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Born in Wilmington Delaware, on Feb. 15, 1956. Married Rachel L. Cox on Sept. 6, 1987.  
 Two daughters: Sara C. Kelemen, born Jan. 21, 1994 & Lucille B. Kelemen, born Dec. 2, 1997.

### Education

- 1987 Ph.D., University of Washington. Thesis advisor: Dr. Bernard Evans. Assimilation of Ultramafic Rock in Fractionating Magma.
- 1985 M.Sc., University of Washington. Research Project advisor: Dr. Bernard Evans. Geology of the Big Jim Complex, Washington Cascades.
- 1980 A.B. cum laude, with high distinction in Earth Sciences, Dartmouth College.

### Academic Employment & Awards

- 2013– present Geochemistry Fellow, Geochemical Society & European Assoc Geochemistry
- 2013-16 Visiting Professor, Ocean & Earth Science, University of Southampton, UK
- 2012-14 Vice Chair, Dept. of Earth & Environmental Sciences, Columbia University
- 2012 Chapman Lecturer, University of Alaska
- 2010 CIRES Distinguished Lecturer, University of Colorado
- 2009 Visiting Professor, Université de Lausanne
- 2008 MARGINS Distinguished Lecturer
- 2007 Hallimond Lecturer, Mineralogical Society
- 2006– present Fellow, Mineralogical Society of America
- 2004– present Arthur D. Storke Professor, Dept. of Earth & Environmental Sciences, Columbia University and Lamont Doherty Earth Observatory
- Associate Research Scientist, Dept. of Earth and Planetary Sciences, American Museum of Natural History
- Adjunct Scientist, Woods Hole Oceanographic Institution
- Fellow, American Geophysical Union
- 2004 Bowen Award, Volcanology, Geochemistry, Petrology Section, AGU
- 2003 Co-Chief Scientist, Ocean Drilling Program Leg 209 (May-June 2003)
- 2001-04 Charles Francis Adams Chair, Woods Hole Oceanographic Institution
- 2000-04 Senior Scientist, Woods Hole Oceanographic Institution
- 1997-00 Tenured Associate Scientist, Woods Hole Oceanographic Institution
- 1994-97 Associate Scientist, Woods Hole Oceanographic Institution
- 1993 Visiting Scientist, CNRS Centre Géologique et Géophysique, Montpellier, France
- 1990-94 Assistant Scientist, Woods Hole Oceanographic Institution
- 1990 Postdoctoral Investigator, Woods Hole Oceanographic Institution
- 1990 Visiting Assistant Professor of Earth Sciences, Dartmouth College
- 1988-90 Postdoctoral Scholar, Woods Hole Oceanographic Institution
- 1988 Postdoctoral Research Associate, University of Washington
- 1986-87 Research Assistant, University of Washington
- 1982-86 NSF Graduate Fellow, University of Washington
- 1981-82 Teaching Assistant, University of Washington. Also 82, 84, 85
- 1980-81 Reynolds Fellowship for Foreign Study, Dartmouth College, shared with Mark Sonnenfeld (Dartmouth '80): geologic mapping, NW Himalaya, India

### Professional Employment

- 1980-92 Founding partner, Dihedral Exploration, mineral exploration consultants. Contracts with: Bull Moose Resources 81; Falconbridge Ltd. 83; Klukwan Iron Ore 83; Noranda (Alaska) 84; Long Lac Mineral Exploration (US) 85; Cominco (Alaska) 86, 87, 88; Geddes Resources 87; Platinova Resources Ltd. 88-91. Mapping and sampling of potential ore deposits in Alaska, British Columbia, and Greenland.
- 1978 Physical Science Aide, U.S. Army Cold Regions Research and Engineering Laboratory (CRREL), Hanover, NH. Modeling of climate, north slope of Alaska.

