October, 2015

Roberta L. Rudnick

Until 12/31/15:
Department of Geology
University of Maryland
College Park, MD 20742, U.S.A.
email: rudnick@umd.edu

After 1/1/16:
Department of Earth Sciences
University of California
Santa Barbara, CA U.S.A.
email: rudnick@geol.ucsb.edu

Education

PhD	1988	The Research School of Earth Sciences, Aust. Nat. Univ., Australia
M.S.	1983	Sul Ross State University, Alpine, TX, U.S.A. (Geology)
B.S.	1980	Portland State University, Portland, OR, U.S.A. (Earth Sciences)

Professional Employment

2016	Professor, Dept. Earth Sciences, UC Santa Barbara
2011-2015	Chair, Department of Geology, University of Maryland
2011-present	Visiting Professor, China University of Geosciences, Wuhan, China
2010-2015	Distinguished University Professor, University of Maryland
2011-2013	Oliver Visiting Professor, Dept. Earth & Atm. Sciences, Cornell Univ.
2010-2011	Visiting Professor, University of Dar es Salaam, Tanzania
2000-2010	Professor, University of Maryland
4/2000	Professor, Harvard University
1997-2000	Associate Professor, Harvard University
1994-1997	Assistant Professor, Harvard University
1989-1994	Research Fellow, R.S.E.S., The Australian National University
1987-89	von Humboldt Fellow, Max-Planck-Inst. für Chemie, Mainz, Germany

Research Interests

My research focuses on the origin and evolution of the continents, particularly the lower continental crust and the underlying mantle lithosphere. Emphasis is placed on integration of data from a wide diversity of sources, including petrography, petrology, major and trace element geochemistry, isotope geochemistry, and geophysics in order to determine the bulk composition of the crust, the processes that have influenced its composition through time, and why the Earth has continents. I have also been investigating the lithium isotope system as a tool for tracing fluid flow, continental weathering and crustal recycling.

Professional Society Memberships

American Association for the Advancement of Science, American Geophysical Union, Association of Women Geoscientists, Geochemical Society, Geological Society of America, Geological Society of Washington, Mineralogical Society of America

Awards and Honors

Dorr Lecture, University of Michigan, 2015
Crowell Distinguished Lecture, UC Santa Barbara, 2014
Mindlin Lecture, University of Washington, 2014
Eldridge Moores Lecture, Univ. California, Davis, 2012
Dana Medal, Mineralogical Society of America, 2012
Elected as Foreign Member of the Chinese Academy of Sciences, 2012
Elected to the American Academy of Arts and Sciences, 2011
Jack E. Oliver Visiting Professorship, Cornell, University, 2011-2013
Bownocker Lecturer, University of Ohio, November, 2011
Elected to the U.S. National Academy of Sciences, 2010
Fulbright Fellowship for visit to the University of Dar-es-Salaam, Tanzania, 2010-2011
Elected Fellow of the American Association for the Advancement of Science, 2009
Elected Fellow of the Geochemical Soc. and European Assoc. Geochemistry, 2008
Distinguished Alumna, Sul Ross State University, 2008
N.L. Bowen award, VGP Section of the American Geophysical Union, 2006
Daly Lecturer, VGP Section of the American Geophysical Union, 2006
Elected Fellow of the American Geophysical Union, 2005
Ingerson Lecturer, 2004, Geochemical Society at the Geological Society of America Annual Meeting
Elected Fellow of the Geological Society of America, 2003
Elected Fellow of the Mineralogical Society of America, 2001
Mineralogical Society of America Distinguished Lecturer, 2001-2002
Alexander von Humboldt Fellowship, Max Planck Inst. für Chemie, 1987-1989
Graduate Fellowship, National Science Foundation, 1981-1984
Visiting Graduate Fellowship, Lunar and Planet. Inst., Houston, TX, 1983
Penrose Grant, Geological Society of America, 1981

