core complex: Mid-Atlantic Ridge (30°N) at Atlantis Transform, *European Geophysical Society Meeting*, March 2000.

1999

Brophy, J.G., E.M. Klein, M.A. Stewart, and Hess Deep Scientific Party, Textural (Normarski Interferometry) studies of plagioclase phenocryst zonation styles in MORB dikes and lavas from the north wall of the Hess Deep Rift, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F985, 1999.

Gillis, K., J. Karson, E. Klein, S. Hurst, and Hess Deep '99 Scientific Party, Hydrothermal alteration patterns in young EPR crust, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F985, 1999.

Hanna, H.D., E.M. Klein, C.C. Wilmore, M.A. Stewart, A.E. Boudreau, and Hess Deep Scientific Party, Compositional, textural, and spatial characteristics of high-level gabbros recovered by submersible from Hess Deep Rift, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F985, 1999.

Hefferan, K.P., M. Falkowski, S. Samson, J.A. Karson, and H. Admou, Multidisciplinary investigation of the Pan-African Anti-Atlas suture zone, Morocco, *Geological Society of America, Abstracts with Programs*, 31, 1999.

Hurst, S., J. Karson, E. Klein, and Hess Deep '99 Scientific Party, Side-scan processing and interpretation along the North Cliff Wall of Hess Deep Rift: Texture analysis and geologic ground-truth, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F985, 1999.

- Karson, J.A., E.M. Klein, S.D. Hurst and Hess Deep '99 Scientific Party, Internal structure of uppermost oceanic crust exposed on the north wall of the Hess Deep Rift, *RIDGE 2000 Meeting*, Newport, OR, September 1999.
- Karson, J., E. Klein, S. Hurst, and Hess Deep '99 Scientific Party, Internal structure of uppermost fast-spread oceanic crust of the East Pacific Rise exposed at the Hess Deep Rift: Results from Alvin, Argo II, and DSL-120 investigations, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F983-4, 1999.
- Kocak, D.M., F.M. Caimi, and J.A. Karson, A 3-D laser line scanner for outcrop-scale studies of seafloor features, *Oceans' 99 Meeting*, 1999.
- Kocak, D.M., F.M. Caimi, V.L. Asper, and J.A. Karson, 3-D laser line scanners for undersea scientific and industrial applications, *Undersea Explorations 1999 Meeting*, 1999.
- Lee, C., J. Karson, B. Varga, and Hess Deep '99 Scientific Party, A new look at fast-spread crust and the internal structure of the sheeted dike complex exposed at the Hess Deep Rift: A perspective from Argo II digital image mosaics, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F984, 1999.
- Meurer, W.P., M. Sturm, E. Klein, and J.A. Karson, Compositional variations in the SMARK Area, *RIDGE Field School: The Troodos Ophiolite and Mid-Ocean Ridge Processes*, July 1999.
- Meurer, W.P., M.A. Sturm, E.M. Klein, and J.A. Karson, Restricted compositional variability of MARK Area samples suggests a limited influence of crust on magmatic processes at slow spreading ridges, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F1086, 1999.
- Rivizzigno, P., J. Karson and Hess Deep '99 Scientific Party, Temporal variations in relative thickness of the extrusive and sheeted dike units in EPR crust exposed at the Hess Deep Rift: Implications for models of upper crustal construction, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F984, 1999.
- Stewart, M., E. Klein, J. Karson, J. Natland, K.N. Farley, and P. Lonsdale, Trace element variations in dikes along a 0.5 Ma flowline from the north wall of Hess Deep: Evidence for short time-scale variations in magma composition during crustal accretion, *RIDGE Field School: The Troodos Ophiolite and Mid-Ocean Ridge Processes*, July 1999.
- Stewart, M., E. Klein, J. Karson and Hess Deep '99 Scientific Party, Major and trace element variations in dikes along a 67,000 yr. flowline from the North Wall of Hess Deep: Evidence for incomplete along-axis mixing in the axial magma chamber, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F985-6, 1999.
- Sturm, M., S. Goldstein, E.M. Klein, J.A. Karson, M.T. Murrell, Age constraints on spatially controlled lavas from the axial valley of the Mid-Atlantic Ridge, MARK Area, *Eos Transactions of the American Geophysical Union*, 80, Fall Meeting Supplement, F1093, 1999.
- Sutton, A., S. Hurst, and Hess Deep '99 Scientific Party, Argo II digital image mosaics of uppermost oceanic crust exposed at the Hess Deep Rift: Structure and variation in the

extrusive section, *Eos Transactions of the American Geophysical Union, 80, Fall Meeting Supplement*, F984, 1999.

Varga, R., Karson, J., and Hess Deep '99 Scientific Party, Paleomagnetic investigation of tectonic tilting in upper oceanic crust, North Wall of the Hess Deep Rift, Equatorial Pacific, *Eos Transactions of the American Geophysical Union, 80, Fall Meeting Supplement*, F986, 1999.