### Education

<b>Primary doctoral advisor to:</b>		Einat Aharonov	(WHOI/MIT; 1995)
Jun Korenaga	(WHOI/MIT; 1999)	Mike Braun	(WHOI/MIT; 2004)
Jill VanTongeren	(Columbia, 2009)	Martin Collier	(Columbia 2010, co-advisor)
Janelle Homburg	(Columbia, 2012)	Lisa Streit	(Columbia, 2012)
<b>Generals committee/PhD committee member for:</b>	Jake Eichenbaum-Pikser (Columbia 2013)		
Claire Bendersky	(Columbia 2013)	Alex Lloyd	(Columbia 2012)
Antonio Buono	(Columbia 2011)	Wei Du	(Columbia, 2011)
Jason Jweda	(Columbia 2011)	Evelyn Mervine	WHOI/MIT 2011)
Byrdie Renick	(Columbia 2009)	Chris Waters	(WHOI/MIT 2009)
Sam Krevor	(Columbia, 2008)	Pierre Bouilhol	(ETH-Z, 2008)
Matthew Jackson	(WHOI/MIT 2008)	Kyla Simons	(Columbia, 2008)
Gideon Simpson	(Columbia, 2008)	Lynne Elkins	(WHOI/MIT 2008)
Jason Bryant	(Univ. S. Carolina 2008)	Nicholas Austin	(MIT; 2008)
Jessica Warren	(WHOI/MIT, 2007)	Michael Johnsen	(W Wash U, MSc 2007)
Kevin Wheeler	(Columbia 2007)	Richard Katz	(Columbia 2006)
Anna Cipriani	(Columbia, 2006)	Zachary Morgan	(Brown 2006)
Matt Rioux	(UCSB 2005)	Andrew Greene	(W Wash U, MSc 2003)
Mark Behn	(WHOI/MIT; 2003)	Robyn Kelly	(WHOI/MIT; 2003)
Ken Koga	(WHOI/MIT; 1998)	Mathieu Benoit	(Toulouse; 1997)
Eichi Takazawa	(MIT; 1996)	Dan Lizaralde	(WHOI/MIT; 1996)
Carlos Garrido	(Granada; 1995)	Margarite Godard	(Montpellier; 1993)
Malika Remaidi	(Montpellier; 1993)	Jon Snow	(WHOI/MIT; 1993)

### Postdocs supervised

Carlos Garrido	(1995-98)	Matthew Jull	(1998-02)	Othmar Muentener	(1998-99)
Karen Hanghøj	(1999-00)	Laurent Montesi	(2001-02)	Magali Billen	(2002-03)
Ben Holtzman	(2004-05)	Taber Hersum	(2005-06)	John Rudge	(2007-08)
Stacia Gordon	(2010)	Kristoffer Szilas	(2012-14)	Sarah Lambart	(2013- )

### Courses

- 2011-present Co-convenor, with A. Hofmann and others, Solid Earth Geochemistry seminar
- 2010-present Earth Resources and Sustainable Development, Columbia University
- 2007 Graduate field course, Columbia, Brown, ... with Greg Hirth
- 2006-present Introduction to Petrology, Columbia University, every other spring
- 2005-present Reading seminars in petrology & geochemistry, usually Fall semester
- 2006-present Co-convenor, with T. Plank, E. Lev, Lamont Geodynamics Seminar, both semesters
- 2005 Seminar on melt transport & crustal accretion, LDEO
- 2004-12 Earth: Origin, Evolution, Processes, Future, Columbia University
- 2003 Graduate field course WHOI, MIT, Brown University, with Greg Hirth
- 2002 Convenor of Geodynamics Seminar (Joint Program course 12.753)
- 1995-04 WHOI/MIT Joint Graduate Program, Igneous Processes ..., Fall every other year
- 1994-96 WHOI Summer Student Fellowship Committee
- 1992-04 Co-Convenor, WHOI Geochemistry Seminar
- 1989-2004 WHOI Keck Geodynamics Seminar participant and planning committee

## **Outreach and Community Service**

### **Outreach publications**

P.B. Kelemen, Melt extraction from the mantle beneath ocean ridges, [Oceanus](#) 41, 23-28, 1998  
 P.B. Kelemen, Unraveling the tapestry of oceanic crust, [Oceanus](#) 42, 40-43, 2004.  
 P.B. Kelemen, The origin of the land under the sea, [Scientific American](#) 300, no. 2, 52-57, Feb. 2009  
 Fall 2009 op ed pieces in [Popular Mechanics](#) and [Huffington Post](#)  
 Fall 2012 op ed piece in [Popular Mechanics](#)