Editorial Responsibilities

Editor "The Crust", Volume 4 of the Treatise on Geochemistry, Second Edition, Elsevier, 2014
Editor-in-chief of *Chemical Geology*, 2000-2010
International Editor, *Journal of China University of Geosciences*, 2003-present
Guest editor, with Eizo Nakamura, Lithium Isotope Geochemistry, Special issue of *Chemical Geology*, 2004.
Editor "The Crust", Volume 3 of the Treatise on Geochemistry, Elsevier, 2003
Associate Editor, *G-cubed*, 2000-2003
Editorial Board of *Chemical Geology*, 1999-2000
Associate Editor, *Journal of Geophysical Research*, 1998-2000
Editorial Board of *Precambrian Research*, 1996-2001
Editorial Board of *Geology*, 1991-1996
Guest editor for Taylor colloquium issue of *Geochimica et Cosmochimica Acta,* 1991

Professional Service

Awards Committees

Stanley Miller Medal, National Academy of Sciences, 2015

Early Career Award, MPGV Division, Geological Society of America 2014-present
Vetlesen Prize Committee, Columbia University, 2014
Arthur L. Day Prize and Lectureship, National Academy of Sciences, 2013
Day Medal Committee, GSA, 2013-2016
Hess Medal Committee, AGU, 2010-2012
Bowen Award Committee, AGU, 2009-2011
Union Fellows Committee, American Geophysical Union, 2006-2009
Geochemical Society/European Association of Geochemistry fellows committee, 2003-2004 (chair in 2004), 2008-2010 (Chair in 2010)
Mineralogical Society of America Dana Medal Committee (Chair) 2008
Mineralogical Society of America Roebling Medal Committee (Chair) 2007
Mineralogical Society of America Research grants committee, Chair, 2005-2006
Mineralogical Society of America Award committee, 2004-2007
Bucher Medal committee, American Geophysical Union, 2000-2003, Chair, 2003-2005

External Review Committees

Earth Research Institute, University of California at Santa Barbara, Chair (2014)
Department of Earth Sciences, University of Toronto (2013)
Department of Geosciences, University of Massachusetts at Amherst (2012)
Department of Atmospheric, Oceanic and Earth Sciences, George Mason Univ. (2012)
Research School of Earth Sciences, ANU, Earth Chemistry review committee, Chair (2009)
Department of Geosciences, University of Arizona review committee, Chair (2007)
Department of Geological Sciences, University of Florida review committee (2006)

Advisory Committees and Panels

Co-chair, Committee of Visitors, N.S.F. Instrumentation and Facilities Program, 2013
N.S.F. Advisory Committee for Geosciences (AC-GEO), 2011-2013
International Advisory Committee for Kimberlite Conferences, 1995-present
Evaluation Committee, Institute of Studies of the Earth's Interior, Centre of Excellence-21, Okayama Univ., Misasa, Japan, 2003-2008
Member, National Research Council Committee on Grand Research Questions in Earth Science, 2005-2007
Search committee for new curator, Smithsonian Institution, 2005-2006
EarthScope Science and Education Committee, N.S.F., Vice-Chair: 2002-2004, Chair, 2005
N.S.F. Panel Review of EarthScope Project Execution Plan, 2004
N.S.F. Continental Dynamics Panel, 2000-2005
N.S.F. Post-Doc Panel in Earth Science, 1998

Professional Society Committees and Offices

Chair, Gordon Research Conference Interior of the Earth (shallow Earth), 2019
Co-Chair, Gordon Research Conference Interior of the Earth (deep Earth), 2017
Program Committee, Goldschmidt 2016, Yokohama, Japan, 2015
Union Medal and Awards Nomination Committee, VGP Section, American Geophysical Union, 2013-2014
At large member for Class 1, Class Membership Committee, National Academy of Sciences, 2013-2015
Temporary Nominating Group, Class 1, National Academy of Sciences, 2011-2014