Varga, R., J. Karson, and C. Lee, Styles of ridge-crest extensional faulting: Comparison of the Troodos Ophiolite with Argo II imagery and Alvin investigations of the Hess Deep North Wall, Equatorial Pacific, *Eos Transactions of the American Geophysical Union, 80, Fall Meeting Supplement*, F984, 1999.

1998

Curewitz, D. and J.A. Karson, Ultracataclasis, sintering, and frictional melting in pseudotachylyte from East Greenland, *Eos Transactions of the American Geophysical Union, 79, Fall Meeting Supplement*, F853, 1998.

Hefferan, K.P., J.A. Karson, and A. Saquaque, The Neoproterozoic Anti-Atlas suture zone (Morocco): Missing link in western Gondwanaland reconstruction, *Geological Society of America, Annual Meeting (Toronto), Abstracts with Programs*, 30, 1998.

Karson, J.A., Tectonic extension at slow-spreading mid-ocean ridges: Narrow rifts to core complexes, *Royal Society of London, Discussion Meeting on "Response of the Earth's Lithosphere to Extension"*, London, May 1998.

Karson, J.A., Geology of an oceanic core complex along the Kane Transform: Tectonic window into highly extended oceanic lithosphere, *Eos Transactions of the American Geophysical Union, 79, Spring Meeting Supplement*, S335, 1998.

Karson, J.A., Tectonic windows into the oceanic crust and mantle: Testing and refining the ophiolite hypothesis, *Geological Society of America, Penrose Conference on Ophiolites and Oceanic Crust: New Insights from Field Studies and Ocean Drilling*, Tamales Bay, CA, Sept. 1998.

Karson, J.A., Syntectonic magmatism: Essential component of oceanic core complexes? *Eos Transactions of the American Geophysical Union, 79, Fall Meeting Supplement*, F919, 1998.

1997

Karson, J.A., Tectonics of mid-ocean ridges, *RIDGE Iceland Field School*, Lake Myvatn, Iceland, August 1997.

Karson, J.A., Evolution of the east Greenland tertiary volcanic rifted margin: Strain partitioning across a continent-ocean transition, *John F. Dewey Conference on Continental Tectonics*, University of Oxford, September 1997.

Karson, J.A. and D.S. Kelley, Internal structure of the oceanic crust: Implications for hydrogeology and biology, *Workshop on the Subsurface Biosphere at Mid-Ocean Ridges*, Washington, DC, March 1997.

Lawrence, R.M., J.A. Karson, and S.D. Hurst, Dike orientations, fault-block rotations, and the construction of slow-spread oceanic crust at the SMARK Area, The Mid-Atlantic Ridge at 22°40'N, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 78, F642, 1997.

Stewart, M., E. Klein, J. Natland, J. Karson, K.N. Farley, and P. Lonsdale, Trace element variations in dikes from the north wall of Hess Deep: Evidence for short time-scale variations in magma composition, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 78, F676, 1997.

1996

Cannat, M., C. Mével, J. Karson, K. Gillis, and the Legs 147 and 153 Scientific Parties, Contrasted magma-mantle relationships at fast and slow spreading ridges: Results from ODP Legs 147 and 153, *European Geophysical Union Meeting* (Strasbourg), *Terra Abstracts*, 1996.

Curewitz, D. and J.A. Karson, Distribution and life-span of mid-ocean ridge hydrothermal systems related to the frequency of faulting and dike intrusion, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S257, 1996.

Gao, D., J.A. Karson, and S.D. Hurst, Microstructures of metagabbros at the eastern Kane ridge-transform intersection in the MARK Area: Implications for extensional deformation of the oceanic crust, *30th International Geological Congress* (Beijing), 1996.

Gao, D., S.D. Hurst, J.A. Karson, J.R. Delaney, and F.N. Spiess, Side-scan sonar mapping at the eastern ridge-transform intersection of the MARK Area, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S273, 1996.

Gao, D., J.A. Karson, S.D. Hurst, J.R. Delaney, and F.N. Spiess, Side-scan sonar mapping of the seafloor geology in the MARK Area (23°40'N): Implications for the tectonic processes on the Mid-Atlantic Ridge at the Kane transform, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F707, 1996.

Gao, D., S.D. Hurst, J.A. Karson, J.R. Delaney, and F.N. Spiess, Computer-aided side-scan sonar image analysis at the eastern ridge-transform intersection in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F728, 1996.

Guenther, L.D., K.L. Verosub, S.D. Hurst, and J.A. Karson, Paleomagnetic constraints on the evolution of the tertiary East Greenland coast-parallel dike swarm: Tectonic rotations at a volcanic rifted margin, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F824, 1996.

Hurst, S.D., D. Gao, J.A. Karson, J.R. Delaney, and F.N. Spiess, Quantitative analysis of side-scan sonar images: The eastern ridge-transform intersection of the MARK Area, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S273, 1996.