### **Outreach presentations**

Alliance Bernstein panel discussion 2010  
 Annual Coalition for National Science Funding (CNSF) Exhibition and Reception on March 2009  
 BP Panel on Air Capture of CO<sub>2</sub>, 2009  
 Brearley School, NY 2012  
 Bruce Museum, Greenwich CT 2012  
 Children's School of Science, Woods Hole MA, 2005  
 Columbia University Energy Symposium Technology Showcase, April 2011  
 Columbia Westchester Alumni Assoc 2006  
 Earth2Class Workshop for Teachers, NY 2007  
 Explorer's Club NY 2005, 2012  
 Farragut Middle School, Hastings on Hudson NY, 2005, 2011  
 Hillside Elementary School, Hastings on Hudson, NY 2005-2007  
 JP Morgan Private Bank short course 2009  
 Lamont Advisory Board 2006, 2009, 2011  
 Lamont Doherty Earth Observatory, Earth Day presentation 2012  
 MARGINS Distinguished Lecturer 2007-08  
 Mullen Hall School, Falmouth MA, 2003, 2004  
 Riverdale Country School, NY 2008, 2009  
 Trinity School, NY 2012  
 Science-Engineering-Technology Congressional Visits Day (SET-CVD) for AGU, April 2011, 2012

### **Science planning**

9/12 Convener: ICDP Workshop on Scientific Drilling in the Samail ophiolite, Oman  
 9/11: keynote: GeoPRISMS Alaska Workshop  
 9/11: keynote: EarthScope Workshop on the Lithosphere/ Asthenosphere Boundary  
 1/11: keynote: IODP/ICDP Workshop on Mineral Carbonation for CO<sub>2</sub> Storage, Oman  
 9/10: keynote, IODP & Deep Carbon Observatory Workshop, Reaching the Mantle Frontier, DC  
 9/09: keynote, Integrated Ocean Drilling Program (IODP) Decadal Science Planning, Bremen, GE  
 7/09: keynote, InterRidge Planning Meeting, Southampton UK  
 6/09: rapporteur, air capture of CO<sub>2</sub>, National Acad. Sci. Workshop on Geoengineering  
 3/09: invited participant, American Physical Society CO<sub>2</sub> Air Capture Meeting, Princeton Univ.  
 3/09: presentation, Coalition for National Science Funding Exhibition for the US Congress  
 2/09: invited speaker, British Petroleum CO<sub>2</sub> Capture from Air Symposium, New York  
 08-present: member CO<sub>2</sub> Sub-Committee, Soc. Exploration Geophysicists Research Committee  
 11/07: Keynote speaker MARGINS Izu-Bonin-Marianas Workshop  
 3/07 Lead Proponent (1 of 5), Mission Moho Proposal, IODP  
 9/06: Keynote speaker, IODP Mission Moho Workshop

04: keynote, RIDGE2000 Slow Spreading Ridge Workshop  
 02: keynote, MARGINS Izu-Bonin-Marianas Workshop  
 00: keynote, RIDGE 2000 Integrated Studies Workshop  
 99: NSF OCE Decadal Planning Meetings (Working Group 6, Solid Earth)  
 99: COMPLEX Meeting, Vancouver, BC, planning International Ocean Drilling Program  
 98: Subduction Factory Workshop, NSF MARGINS Initiative  
 98- ..., Member, Architecture of Oceanic Lithosphere Program Planning Group, ODP  
 97-..., Member, InterRidge Working Group on 4D Architecture of Oceanic Lithosphere  
 96: Invited participant, JOI/CORE Workshop on the Future of Marine Geosciences  
 96: keynote, ODP-INTERIDGE-IAVCEI Workshop on the Oceanic Lithosphere and Scientific Drilling into the 21st Century  
 94: RIDGE Workshop: Exper. Approaches to Ridge Segment Structure & Dynamics (RISES)  
 93: JOI Workshop on Magmatism and Mass Flux at Continental Margins  
 90: JOI/USSAC Workshop on Large Igneous Provinces  
 90: ONR Workshop on the Physical Properties of Volcanic Seafloor  
 89: JOI/USSAC Workshop on Drilling the Oceanic Lower Crust and Mantle