Awards Nomination Committee, Geochemical Society, 2011-2012, Chair 2012
Councilor, Mineralogical Society of America, 2005-2008
Electorate Nominating Committee of the Section on Geology and Geography of the American Association of the Advancement of Science, 2004-2006
SAMPLES working group, Integrated Solid Earth Sciences (ISES) initiative, 2003
International Goldschmidt Program Committee, 2002-2003, 2005-2007
Chair, VGP nominations committee, American Geophysical Union, 2003, and 2012-14
Board of Directors, Geochemical Society, 2001-2003
VGP nominations committee, American Geophysical Union, 2001
Committee on committees, Mineralogical Society of America, 2001
Steering committee for USArray initiative, EarthScope, 1999-2003
Nominations committee, Geochemical Society, 1995-1997, Chair, 1998

Education

CIDER instructor, 2011, 2013

Public Outreach

Script reviewer for NOVA episodes, May, 2015.
Interview by Julia Rosen for article on water and granites for *Nautilus*, June, 2015

University Service

President's "2020 commission" on the budget, 2015
Panelist for discussion of "An Experiment", a play by Jennifer Barclay, UMD theater professor, on intrinsic bias in science, February, 2015
Selection Committee for Distinguished University Professors, 2014-present, Chair, 2015
Advisory Council, Distinguished University Professors 2013-2015
President's Honors and Prizes Committee, 2012-present
Appointments, Promotion and Tenure Senate Task Force 2013-2014
Panelist at ADVANCE promotion and tenure workshops 2012-2015
Search committee for Associate Provost for Academic Affairs, 2012
Vice-Chair, Provost Search Committee, 2011-2012
Chair, University Distinguished Dissertation Award Committee, 2011-2012
Provost's post-tenure review taskforce, 2008-2009
University appointments, promotion and tenure (APT) committee, 2005-2007; Chair, 2008
CMPS Dean review committee, 2003
Core Curriculum Review committee 9/00-6/01

College Service

Earth System Science Interdisciplinary Center Faculty Search Committee for Junior Faculty Position, 2009-2010.
Earth System Science Interdisciplinary Center Faculty Search Committee for CIRUN Director, 2009
College of Computer, Mathematical and Physical Sciences (CMPS) Dean's review committee for UMIACS permanent appointments, Chair, 2009
CMPS Awards Committee, 2006-2007
CMPS Appointments, promotion and tenure (APT) committee, 2001-2003

CMPS Strategic Plan Advisory Committee 2001

Departmental Service

Chair, 2011-2015
Chair, awards committee, 2003-2011
Chair, scholarship committee, 2003-2011
Faculty search committees: 2004, 2005, 2006
Graduate committee, 2000-2002; 2004-2006
Development of departmental brochure

Invited Keynote Lectures (past five years)

"Removal of lithospheric mantle beneath the North China Craton: when, where and how?" Keynote Lecture, Italian Society of Mineralogy and Petrology Annual Meeting, Ferrara, Italy, September, 2010.

"Age and formation of lithosphere beneath the North China Craton: Re-Os isotope evidence" Shen-su Sun Symposium, Beijing, China, October, 2010.

"A tale of two cratons" GAC-MAC Plenary Lecture, May, 2011.

"The composition of the continental crust and why it's important" INSTOC Symposium on Origin and Evolution of the Continents, Cornell University, September, 2011.

"Craton Formation" Dana Medal Lecture, Montreal Goldschmidt Meeting, June, 2012.

"Glacial diamictites and the evolving composition of the upper continental crust", S.R. Taylor Planetary Crusts Workshop, Research School of Earth Sciences, Canberra, A.C.T. Australia, May 2015.

"The Rise of Atmospheric Oxygen: An 'Inside Job', or Not?" Gordon Research Conference, June, 2015.

Public Lectures

"Plate tectonics overview" invited presentation at the "Tsunami science and technology forum" held at the University of Maryland, College Park, February 10, 2005.

"Geology, tsunamis and humans: understanding our planet" invited talk given to the American Association of University Women, College Park branch, February 12, 2005.

"The origin and evolution of the continents" invited lecture at the Bruce Museum of Arts and Science, Greenwich, CT, January, 2008.