- Karson, J.A., D. Curewitz, C.K. Brooks, M. Storey, H.C. Larsen, and M.S. Pringle, Geometry and kinematics of faulting on the tertiary East Greenland volcanic rifted margin, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F839, 1996.
- Karson, J.A., S.D. Hurst, R.M. Lawrence, and D. Gao, Time/space variations in seafloor spreading in the MARK Area: The past 1 M.Y. of crustal accretion along 100 km of the Mid-Atlantic Ridge, *FARA-InterRIDGE Mid-Atlantic Ridge Symposium*, Reykjavik Iceland, June 1996.
- Karson, J.A., S.D. Hurst, R.M. Lawrence, and SMARK Cruise Participants, Upper crustal construction and faulting at a segment-scale half graben on the Mid-Atlantic Ridge at 22°30'N (SMARK Area), *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S271, 1996.
- Karson, J.A., M. Storey, C.K. Brooks, and M. Pringle, Tertiary pseudotachylytes in East Greenland: Record of seismic fault slip on a volcanic rifted margin, *European Union of Geophysics, Terra Abstracts*, 1996.
- Klausen, M.B., C.K. Brooks, T.F.D. Nielsen, and J.A. Karson, Infrastructure of the coast parallel dyke swarm along the rifted continental margin of southeast Greenland, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F827, 1996.
- Lawrence, R.M., J.A. Karson, and S.D. Hurst, Paleomagnetic constraints on dike intrusion and faulting along the Mid-Atlantic Ridge at 22°40'N; SMARK Area, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S271, 1996.
- Lawrence, R.M. and J.A. Karson, Paleomagnetic constraints on low-angle normal faulting in serpentinites on the Mid-Atlantic Ridge at 23°N, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 77, F724, 1996.
- Waters, C.L., R. M. Lawrence, J.A. Karson, S.D. Hurst, and SMARK Cruise Participants, Photogeology of the SMARK area median valley floor at 22°30'N to 22°50'N: Half-graben segment with no neovolcanic zone, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 77, S273, 1996.

1995

- Karson, J.A., Internal structure of oceanic crust, *RIDGE Theoretical Institute: Faulting and Magmatism at Mid-Ocean Ridges* (Lake Tahoe), RIDGE Office, WHOI, 1995.
- Karson, J.A., Large-scale faulting and magmatic construction at volcanic rifts and continental margins: Examples from East Africa and East Greenland, *Geological Society of America, Annual Meeting* (New Orleans), *Abstracts with Programs*, 27, A-120, 1995.
- Lawrence, R.M., S.D. Hurst, and J.A. Karson, Paleomagnetic Constraints on Tectonic rotations along an asymmetric slow-spreading ridge at 22°N latitude, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 76, F582, 1995.
- Wheeler, W.H. and J.A. Karson, Mechanical extension of the median valley floor along the Mid-Atlantic ridge in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 76, F582, 1995.

1994

- Cannat, M., J.A. Karson, D.J. Miller, and Leg 153 Scientific Party, The lower crust and upper mantle from a slow-spreading ridge: Drilling results of ODP Leg 153 at the Mid-Atlantic ridge south of the Kane transform (MARK), *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 75, 322, 1994.
- Curewitz, D. and J.A. Karson, Dynamic and kinematic processes maintain high fracture porosity and control the habitat of hot springs, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 649, 1994.
- Dilek, Y., D. Kelley, A. Coulton, S. Hurst, and J. Karson, Hydrothermal veins in serpentinized peridotites at site 920 in the MARK Area: Implications for low-temperature deformation in mantle rocks at a slow-spreading ridge environment, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 650, 1994.
- Hurst, S.D., J.A. Karson, R.M. Lawrence, and J. Gee, Paleomagnetic demagnetization results from serpentinized peridotites and gabbros at sites 920-924: Core reorientation and correlation of fabric elements, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, v. 75, p. 659, 1994.
- Karson, J.A., New views of some classical extensional terranes, *Workshop on the Antarctic Rift and Trans-Antarctic Mountains* (Estes Park, CO), April 1994.
- Karson, J.A., C.K. Brooks, K. Hanghøj, and T.F.D. Nielsen, Tertiary faulting associated with dike intrusion and flexure on the East Greenland volcanic rifted margin, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 608, 1994.
- Karson, J.A., M. Cannat, D.J. Miller, and Leg 153 Scientific Party, Upper mantle and lower crustal processes at slow-spreading ridges: New insights from serpentinites and gabbroic rocks drilled on ODP Leg 153 in the MARK Area (MAR at 23°N), *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 626, 1994.
- Lawrence, R.M., J.A. Karson, and S.MARK Cruise Participants, Geology of a half-graben ridge segment: MAR at 22°N latitude, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 658, 1994.
- Lawrence, R.M., J.A. Karson, S.D. Hurst, J. Gee, and ODP Leg 153 Scientific Party, Correlation between magnetic anisotropy and deformation fabrics in serpentinized peridotites: ODP Leg 153, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 650, 1994.
- Tegner, C., S. Bernstein, D.K. Bird, J.A. Karson, and C.K. Brooks, Transition from continental flood basalt magmatism to formation of oceanic crust as recorded by gabbroic intrusives in the East Greenland Tertiary Province, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 607, 1994.
- Wheeler, W.H. and J.A. Karson, Basin evolution along weak transform faults: Examples from transform margins and the East African rift, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 75, 599, 1994.