#### **Meeting and short course convener**

9/12 Convener, keynote, ICDP Workshop on Scientific Drilling in the Samail ophiolite, Oman  
 8/12 Chair, keynote, Gordon Conference on Rock Deformation  
 1/12 scientific committee, [Int'l Conf on Geology Arabian Plate & Oman Mtns](#), Oman  
 1/11 convener, [IODP/ICDP Workshop on Mineral Carbonation](#), Muscat, Oman  
 8/10 vice-chair, Gordon Conference on Rock Deformation  
 9/08 convener, Chapman Conf. / 5th Int'l Workshop on Orogenic Lherzolites, Mt Shasta, CA  
 7/06 convener, Penrose Conference on Arc Crustal Genesis and Evolution, Valdez, Alaska  
 12/05 convener AGU Special Session, Results from Talkeetna Arc Continental Dynamics Project  
 6/05 convener, ODP Leg 209 Scientific Meeting, Samani, Japan  
 04 convener, Goldschmidt Conference Special Session on Slow- and Ultra-Slow Spreading Ridges  
 02 organizing committee, 4th International Workshop Orogenic Lherzolites ..., Hokkaido, Japan  
 00 Scientific Organizing Committee, International Conference on the Geology of Oman  
 99 convener, Fall AGU Special Session on Results of MODE 98 Cruises  
 99 organizing committee, 3rd International Workshop Orogenic Lherzolites ..., Pavia, Italy  
 99 convener, Goldschmidt Conference Session on Continental Genesis  
 99 convener Spring AGU Special Session on Melt Migration in the Mantle and Lower Crust  
 1/98 convener, RIDGE Winter School on Oman ophiolite  
 97 convener, Fall AGU Special Session on Origin of Cratonic Mantle  
 95 organizing committee, 2nd International Workshop Orogenic Lherzolites ..., Granada, Spain

#### **Press coverage of recent work on geological CO2 capture and storage**

paper: print, radio and video including The Economist 08, Christian Science Monitor 09, Popular Mechanics 09, OnEarth (NRDC) 09, NPR Earth & Sky 08, BBC Naked Scientists 08, MSNBC 08, ABC Online 08, Der Spiegel 08, Times of India 08, Times of Oman 08, Shanghai Daily 08, China Post 08, Frankfurter Allgemeine Zeitung 08, El Mundo 08, El Pais 08, Technology Review 08, 10, Physics Today 08, Nature Reports 08

### Field Work

- 1976-77 two months climbing and sampling snow for oxygen isotope study, Cordillera Blanca, Peru
- 1980 five months reconnaissance mapping of Indus Suture Zone, Spongtang Ophiolite, and "Tibetan Zone", Ladakh, NW India
- 1981 two weeks, Ag and Au exploration, Snippaker valley, Iskut Region, British Columbia
- 1981-83 four months mapping, Big Jim intrusion, Mt. Stuart batholith, Washington
- 1983 one month mapping and sampling, Kigluaik Mountains, Seward Peninsula, Alaska
- 1983 two weeks Pt, Pd exploration, Klukwan ultramafic intrusion, SE Alaska
- 1983, 87 six weeks, Cu and Au exploration, Windy Craggy massive sulfide deposit, St Elias Mountains, British Columbia
- 1984 two months climbing & thermochronology sampling, Gasherbrum IV, Karakoram Range, Pakistan
- 1984-85 two months Au, Ag, Zn exploration, Prince of Wales Island, SE Alaska
- 1985-86 three weeks mapping and sampling, Emigrant Gap intrusion, Sierra Nevada, California
- 1986-87 three weeks mapping and sampling Chilliwack batholith, N Cascades, Washington
- 1986-88 three months Au exploration, Rainy Pass area, Alaska Range, central Alaska
- 1988 two months climbing & thermochronology sampling, Kulu area, NW Himalaya, India
- 1988,89,91 four months Pd, Pt, Au exploration & NSF supported research, Skaergaard, Kap Edvard Holm and Lilloise intrusions, East Greenland
- 1990 two months climbing & thermochronology sampling, Lahaul area, NW Himalaya, India
- 1990-2008 lead PI, mapping & sampling, Josephine, Trinity and Ingalls peridotites, SW Oregon, N California, Washington, total of six months accumulated over 17 years
- 1994 Shinkai 6500 submersible cruise, western ridge-transform intersection, Kane Fracture Zone, Mid-Atlantic Ridge
- 1994-2001 lead PI, two to five weeks per year, every year, mapping and sampling, Samail ophiolite, Oman
- 1995 four weeks mapping and sampling, Lilloise intrusion, Weidemann Fjord dikes, East Greenland
- 1996 co-PI, SIGMA onshore-offshore seismic experiment, East Greenland, one month
- 1998 Co-Chief Scientist, Shinkai 6500 submersible cruise, 14-16°N, Mid-Atlantic Ridge, site survey for future ODP drilling
- 2000-2002 lead PI, Talkeetna Arc Continental Dynamics Project, three months mapping and sampling of Jurassic arc section, south central Alaska
- 2000 five weeks mapping and sampling, flood basalts, Weidemann Fjord and Borgtinderne intrusion, East Greenland
- 2003 Co-Chief Scientist, Ocean Drilling Program Leg 209, Sampling peridotite along the Mid-Atlantic Ridge, 14-16°N
- 2004 co-PI, WAVE Expedition, dredging from Russian border to Unalaska Island, Aleutian arc, Alaska
- 2007-13 lead PI, lead PI, two to five weeks per year, every year, mapping and sampling, Samail ophiolite, Oman