"Where are the women? Reflections on the leaky pipeline", Virginia Tech, April, 2014.

"How to make continents", Mindlin Lecture, University of Washington, May, 2014.

Departmental Colloquia (last few years)

2015: SUNY Stony Brook; Brown University; Nanjing University; University of Science and Technology of China, Hefei; China University of Geosciences, Wuhan; Arizona State University School of Earth and Space Sciences; Laboratory for Physical Sciences, Univ. Maryland College Park; Smithsonian Institution, Minerals Science Department; University of Michigan Dorr Lecture, NASA Goddard Space Flight Center.

2014: Univ. California Santa Barbara; University of Washington; Virginia Tech; University of Alberta.

2013: University of Oregon; Cornell University; University of Rochester; Wits University, Johannesburg, South Africa; Ludwig Maxmillan University, Münich.

Courses Taught

Harvard

EPS 6: Introduction to Environmental Science: the solid Earth (with J. Tromp; Fall semester, 1996; 1997)
EPS 7: Introduction to Earth Sciences (with A. Dziewonski; Fall semester, 1998, 1999)
EPS 40: The Chemical Evolution of the Earth (with S. Jacobsen; Fall semester, 1995, 1996, 1997)
EPS 47: Introduction to Geochemistry (with D. Schrag; Fall semester, 1998)
EPS 151: Introduction to Igneous and Metamorphic Petrology (Spring semester, 1996, 1997)
EPS 247: Origin and Evolution of the Continents (Spring semester, 1995, 1998)
Freshman Seminar: Planetary Geology (Fall semester, 1995, 1999)

Maryland

GEOL 100 & 110 Physical Geology (lecture and lab) (Fall semester, 2004)
GEOL 394 Research Problems in Geology (individual research)(Fall semester, 2005)
GEOL 445 Principles of Geochemistry (Fall semester, 2000-2005)
GEOL 445 High Temperature Geochemistry (Fall semester, 2006-2009; 2011-2015)
GEOL 443 Igneous and Metamorphic Petrology (with R.J. Walker, Spring semester, 2001-2010)
GEOL 489J/789J Origin and Evolution of the Continents (Fall semester, 2002, 2003)
GEOL 489I/789I Origin and Evolution of the Continents (Spring semester, 2009)
GEOL 489H Honors seminar (Spring, 2006)

University of Dar es Salaam

GY229 Geochemistry (with Dr. Shukrani Manya, Winter, 2010)

Graduate Students Supervised

Present:

Allison Greaney, PhD

Kang Chen (visiting PhD student from China Univ. Geosciences, Wuhan)
Su Li, PhD (visiting PhD student from China Petroleum University)
Ming Tang, PhD (co-supervised with W.F. McDonough)

Past

PhD

Matthias Barth (PhD 2001, Harvard University), thesis topic: Geochemistry of Xenolithic Eclogites from the Man Shield, west Africa, Current Position: Private Industry, Switzerland.

Cin-Ty Lee (PhD 2001, Harvard University), Os isotopic investigations of lithospheric mantle stability, southwestern U.S.A. Current Position: Professor, Rice University.

Fang-zhen Teng (PhD 2005, UMD) (co-supervised with W.F. McDonough), Lithium isotopic composition of the crust. Current Position: Associate Professor, University of Washington.

Lin Qiu (PhD 2011, UMD) (co-supervised with W.F. McDonough), Lithium and δ^7Li behavior during metamorphic dehydration processes and crustal evolution. Current position: climate change consultant, China.

Jingao Liu (PhD 2011, UMD) (co-supervised with R.J. Walker), Creation and destruction of lithospheric mantle beneath the North China Craton. Current position: post-doc University of Alberta.

Xiaoming Liu (PhD 2013, UMD) (co-supervised with W.F. McDonough), Tracing continental weathering using lithium and magnesium isotopes: insights from the chemical weathering of Columbia River Basalts and mass balance modeling. Current position: Assistant Professor at Univ. North Carolina, Chapel Hill.