1993

- Bigger, S.E. and J.A. Karson, Tectonics of the eastern third of the Kane transform fault: An up/down-insonifying sonar perspective, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 74, 562, 1993.
- Hurst, S.D. and J.A. Karson, Crack structure of seafloor outcrops based on analysis of digital images: A new approach to the study of the structure and acoustic properties of the uppermost oceanic crust, *Spring Meeting* (Baltimore), *Eos*, 74, 306, 1993.
- Karson, J.A., R.M. Lawrence, S.D. Hurst, and SMARK Cruise Participants, Low-angle normal faulting and dike rotations on the Mid-Atlantic Ridge (23°N), *InterRIDGE Symposium on Ridge Segmentation and Crustal Accretion Variables*, Durham, England, *InterRIDGE workshop report*, 1993.
- Karson, J.A., S.D. Hurst, and R.C. Walter, Footwall deformation associated with Cenozoic detachment faulting in the Turkana Rift, Kenya: Record of low-angle slip, *Geological Society of America, Annual Meeting* (Boston), *Abstracts with Programs*, 25, A474, 1993.
- Karson, J.A. and C.H. Petrina, Asymmetric rifting in East Africa: Evolution of faulting and magmatic construction across the Turkana Rift, Kenya, *Geological Society of America, Annual Meeting* (Boston), *Abstracts with Programs*, 25, A410, 1993.
- Wheeler, W.H. and J.A. Karson, Basin evolution along weak strike-slip faults- A new perspective on the western branch of the East African rift, *Geological Society of America, American Geophysical Union, Annual Meeting* (Boston), *Abstracts with Programs*, 25, A410, 1993.

1992

- Hefferan, K.P., J.A. Karson, S.H. Bloomer, and A. Saquaque, Oblique collision in a Proterozoic suture zone, Anti-Atlas Mountains, Morocco: Field and remote sensing analysis, *Geological Society of America, Annual Meeting* (Cincinnati), *Abstracts with Programs*, 24, A280, 1992.
- Hurst, S.D., R.D. Perkins, and J.A. Karson, Interactive computerized geologic field trips as case studies for geologic instruction, *Geological Society of America, Annual Meeting* (Cincinnati), *Abstracts with Programs*, 24, A131, 1992.
- Karson, J.A., Submersible observations of oceanic crust produced at fast- and slow-spreading ridges, *Ofioliti*, 17, 41, 1992.
- Karson, J.A., Segment boundaries in oceanic and continental rifts: Geometry and kinematics of transfer zones, *American Geophysical Union, Spring Meeting* (Montreal), *Eos*, 73, 286, 1992.
- Karson, J.A., J.R. Delaney, F.N. Spiess, S. Hurst, B. Lawhead, S. Bigger, D. Naidoo, and P. Gente, Deep-tow observations at the eastern intersection of the Mid-Atlantic Ridge and the Kane fracture zone, *Eos*, 73, 552, 1992.

Karson, J.A., S.D. Hurst, and D.G. Jarvis, Cenozoic detachment faulting in the Turkana Rift, Kenya, *American Geophysical Union, Spring Meeting (Montreal), Eos*, 73, 311, 1992.

Mutter, J.C. and J.A. Karson, Mechanical extension of oceanic lithosphere at slow-spreading ridges: Primary influence on morphology and segmentation, *American Geophysical Union, Spring Meeting (Montreal), Eos*, 73, 286, 1992.

Wheeler, W.H. and J.A. Karson, Strike-slip kinematics of the Rukwa Rift, East Africa, *American Geophysical Union, Fall Meeting (San Francisco), Eos*, 73, 534, 1992.

1991

Bougadir, B., A. Saidi, M. Samir, J.A. Karson, A. Rahimi, I. Reuber, and A. Saquaque, emplacement of alkaline intrusions in the Central High Atlas (Morocco) traced by their fluidity, *European Geophysical Union, Annual Meeting, Terra Abstracts*, 3, 320, 1991.

Graber, W.J., J.A. Karson, and A. Saquaque, Late Proterozoic intra-arc tectonics in the Kelaa des Mgouna Inlier, Anti-Atlas, Morocco, *Geological Society of America, Annual Meeting (San Diego), Abstracts with Programs*, 23, A134, 1991.

Hefferan, K.P., J.A. Karson, S.D. Hurst, A. Saquaque, and S.H. Bloomer, The Bou Azzer Inlier, Anti-Atlas Mountains, Morocco: A Proterozoic accretionary terrane, *Geological Society of America, Annual Meeting (San Diego), Abstracts with Programs*, 23, A474, 1991.

Hilal, R., A. Saquaque, I. Reuber, and J.A. Karson, Intrusive ultramafics in the Bou Azzer ophiolite complex, Anti-Atlas, Morocco, *European Geophysical Union, Annual Meeting, Terra Abstracts*, 3, 59, 1991.

Hurst, S.D. and J.A. Karson, Cross sections of the Hess Deep Rift: A critical analysis, *American Geophysical Union, Fall Meeting (San Francisco), Eos*, 72, 488, 1991.