### Research and Education Grants

- 2012-14 NSF EAR-1147763: "Collaborative Research: Immersive Audio-visualization of Seismic Wave Fields in the Earth (EarthScope Education & Outreach)", Ben Holtzmann, PI; P Kelemen, D Ebel (AMNH), J Tromp (Princeton) co-PI's, \$94,708 at Columbia
- 2012-13 NSF OCE-1144759: "Collaborative Research: Plutons as ingredients for continental crust: Pilot study of the difference between intermediate plutons and lavas in the intra-oceanic Aleutian arc", Kelemen, PI, Steve Goldstein, Sidney Hemming, M. Rioux(UCSB) co-PI's, \$99,105 at Columbia
- 2012 NSF EAR-1238362: "Partial Support of 2012 Gordon Conference on Rock Deformation, Proctor Academy, Andover NH", P Kelemen PI, \$22,505 to GRC
- 2012 DOE, BES Geoscience Program, Program Director Nick Woodward, Partial Support of 2012 Gordon Conference on Rock Deformation, \$10,000 to GRC
- 2012 Alfred P. Sloan Foundation, Columbia Univ. Grant #B2012-20, "Planning Workshop, Oman Drilling Project", P. Kelemen PI, \$30,000
- 2012 International Continental Drilling Program (ICDP), support for "Workshop on Scientific Drilling in the Samail Ophiolite, Sultanate of Oman, Palisades NY, September 2012, P. Kelemen PI, \$50,000
- 2011-14 NASA 10-EXO10-0138 "Production of Organic Compounds During Serpentinization: Biotic or Abiotic?", Kelemen is "Team Member", lead PI: Everett Shock, Arizona State University, no direct support at Columbia University
- 2011-14 NASA 10-MFRP10-0098 "Aqueous Alteration of Ultramafic Rocks in Oman as an Analog for Understanding Martian Carbonates: a Remote, Field and Laboratory Investigation", Kelemen is "Team Member", lead PI: Bethany Ehlmann, Caltech, no direct support at Columbia University
- 2011-14 NSF EAR-1049905: "Petrologic Study of Peridotite Carbonation in Oman: Temperature, Timing and Fluid Composition", P Kelemen PI, \$300,203
- 2010-13 NSF EAR-0961359: "Constraints on the Composition of the Subducting Oceanic Crust in the Northwest Pacific Ocean Basin", S Straub, PI; P Kelemen, S Goldstein, co-PI's, \$200,735
- 2008-12 NSF EAR-0742368: "Collaborative Research: Element recycling from UHP metasediments: Evidence and consequences", P Kelemen, B Hacker (UCSB) PI's, \$160,590 at Columbia.
- 2010-11 NSF OCE 1059175: "Partial support for US participation in a workshop geological carbon capture & storage in mafic and ultramafic rocks", Kelemen PI, \$29,000
- 2010 NSF EAR-1053122: "2010 Rock Deformation Gordon Research Conference at Tilton School, New Hampshire", P. Kelemen PI, \$25,000 to GRC
- 2010-13 DOE DE-FE0002386: Geo-chemo-mechanical studies for permanent CO2 storage in geologic reservoirs, Kelemen PI, co-PI's J Matter (LDEO), A Park (Dept Earth & Environmental Engineering, Columbia), approximately \$300,000
- 2008-13 NSF EAR 0739010: "Collaborative Research: Microstructural and Modeling Constraints on Strain Localization, LPO Development and Rheology of the Upper Mantle", P Kelemen, M Spiegelman, G Hirth (Brown), \$241,347 at Columbia
- 2008-12 NSF EAR 0727013: "Collaborative Research: Genesis of Primitive, High-Sr Lavas in the Western Aleutians", P Kelemen, G Yogodzinski (U S Carolina), J Vervoort (Washington State) PI's, \$31,027 at Columbia
- 2006-08 Columbia Initiative in Science and Engineering Gant, Natural Carbon Sequestration in Ophiolite Peridotites – Rates and Mechanism of Serpentinization and Carbonation, P Kelemen, J Matter, PI's, \$200,000