Yu Huang (PhD 2013, UMD) (co-supervised with W.F. McDonough), Global and regional reference models for predicting the geoneutrino flux at SNO+, Sudbuy, Canada. Current position: Oil industry, Houston.

MS

Adam Mansur (M.S., 2008, UMD) Composition, age and origin of the lower crust in northern Tanzania. Current position: IT specialist, AMNH, Smithsonian Institution, Washington, D.C.

Xiaoming Liu (M.S., 2009, UMD) (co-supervised with S. Hier-Majumder) Advection-diffusion controlled lithium isotopic distribution in contact aureoles: a case study from the Florence County pegmatites, Wisconsin.

Kristy Long (M.S., 2013, UMD) (co-supervised with W.F. McDonough) Gold distribution in the Archean Tanzanian Craton: evaluating the effects of intracrustal differentiation.

Senior Theses

University of Maryland:

Dusty Aeiker, 2005-2006
Jon James, 2004-2005
Marc Lipella, 2004
Alycia Arroyo, 2000-2001

Others:

Joshua Gaal (UMD) honors project for GEOL445, 2015: Mo mass balance in an Archean granite
Will Junkin (UMD) honors project for GEOL445, 2013: Mo contents of sulfides in Archean tillites from the Mozaan Group, Pongola Supergroup, South Africa, PhD student, UC Santa Barbara
Elena Chung (UMD) honors project for GEOL445, 2006: Li isotopes in transect across the contact of a syenite-granite, Greenland
Heather Njo (UMD) 2003: research project on Li isotopes in a saprolite profile
Suzanne Edgecombe (co-supervised senior honours thesis, ANU, 1992) Staff scientist, Australia Geoscience, Canberra, Australia
Penny King (senior honours thesis, ANU, 1993) Senior Fellow, RSES, ANU
Alan Orpin (vacation scholar, 1990), Nat. Inst. Water & Atmos. Res., Wellington, N.Z.
Thomas Presper (co-supervised undergraduate scholar, MPI, 1989) Staff Scientist, Niedersächsisches Landesmuseum Hannover (Naturkunde - Abteilung)
Rebecca Sproule (vacation scholar, 1991) Minerals Industry, Australia
Kate Tomford (senior honors thesis, Harvard Univ., 1999) Sustainability Director, State of Illinois
Alain Trial (co-supervised summer intern, LPI, 1983) Distinguished Scientist, Kelly Techonology Group, Santa Barbara, CA

High School Students Mentored

Annie Kielman, Eleanor Roosevelt High School, Greenbelt, MD, Research Practicum 2005-2006

UMD Thesis Committees

Tracey Centorbi (MS candidate)
Nívea Magalhães (PhD candidate)
Huan Cui (PhD candidate)
Hailong Bai (PhD candidate)
Leigh Roble (MS, 2014)
Jeremy Bellucci (PhD, 2011)
Thomas Ireland (PhD, 2009)
Rachel Potter (MS, 2009)
Barry Reno (PhD, 2009)
Katherine Burgy (MS, 2009)
Elizabeth Brabson (MS, 2008)
Gwendolyn Rhodes (PhD, 2008)
Ruth Schulte (MS, 2007)
Amitava Gangopadhyay (PhD, 2004)
Karen Phemister (MS, 2004)
Mark Frank (PhD, 2001)
Allegra Small (MS, 2001)

Dean's Representative

Rachel Kuzio de Naray, Astronomy (PhD, 2007)

External PhD Committees

I have served on the examination committees of the following external PhD candidates (supervisors listed in parentheses):

Andrea Giuliani, 2013, University of Melbourne (Phillips & Kendrick)
Courtney Gregory, 2009, The Australian National University (Rubatto)
Mike Green, 2001, University of Sydney (Buick)
Joseph Pyle, 2001, Rensselaer Polytechnic Institute (Spear)
Mark Schmitz, 2001, Massachusetts Institute of Technology (Bowring)
Huai-Jen Yang, 1996, Massachusetts Institute of Technology (Frey)

Post-doctoral Research Associates

Deborah Hassler (NSF Post-doc, 1999-2001, Harvard University) Research topic: Platinum group element and Os isotopic composition of the oceanic mantle: a case study from the Oman ophiolite. Current position: Oil industry.