Karson, J.A., Magmatic droughts on the Mid-Atlantic Ridge: Plutonic rocks exposed by intervals of amagmatic spreading, *American Geophysical Union, Fall Meeting (San Francisco), Eos*, 72, 471, 1991.

Saquaque, A., I. Reuber, and J.A. Karson, Arc systems related to oblique northward subduction in the Precambrian Anti-Atlas (Morocco), *European Geophysical Union, Annual Meeting, Terra Abstracts*, 3, 58, 1991.

Tekiout, B., A. Saquaque, I. Reuber, and J.A. Karson, Synvolcanic tectonics and related sedimentation in the fore-arc/arc environment of Bou Azzer (Anti-Atlas, Morocco), *European Geophysical Union, Annual Meeting, Terra Abstracts*, 3, 59, 1991.

1990

Cannat, M., C. Mével, and J. Karson, Direct evidence for lithospheric stretching at present day slow spreading ridges, *Symposium on Ophiolite Genesis and Evolution of Oceanic Lithosphere (Sultanate of Oman)*, 1990.

Hefferan, K.P., J.A. Karson, and A. Saquaque, Development of collisional basins in a Proterozoic convergent margin, Anti-Atlas, Morocco, *Geological Society of America, Annual Meeting (Dallas), Abstracts with Programs*, 22, A230, 1990.

- Hurst, S.D., J.A. Karson, and K.L. Verosub, Initial paleomagnetic results from the first oriented samples collected from the sea floor: Tilted dikes exposed at the Hess Deep, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 71, 1647, 1990.
- Karson, J.A., Accommodation zones in oceanic lithosphere: Kinematic requirements of seafloor spreading, *Symposium on Ophiolite Genesis and Evolution of Oceanic Lithosphere* (Sultanate of Oman), 1990.
- Karson, J.A., Extensional systems on the Mid-Atlantic Ridge, *Symposium on Ophiolites and Their Oceanic Analogues*, *Geological Society of London*, 1990.
- Karson, J.A., Submersible observations of oceanic crust produced at fast- and slow-spreading ridges, *Symposium on the Evolution of Oceanic Lithosphere, Institute of the Lithosphere, Academy of Sciences USSR*, Dagomys, November, 1990.
- Karson, J.A., S.D. Hurst, and P. Lonsdale, Internal structure of oceanic crust exposed in the walls of Hess Deep: Implications for processes at fast-spreading ridges, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 71, 1646-1647, 1990.
- (Karson, J.A. for) Mutter, J.C., Extensional Deformation in the Continents and Oceans -- Is There a Common Mechanism, *Symposium on the Evolution of the Continents, Geological Society of America, NE Sectional Meeting* (Syracuse), *Abstracts with Programs*, 22, 33, 1990.
- Mével, C., J.-M. Auzende, M. Cannat, P. Gente, J.A. Karson, E. Marion, and P. Tartarotti, Variation of crustal thickness along axis: The example of the MARK Area (23°N, M.A.R), *Symposium on the Evolution of Oceanic Lithosphere, Institute of the Lithosphere, Academy of Sciences USSR*, Dagomys, November 1990.
- Natland, J., P. Lonsdale, J.A. Karson, and D. Sims, High-level gabbros of the east Pacific rise sampled by submersible at fault exposures in Hess Deep, Eastern Equatorial Pacific, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 71, 1647, 1990.
- Saquaque, A., I. Reuber, J.A. Karson, Z. Mrini, H. Admou, H. Ezzouhairi, L. Ighid, A. Cisse, and A. Benyoucef, The Panafrican suture zone and magmatic arc system of the Moroccan Anti-Atlas, *Workshop on Atlas Mountains*, Berlin, 23-25 May, 1990.

1989

- Admou, H., A. Saquaque, A. Cisse, H. Benyoucef, S.H. Bloomer, I. Reuber, and J.A. Karson, Mise en place d'intrusions syn-cinematiques en regime dicrochevanchaut senestre dans la Boutonniere de Bou Azzer - El Graara (Anti-Atlas Marocain), *Franco-Moroccan Geological Congress* (Strasbourg), 1989.
- Fouquet, Y., C. Mével, J.M. Auzende, P. Gente, J.A. Karson, and A. Wafic, Sulfide mineralizations in the MARK Area: First results on samples collected by submersible during the HYDROSLAKE Cruise, *European Geophysical Union Meeting* (Strasbourg), *Terra*, 1, 203, 1989.
- Gente, P., C. Mével, J.-M. Auzende, Y. Fouquet, and J.A. Karson, Morphology and geological mapping of the Snake Pit Ridge, MARK Area (MAR 23°22'N) (HYDROSLAKE Cruise), *European Geophysical Union Meeting* (Strasbourg), *Terra*, 1, 211, 1989.