- 2006-07 NSF EAR-0632774: "Support for the Penrose Conference on Arc Crustal Genesis and Evolution; July 9-15, 2006; Valdez, Alaska", P Kelemen, G Hacker (UCSB) PI's, \$15,000 to UCSB
- 2006-09 NSF EAR-0610138: "Geochemical Consequences of Melt Channelization: Exploring New Models for U-Series Variability", P Kelemen, M Spiegelman PI's, \$154,980
- 2004-05 NSF EAR-0409092, 0512369 "Collaborative Research: Volatiles in Aleutian-Alaska Arc Magmas", E Hauri (CIW DTM) P Kelemen, T Plank (Boston U) PI's, \$48,447 to WHOI and Columbia
- 2004-11 NSF OCE-0405572, 0520378, 0539118; "Collaborative Research: Seismic of Magma Flux, Arc Composition, and Lower-Plate Serpentinization in the Central American Subduction Factory"; S. Holbrook, lead PI; co-PI's P. Kelemen, D. Lizarralde; approx. \$60,000 to WHOI and Columbia
- 2004-09 NSF OCE0-0426160, 0520391: "Accomplishment Based Renewal: Comparing the Thermal Histories of Fast- and Slow-Spreading Oceanic Crust", P. Kelemen, \$162,820 to WHOI and Columbia
- 2004-07 NSF EAR-0337677: "Rhenium-Osmium Isotope and Platinum Group Element Systematics of Lower Oceanic Crust", P Kelemen, B Peucker-Ehrenbrink, \$299,725
- 2004-05 UAF 04-0117: University of Alaska subcontract to WHOI (now LDEO) as part of NOAA prime award to the University of Alaska: Primitive Plutonism in an Island Arc: A Study of Deep Submarine Canyons in the Western Aleutians, Kelemen PI, about \$10,000
- 2004-05 Texas A&M Task #F001831: Thermobarometry of Samples from ODP Leg 209; about \$30,000
- 2004-05 NSF OCE 0242233; 0533226 "Collaborative Research: Primitive Magmatism and Crustal Genesis in an Island Arc", P Kelemen, G Yogodzinski (U S Carolina), \$101,536 to WHOI and Columbia
- 2003-05 NSF OCE-0327588: Localization of Melt Transport at Mid-Ocean Ridges, P Kelemen, L Montesi, \$147,738
- 2002-04 ODP grant for Kelemen's stipend & support as Co-Chief Scientist, ODP Leg 209
- 2002-03 Deep Ocean Exploration Institute (WHOI) grant: "Morphology of fluid flow channels in reactive porous media", Kelemen, Whitehead, Braun, Bradley
- 2002-04 NSF OCE-0137327, "Collaborative Research: Geochemical Consequences of Melt Channeling: Exploring a New Class of Models for Geochemical Variability", P Kelemen, M Spiegelman (Columbia), \$19,391 to WHOI
- 2002-04 NSF EAR-0125919, "Convection of the Mantle Wedge in Subduction Zones", P.Kelemen, G Hirth PI's, \$99,971
- 2001-04 NSF 0115433: "Support of a National Ion Microprobe Facility at Woods Hole Oceanographic Institution", N Shimizu, G Layne, P Kelemen PI's, \$268,682
- 2001-03 NSF OCE-0118572, "Detailed Study of Focused Melt Transport in the Upper Mantle Section of the Oman Ophiolite", P Kelemen, G Hirth PI's, \$134,265
- 2001-03 NSF EAR-0087706, "Tectonic Consequences of Lower Crustal Convective Instability", M Jull, P Kelemen PI's, \$58,055
- 2000-06 NSF EAR-9910899: Continental Dynamics Program, "Constraints on the Genesis of Continental Crust via Arc Magmatism: Geology, Geochemistry, Structure and Physical Properties of the Talkeetna Arc Crustal Section, South Central Alaska", P Kelemen, PI; S DeBari (WWU), N Christensen (U Wisconsin), T Pavlis (U New Orleans), R. Coleman (Stanford), S Hart, G Hirth, B Hacker (UCSB), J Mattinson (UCSB), co-PI's, \$1,840,627
- 2001-04 NSF 9904400: "Support of a National Ion Microprobe Facility at Woods Hole Oceanographic Institution", N Shimizu, G Layne, P Kelemen PI's, \$184,259