Thomas Zack (Feyodor Lynen Fellow, Alexander von Humboldt Society, 2000-2001, Univ. Maryland) Research topic: Boron and lithium geochemistry: tracking fluid flow in paleo subduction zones. Current position: Senior Lecturer, University of Gothenburg, Sweden

Sonja Aulbach (Feyodor Lynen Fellow, Alexander von Humboldt Society, 2005-2006, joint with W.F. McDonough) Research topic: Lithium isotope geochemistry of the mantle. Current Position: Lecturer, Univ. Frankfurt

Ralf Halama (Feodor Lynen Fellow, Alexander von Humboldt Society, 2005-2007, joint with W.F. McDonough) Research topic: Lithium isotope geochemistry of carbonatites and alkaline igneous rocks. Current position: Lecturer, Univ. Keele

Madalyn Blondes (2008-2010) Research topic: thermochronology of the lower crust in northern Tanzania. Current position: Research Geologist, United States Geological Survey

Richard Gaschnig (2011-2015) Research topic: refining estimates of the composition of the upper continental crust through studies of glacial tillite. Current position: post-doc, Georgia Tech

Tolulope Olugboji (2014-present, joint with Vedran Lekic and W.F. McDonough) Research topic: seismological investigations of the continental crust.

Faculty Mentor for

Sarah Penniston-Dorland, Asst. Professor, Dept. Geology, Univ. Maryland (2005-2011)
Laurent Montési, Asst. Professor, Dept. Geology, Univ. Maryland (2006-2011)
Marina Leite, Asst. Professor, Dept. Materials Science and Engineering (2014-present)

NSF Grants Awarded

EAR 9506510 $126,100 (to RLR), 1/1/96-12/31/98 "Collaborative Research: Growth and Modification of the Tanzanian Lithosphere", in collaboration with John Chesley, Univ. Arizona, Petrology and Geochemistry Panel

EAR 9711008 $150,000 , 7/1/97-6/30/00 "Technician Support: EPS-ICPMS Facility at Harvard", Instrumentation Panel (with W.F. McDonough, co-I)

EAR 9842891 $312,500, 3/15/98-2/29/00 "Acquisition of an Inductively Coupled Plasma Mass Spectrometer, UV Laser Lab and Microconcentric Nebulizer", Instrumentation Panel (with W.F. McDonough and D. Schrag, co-I's)

EAR 9804677, $146,000, 7/15/98-6/30/00 "The Role of Eclogites in the Growth of Archean Cratons: A Case Study From West Africa", Petrology and Geochemistry Panel

EAR 9903159, $169,007, 6/1/99-5/31/01 "Evolution of cratonic lithosphere in eastern China", Petrology and Geochemistry Panel (with S. Gao and W.F. McDonough, co-I's)

EAR 9909526 $89,899, 1/1/00-12/31/02 "A window into deep lithospheric processes of the western U.S. from Os investigations of mantle xenoliths", Petrology and Geochemistry Panel

OCE 0002587, $47,890, 7/1/00-6/30/01 "Os isotopic and platinum group element (PGE) geochemistry of oceanic mantle: a case study from the Oman ophiolite", Marine Geology and Geophysics Panel

EAR 0004128, $140,000, 7/1/01-6/30/02 "Technician Support", Instrumentation panel (with W.F. McDonough, co-I)

EAR 0004129, $187,000, 5/1/01- "Acquisition of an inductively coupled plasma mass spectrometer ", Instrumentation panel (W.F. McDonough PI)

EAR 0106719 $50,000, 7/24/01-7/23/02 "Lithium isotopic investigations of the crust and mantle", Petrology and Geochemistry Panel (W.F. McDonough and P. Tomascak, co-I's)