- Ibno Namr, K., I. Reuber, A. Saquaque, J.A. Karson, H. Admou, and S.H. Bloomer, Cortege filonien des ophiolites de Bou Azzer - El Graara, contexte structurale et caracterisation geochemique, *Franco-Moroccan Geological Congress* (Strasbourg), 1989.
- Karson, J.A., Geometry and kinematics of extensional tectonics on the Mid-Atlantic Ridge: Analogs from continental rifts, *Geological Society of America, Annual Meeting* (St. Louis), *Abstracts with Programs*, 21, 205, 1989.
- Mével, C., J.M. Auzende, M. Cannat, J. Dubois, Y. Fouquet, P. Gente, J. Karson, and J. Marion, Emplacement of deep rocks on the west median valley wall and Nodal basin in the MARK Area, *European Geophysical Union Meeting* (Strasbourg), *Terra*, 1, 204, 1989.
- Saquaque, A., J.A. Karson, H. Admou, I. Reuber, and K. Hefferan, Structuration de l'ensemble arc/avant-arc de Bou Azzer pendant sa collision oblique avec le craton W. Africain, *Franco-Moroccan Geological Congress* (Strasbourg), 1989.
- Wheeler, W.H., J.A. Karson, and B.R. Rosendahl, Structure and kinematics of the Livingstone Border Fault System, E. Africa, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 70, 1361, 1989.
- Wheeler, W.H., B.R. Rosendahl, and J.A. Karson, A case study in rift border fault structure: The Livingstone Mountains Border Fault System, SW Tanzania, E. Africa, *Geological Society of America, Annual Meeting* (St. Louis), *Abstracts with Programs*, 21, A83, 1989.

1988

- Curtis, P.C., S.H. Bloomer, J.K. Meen, and J.A. Karson, Basic alkaline volcanism in East Africa: South Island, Kenya, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1498, 1988.
- Gente, P., C. Mével, J-M. Auzende, M. Cannat, J-P. Donval, J. Dubois, Y. Fouquet, D. Grimaud, J.A. Karson, M. Segonzac, and M. Stievenard, Submersible study of the snake pit hydrothermal area: First detailed mapping of a MAR black-smoker vent field, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1498, 1988.
- Karson, J.A., C. Mével, J-M. Auzende, M. Cannat, J. Dubois, Y. Fouquet, and P. Gente, Extensional structures on the W. Median Valley Wall and Nodal Basin in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1431, 1988.
- Mével, C., J-M. Auzende, M. Cannat, J-P. Donval, J. Dubois, Y. Fouquet, P. Gente, D. Grimaud, J.A. Karson, M. Segonzac, and M. Stievenard, HYDROSNAKE 1988: Submersible study of seafloor spreading in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1439-1440, 1988.
- Saquaque, A., J.A. Karson, S. Bloomer, H. Admou, D. Naidoo, K. Hefferan, and I. Reuber, Precambrian ophiolites and accretionary tectonics, Anti-Atlas, Morocco, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1453, 1988.

1987

- Cannat, M., C. Mével, J-M. Auzende, J. Dubois, Y. Fouquet, P. Gente, and J.A. Karson, Serpentinized upper mantle on the Median Valley Walls of the MARK Area: Geology and Geophysics from NAUTILE, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 69, 1431, 1987.
- Karson, J.A., Seafloor spreading on the Mid-Atlantic Ridge: Implications for oceanic lithosphere and ophiolites produced at slow-spreading ridges, *Troodos '87 Symposium: Ophiolites and oceanic lithosphere, Geological Survey Department, (Nicosia) Cyprus*, 1987.
- Karson, J.A. and A.T. Winters, Tectonic extension on the Mid-Atlantic Ridge, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 68, 1508, 1987.

1986

- Barany, I. and J.A. Karson, Sedimentation and tectonics of the Clipperton Transform Fault, Eastern Pacific, *Geological Society of America, Annual Meeting* (Phoenix), *Abstracts with Programs*, 19, 579, 1986.
- Brown, J.R. and J.A. Karson, Variations in axial processes in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 67, 1228, 1986.
- Clipperton Tectonic Team, Investigations of the Clipperton Transform: Sea Beam, Sea MARC I, Submersible, and Towed Camera, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 67, 1244, 1986.
- Curtis, P.C., S.H. Bloomer, and J.A. Karson, Structure and petrology of Central Island, Lake Turkana, Kenya, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 67, 1250, 1986.
- Karson, J.A., J.R. Brown, and A.T. Winters, Seafloor spreading in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 67, 1213, 1986.
- Winters, A.T. and J.A. Karson, Tectonic extension in the MARK Area, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 67, 1228, 1986.

1985

- Collins, J.A., T.M. Brocher, and J.A. Karson, J.A., Two-dimensional seismic reflection modeling of the oceanic crust/mantle transition in the Bay of Islands Ophiolite Complex, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 66, 956, 1985.
- Curtis, P.C., S.H. Bloomer, and J.A. Karson, Petrology and geochemistry of volcanic rocks from the Lake Turkana Region, Northern Kenya, *American Geophysical Union, Spring Meeting* (Baltimore), *Eos*, 66, 418, 1985.
- Karson, J.A., Deviations from regional trends in oceanic dyke swarms: Stress-controlled injection and tectonic rotations in ophiolites and oceanic crust, *International Conference on Mafic Dyke Swarms*, University of Toronto, June 1985.