- 1999-03 NSF OCE-9819666: "Melt extraction and crustal accretion at mid-ocean ridges: Continued study of the mantle and lower crust in the Oman ophiolite", P Kelemen PI, \$115,341
- 1999-01 Mellon Independent Study Award (WHOI), "Thermodynamics of Fluid Flow in the Earth ", Peter Kelemen
- 1999-00 NSF EAR-9814632: "The genesis of ultra-depleted mantle peridotites in continental upper mantle", P Kelemen PI, \$180,000
- 1998-00 NSF OCE-9731136: "ODP Site Survey via Shinkai 6500 submersible and geophysical observations: JAMSTEC/WHOI expedition to the Mid-Atlantic Ridge from 14° to 16°N, P Kelemen PI, \$125,000
- 1997-99 NSF OCE-9711170: "Constraints on the accretion of lower oceanic crust: A quantitative textural and geochemical study of gabbros from the Oman ophiolite and mid-ocean ridges", P Kelemen, G Hirth, \$140,814
- 1996-00 NSF EAR-9628749: "Support of a National Ion Microprobe Facility at Woods Hole Oceanographic Institution", N Shimizu, G Layne, P Kelemen PI's, \$174,742
- 1996-99 NSF OCE-9530307, "Causes and consequences of flow organization during melt transport", PI: Marc Spiegelman; WHOI subcontract PI: Peter Kelemen.
- 1996-98 NSF EAR-9419240, "Regional variability in primitive Aleutian magmas and implications for processes in the mantle wedge: ... an ion microprobe and isotopic study", P Kelemen, G Yogodzinski (U S Carolina) PI's, \$75,000 to WHOI
- 1996-98 NSF OCE-9416631, "Deep Structure of a Hotspot Influenced Rifted Volcanic Margin: A Joint U.S.- Danish Seismic Experiment off SE Greenland", S Holbrook, R Detrick, P Kelemen G Kent PI's, \$386,393
- 1996-97 Mellon Independent Study Award (WHOI), "Development of low-altitude, aerial photo mosaic technique and measurement of size-frequency distribution of melt flow channels in the upper mantle", Peter Kelemen & Greg Hirth
- 1995-99 NSF OCE-9416616, "Melt extraction and crustal accretion at mid-ocean ridges: Collaborative study of the mantle and lower crust in the Oman ophiolite", P Kelemen, N Shimizu, \$124,999
- 1995-98 NSF EAR-9418228: "Mapping of Textural, Modal and Compositional Variations in the Shallow Mantle: Implications for the Dynamics of Melt Flow and Segregation", P Kelemen PI, \$156,200
- 1994-97 NSF OCE-9314013 "Fluid flow in partially soluble porous media: Experimental and theoretical study of melt extraction from the mantle beneath mid-ocean ridges", P Kelemen, J Whitehead, \$90,000
- 1994 NSF INT-9313822, "US-France Cooperative Research: Integrated studies of oceanic spreading centers of the Oman ophiolite", N Shimizu, P Kelemen PI's, \$18,000
- 1993-96 NSF OCE-9305508: "Support of a regional ion-microprobe facility at Woods Hole Oceanographic Institution", N Shimizu, P Kelemen
- 1992-93 Mellon Independent Study Award (WHOI), "Evolution of volcanic rifted continental margins"; W. Steven Holbrook & Peter Kelemen
- 1993-95 NSF OCE-9217556 "A Study of a Mid-Atlantic Ridge Harzburgite-Dunite Complex at 15 Degrees 15' North", H Dick, P Kelemen PI's, \$200,000
- 1991-93 NSF EAR-9018482, "Parental Magmas and Magmatic Fluids of the Lilloise Intrusion, East Greenland, and their Possible Relation to the Iceland Hotspot", P Kelemen, M Kurz PI's, \$100,000
- 1990-92 Mellon Independent Study Award (WHOI), "Experimental investigation of the effects of H<sub>2</sub>O on phase equilibria and trace element partitioning in the upper mantle", Peter Kelemen