EAR 020812 $279,922, 6/30/02-5/31/05, $53,000 one-year extension, until 5/31/06 "Lithium isotopic investigations of the crust and mantle" (W.F. McDonough and P. Tomascak, co-I's), Petrology and Geochemistry Panel

EAR 0337255 $321,210, 1/1/04-12/31/06 "Lithospheric evolution in the Tanzanian craton and adjoining Mozambique belt, east Africa: perspectives from the lower crust", Petrology and Geochemistry Panel

EAR 0549300 $265,000, 1/1/06-12/31/07 "Acquistion of a state-of-the-art thermal ionization mass spectrometer", Instrumentation panel (R.J. Walker, PI)

EAR 0609641 $290,000 6/1/06-5/31/09 "Determining the processes responsible for lithium isotope fractionation" (W.F. McDonough, co-I), Petrology and Geochemistry Panel

EAR 0635671 $200,969 6/1/07-5/31/09 "Investigations of the timing and geometry of lithosphere removal beneath the North China Craton" (R.J. Walker, co-I), Petrology and Geochemistry Panel

EAR 0911096 $330,330 6/1/09-5/31/12 "PGE, Re-Os and Lu-Hf isotopic signature of lithospheric removal beneath the North China Craton" (R.J. Walker, co-I), Petrology and Geochemistry Panel

EAR 0948549 $446,182 3/1/10-2/28/13 "Lithium isotope investigations of crustal evolution" (W.F. McDonough, co-I), Petrology and Geochemistry Panel

EAR 1067983/10668097 $269,120 6/1/11-5/30/13 "Collaborative Research: Estimating the mantle contribution to the Geo-neutrino flux at the Sudbury Neutrino Observatory" (co-I, W.F. McDonough, PI), Cooperative Studies of the Earth's Deep Interior Panel.

EAR 1321954 $226,004 4/1/13-3/31/15 "Constraining the secular compositional evolution of the upper continental crust using ancient glacial deposits and creation of an upper crustal reference suite" (R. Gaschnig and W.F. McDonough, co-Is), Petrology and Geochemistry Panel.

EAR 133810 $4,999,530 9/1/13-8/31/18 "FESD Type I: The Dynamics of Earth System Oxygenation" (PI Ariel Anbar, ASU), UMD co-I's Kaufman, Puchtel and Rudnick, UMD portion $798,808, FESD Panel.

Other Funding

National Geographic Society Grant $16,300, 2005-2006, Fieldwork in Tanzania.

R.L. Rudnick -- Publications

Books

Committee on Grand Research Questions in the Solid-Earth Sciences* (2008) Origin and Evolution of Earth: Research Questions for a Changing Planet, National Research Council, 152 p. ISBN: 978-0-309-11717-3.

Edited Books

The Crust (2014), R.L. Rudnick, editor, Treatise on Geochemistry, Second Edition, Volume 4, (eds. H.D. Holland and K.K. Turekian), Elsevier-Pergamon, Oxford 805 p.

The Crust (2003), R.L. Rudnick, editor, Treatise on Geochemistry Volume 3, (eds. H.D. Holland and K.K. Turekian), Elsevier-Pergamon, Oxford, 683 p.

Peer Reviewed Papers and Chapters

**graduate student, ** undergraduate student, †post-doc.*

2016

117. Blondes†, M., **Rudnick, R.L.**, Ramezani, J., Bowring, S.A. and Piccoli, P.M. (2015) Thermal evolution of the deepest reaches of a continental collision: evidence from U-Pb dating of accessory phases from deep crustal xenoliths from the Pan-African Mozambique Belt, Northern Tanzania, *Contributions to Mineralogy and Petrology* (in revision).