Karson, J.A., S.H. Bloomer, P.C. Curtis, T. Dunkelman, B.R. Rosendahl, and Project PROBE, Quaternary tectonics and volcanism in the Turkana Region, Gregory Rift, Kenya, *Continental Extensional Tectonics Meeting*, Durham, England, April 1985.

Karson, J.A. and D.L. Elthon, Magmatic, metamorphic and tectonic processes in oceanic fracture zones: Evidence from coastal complex, Western Newfoundland, *William Smith Meeting on Oceanic Fracture Zones*, Geological Society of London, May 1985.

Karson, J.A., P.J. Fox, R.S. Detrick, L. Mayer, W.B.F. Ryan, K.A. Kastens, and J.A. Collins, Tectonics of the Kane Fracture Zone, *William Smith Meeting on Oceanic Fracture Zones*, Geological Society of London, May 1985.

Keith, D.J., P.J. Fox, and J.A. Karson, The role of mass wasting process in the modification of oceanic rift valley morphology, *Geological Society of America*, Annual Meeting (Orlando), *Abstracts with Programs*, 17, 625, 1985.

1984

Collins, J.A., J.A. Karson, T.M. Brocher, and J.F. Casey, Geologic and seismic structure of the crust/mantle transition in the Bay of Islands Ophiolite Complex, *American Geophysical Union, Spring Meeting* (Cincinnati), *Eos*, 65, 275, 1984.

Curtis, P.C. and J.A. Karson, Quaternary volcanism and tectonics, Lake Turkana, East African Rift, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 65, 1116, 1984.

Detrick, R.S., P.J. Fox, K. Kastens, W.B.F. Ryan, L. Mayer, and J.A. Karson, A Sea Beam Survey of the Kane Fracture Zone and the Adjacent Mid-Atlantic Ridge Rift Valley, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 65, 1006, 1984.

Goud, M.R. and J.A. Karson, Tectonic significance of sheared chinks from FAMOUS Fracture Zone B, *American Geophysical Union, Spring Meeting* (Cincinnati), *Eos*, 65, 274, 1984.

Karson, J.A., Extensional and transform boundaries between oceanic and continental lithosphere, *American Geophysical Union, Spring Meeting* (Cincinnati), *Eos*, 65, 283-284, 1984.

Karson, J.A., Variations in extensional faulting along the Mid-Atlantic Ridge, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 65, 1114, p. 1984.

1983

Collins, J.A., J.A. Karson, and J.F. Casey, The velocity structure of the fossil crust/mantle boundary in the Bay of Islands Ophiolite Complex, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 64, 755, 1983.

Karson, J.A., Obduction history of the Bay of Islands Ophiolite Allochthon, Western Newfoundland, *Geological Society of America, NE Sectional Meeting, Abstracts with Programs*, 15, 188, 1983.

Karson, J.A. and H.J.B. Dick, Deformation and metamorphism of oceanic crust on the Mid-Atlantic Ridge, *Working group on Mediterranean ophiolites, 2nd Annual Meeting, Ophiolites: Oceanic Tectonics and Metamorphism* (Florence), 1983.

Karson, J.A., D.L. Elthon, J.F. Casey, and M. Titus, Metamorphism in the Bay of Islands ophiolite complex, *Working group on Mediterranean Ophiolites, 2nd Annual Meeting, Ophiolites: Oceanic Tectonics and Metamorphism* (Florence), 1983.

1982

Casey, J.F., J.F. Dewey, and J.A. Karson, Diversity and variation in the oceanic lithosphere: The ophiolite sample, *Geological Society of London Meeting on Ophiolites and Oceanic Lithosphere*, November 1982.

Casey, J.F., J.A. Karson, E. Rosencrantz, D.L. Elthon, S. O'Connell, and M. Titus, Reconstruction of the geometry of accretion during formation of the Bay of Islands Ophiolite Complex, *Geological Society of London Meeting on Ophiolites and Oceanic Lithosphere*, November 1982.

Karson, J.A., Variations in structure and petrology in the coastal complex, Newfoundland: The anatomy of an oceanic fracture zone, *Geological Society of London Meeting on Ophiolites and Oceanic Lithosphere*, November 1982.

Karson, J.A. and P.A. Rona, Structure of the Eastern Median Valley Wall, MAR 26°N, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 63, 1103. 1982.

Rona, P.A., G. Thompson, M. Mottl, J.A. Karson, W.J. Jenkins, D. Graham, K. Von Damm, and J.M. Edmond, Direct observation of hydrothermal mineralization at the TAG Hydrothermal Field, Mid-Atlantic Ridge 26°N, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 63, 1014, 1982.

1981

Casey, J.F. and J.A. Karson, The shapes and dimensions of magma chambers beneath mid-ocean ridges: Evidence from the Bay of Islands Ophiolite Complex, *Chapman Conference on the Generation of Oceanic Lithosphere*, April 1981.

Karson, J.A., Shallow crustal deformation at the MAR 24°N, *Chapman Conference on the Generation of Oceanic Lithosphere*, April 1981.