- 1990-93 NSF EAR-9005306, "Field and Laboratory Study of Discordant Dunite in Alpine Peridotite: Melt-Rock Interaction During Magma Transport in the Shallow Mantle", P Kelemen, H Dick PI's, \$165,000
- 1986-88 Wrote proposal for NSF EAR-8600534, "Assimilation of ultramafic rock in fractionating magma", Mark Ghiorso & Bernard Evans, NSF Petrology & Geochemistry
- 1986-87 Achievement Rewards for College Scientists, dissertation support grant.
- 1985-86 David A. Johnston Memorial Fellowship, Dept. of Geological Sciences, University of Washington.
- 1983-84 Chevron Scholarship.
- 1983 GSA Penrose Grant for geologic field work: Outstanding Mention.
- 1983 Sigma-Xi Grant-in-Aid for geologic field work.
- 1982-85 University of Washington Department of Geological Sciences Corporation Fund Grants, '82, '83, '85.
- 1980-81 Reynolds Fellowship for Foreign Study, Dartmouth College, shared with Mark Sonnenfeld (Dartmouth '80): geologic mapping, NW Himalaya, India
- 1977 Explorer's Club of North America Grant: Oxygen isotope fractionation as a function of altitude, Cordillera Blanca, Peru.

#### Patents

US Patent Application 61/673,825: Reaction driven cracking for unconventional hydrocarbon extraction, geothermal power generation, and geological capture and storage of carbon dioxide, Peter B. Kelemen, Heather Savage, Theodore A. Koczynski and Columbia University

US Patent Application 13/383,082: Systems and methods for enhancing rates of carbonation of peridotite, Peter B. Kelemen, Jürg M. Matter, and Columbia University

#### Editorial

- 2009-10 Editor, Special Lherzolite Volume of Journal of Petrology
- 2001 Editor, Current Research on the Oman Ophiolite, special collection G-cubed
- 2000-04 Associate Editor, G-cubed
- 1999-2000 Editor, Special Lherzolite Volume of Journal of Petrology
- 1996-1999 Editorial Board, Geology
- 1995-96 Editor, Special Lherzolite Volume of Chemical Geology

#### PUBLICATIONS

##### Editor

Menzies, M., **P. Kelemen**, H. Dick, J.-L. Bodinier, F. Boudier, G. Hirth, T. Grove, A. Tommasi and E. Takazawa, Shallow mantle composition and dynamics: Fifth International Orogenic Lherzolite, Conference, *J. Petrol.* 51, 570 pp., 2010. DOI: 10.1093/petrology/egp098

**Kelemen, P.B.**, Kikawa, E., and Miller, D.J. (Eds.), *Proc. ODP, Sci. Results*, 209 : College Station, TX (ODP), doi:10.2973/odp.proc.sr.209.001.2007.

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