2015

116. Gaschnig†, R.M., **Rudnick, R.L.**, McDonough, W.F., Kaufman, A.J., Valley, J., Hu, Z.-C. and Gao, S. (2015) Compositional evolution of the upper continental crust through time, as constrained by ancient glacial diamictites, *Geochimica et Cosmochimica Act*a (in review)

116. Chen*, K., Walker, R.J., Gao, S., **Rudnick, R.L**., Gaschnig†, R.M., Puchtel, I.S., Tang*, M. and Hu, Z. (2015) Platinum group element abundances and Re-Os isotope systematics of the upper continental crust through time: evidence from glacial diamictites, *Geochimica et Cosmochimica Acta* (in review).

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* Chaired by Don DePaolo, committee membership: T.E, Cerling, S.R. Hemming, A.H. Knoll, F.M. Richter, L.H. Royden, R.L. Rudnick, S.C. Solomon, L. Stixrude, J.S. Trefil

114. Li*, S., Gaschnig†, R.M. and **Rudnick, R.L.** (2015) Insights into chemical weathering of the upper continental crust from the geochemistry of ancient glacial diamictites, *Geochimica et Cosmochimica Act*a (in revision).

113. Sauzéat*, L., **Rudnick, R.L.**, Chauvel, C., Garçon, M. and Tang*, M. (2015) New perspectives on the Li isotopic composition of the upper continental crust and its weathering signature, *Earth and Planetary Science Letters* 428: 181-192.

112. Wang†, S.-J., Teng, F.-Z., **Rudnick, R.L.**, Li, S.-G. (2015) A recycled origin for cratonic eclogites: Magnesium isotope evidence in xenolithic eclogites from Sierra Leone, *Geology* (in press).

111. Day, J.M.D., Qiu*, L., Ash, R.D., McDonough, W.F., Teng, F.-Z., **Rudnick, R.L.** and Taylor, L.A. (2015) High temperature fractionation of Li isotopes in the Moon, *Geochimica et Cosmochimica Acta* (in review).

110. Tang*, M., McDonough, W.F. and **Rudnick, R.L.** (2015) Europium anomaly in the MORB source mantle, *Geochimica et Cosmochimica Acta* (in review).

109. Wang†, S.-J., Teng, F.-Z., **Rudnick, R.L.**, Li, S.-G. (2015) Magnesium isotope fractionation during diagenesis and low-grade metamorphism of mudrocks, *Geochimica et Cosmochimica Acta* 165: 435-448, http://dx.doi.org/10/1016/j.gca.2015.06.019.

108. Hui†, H.-J., Peslier, A.H., **Rudnick, R.L.**, Simonetti, A., Neal, C.R. (2015) Plume-cratonic lithosphere interaction recorded by water and other trace elements in peridotite xenoliths from the Labait volcano, Tanzania, *G-cubed* 16: 1687-1710.

107. Tang*, M., **Rudnick, R.L.**, McDonough, W.F., Huang, Y.* and Gaschnig†, R.M. (2015) Europium anomalies constrain recycling of lower continental crust, *Geology* 43: 703-706, doi:10.1130/G36641.1.

106. Liu*, J.-G., **Rudnick, R.L.**, Walker, R.J., Xu, W.-L., Gao, S. and Wu, F.-Y. (2015) Big insights from tiny peridotites: evidence for persistence of Precambrian lithosphere beneath the eastern North China Craton, *Tectonophysics* 650: 104-112, DOI: 10.1016/j.tecto.2014.05.009

105. Liu*, X.-M., Wanner, C., **Rudnick, R.L.** and McDonough, W.F. (2015) Processes controlling δ^7Li in rivers illuminated by study of streams and ground waters draining basalts, *Earth and Planetary Science Letters* 409: 212-224, DOI10.1016/j.epsl.2014.10.032.

104. Baptiste*, V., Vauchez, A., Tomassi, A., Demouchy, S., **Rudnick, R.L.** (2015) Deformation, hydration, and anisotropy of the lithospheric mantle beneath an active rift: constraints from mantle xenoliths from the North Tanzanian Divergence of the East African Rift, *Tectonophysics* 639: 34-55, doi:10.1016/j.tecto.2014.11.011.

2014

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