Karson, J.A. and J.F. Casey, Lateral variations in the internal structure of the Bay of Islands Ophiolite Complex, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 62, 1049, 1981.

Oceanographer Transform Tectonic Research Team, High-resolution investigations of the Mid-Cayman Rise and the Oceanographer Transform: Evidence for profound changes in the thickness of oceanic crust proximal to slowly-slipping ridge/transform/ridge intersections, *Chapman Conference on the Generation of the Oceanic Lithosphere*, April 1981.

Thompson, G. and Kane '80 Investigators, Stratigraphic, lithologic, and geochemical variations in layer 2 and 3 as observed at the intersection of the Mid-Atlantic Ridge and the Kane fracture zone, 24°N latitude, *Chapman Conference on the Generation of Oceanic Lithosphere*, April 1981.

Waldron, K. and J.A. Karson, Internal structure of the Look-Out Hills Massif: Shallow level deformation and igneous activity in an early Ordovician ocean transform fault, *American Geophysical Union, Fall Meeting* (San Francisco), *Eos*, 62, 1049, 1981.

1980

Karson, J.A., H.J.B. Dick, W.B. Bryan, and G.A. Thompson, Tectonics of ridge-transform intersections at the Kane fracture zone, *Geological Society of America Annual Meeting* (Atlanta), *Abstracts with Programs*, 12 (7), 458, 1980.

Karson, J.A. and members of Tamayo Scientific Team, Submarine landsliding at the eastern end of the Tamayo transform fault, *American Geophysical Union, Spring Meeting* (Toronto), *Eos*, 61 (17), 359, 1980.

Oceanographer Transform Tectonic Research Team, Geology of the oceanographer transform: Submersible and deep-towed investigations, *American Geophysical Union, Fall Meeting*, (San Francisco), *Eos*, 61 (46), T45, 1980.

Oceanographer Transform Tectonic Research Team, The oceanographer transform: Morphotectonic character of a ridge transform intersection, *American Geophysical Union, Fall Meeting*, (San Francisco), *Eos*, 61 (46), T44, 1980.

Tamayo Scientific Team, East Pacific Rise - Tamayo Transform Fault Intersection, *Geological Society of America Annual Meeting* (Atlanta), *Abstracts with Programs*, 12 (7), 461, 1980.

Tamayo Scientific Team, Tectonics of a ridge-transform intersection zone: Tamayo - East Pacific Rise, Gulf of California, *American Geophysical Union, Spring Meeting* (Toronto), *Eos*, (late abstracts), 1980.

Presentations Prior to 1980

Karson, J.A., Evolution of the Coastal Complex, Western Newfoundland: An example of oceanic fracture zone tectonics, *International Ophiolite Symposium*, Nicosia, Cyprus, April 1979.

Karson, J.A., Internal structure of the Lewis Hills Massif, Western Newfoundland; Symposium on Problems of Ophiolite Genesis and Emplacement, *Geological Association of Canada/Mineralogical Society of Canada Annual Meeting* (Quebec), May 1979.

Karson J.A. and J.F. Casey, The geologic nature of the oceanic MOHO: Evidence from the Bay of Island Ophiolite Complex, *Geological Society of America Annual Meeting* (San Diego), *Abstracts with Programs*, 11 (7), 454, 1979.

Karson, J.A., Compressional and shear wave anisotropy to 20 kbars in foliated and lineated amphibolites, *Canadian Geophysical Union* (London, Ont.), May 1978.

Karson, J.A., Intrusive Iherzolite and related rocks of the Lewis Hills, Bay of Islands ophiolite complex, Western Newfoundland, *Geological Society of America N.E. Section Meeting* (Boston), *Abstracts with Programs*, 10 (2), 50, 1978.

- Pearce, G.W., J.A. Karson, R.M. Stesky, and P.Y.F. Robin, Effects of pressures to 20 Kbars on remanent magnetism, *Canadian Geophysical Union* (London, Ont.), May 1978.
- Karson, J.A., Compressional wave anisotropy in fracture zone-related ophiolite rocks, Lewis Hills, Western Newfoundland, *American Geophysical Union, Spring Meeting* (Miami), *Eos*, 57 (4), 386, 1978.
- Karson, J.A., Lewis Hills ophiolite complex: Early Ordovician fracture zone and adjacent oceanic crust, *Geological Society of America N.E. Section Meeting* (Binghamton) *Abstracts with Programs*, 9 (3), 281, 1977.
- Dewey, J.F. and J.A. Karson, Possible fracture zone control on generation and obduction of Ordovician ophiolites in Western Newfoundland, *Geological Society of America Meeting* (Denver), *Abstracts with Programs*, 8 (6), 836-837, 1976.
- Berger, A.R., J.F. Dewey, and J.A. Karson, Polyphase-deformed cumulate wehrlite/gabbro mega-lenses in the dunite/harzburgite metamorphic ultramafic rocks of the Lewis Hills ophiolite complex, Southwest Newfoundland, *Geological Society of America N.E. Section Meeting* (Syracuse), *Abstracts with Programs*, 7 (1), 25-26, 1975.