

KENNETH HOWARD RUBIN
 CURRICULUM VITAE – UHM Regents version
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BIOGRAPHICAL	Position (since 2007): Professor of Geochemistry and Volcanology Citizenship: United States of America Born: Sherman Oaks, California Home address: 2373 Hoomaha Way, Honolulu, HI 96822
EDUCATION	<i>All degrees from University of California, San Diego (UCSD)</i> B.A. Chemistry (Chemistry Department), June 1984 Undergrad. research topic: organo-metallic compounds of Mo (VI), Advisor: G. Schrauzer (<i>retired</i>) M.S. Oceanography (Scripps Institution of Oceanography), Dec. 1985 Research topic: O ₂ and supersaturation in central N. Pacific surface waters, Advisor: H. Craig (<i>deceased</i>) Ph.D. Earth Sciences (Scripps Institution of Oceanography), March 1991 Thesis: Timing, extent and sources of marine volcanism through U-series disequilibrium, Advisor: J. D. Macdougall (<i>retired</i>)
LABORATORIES	Director, SOEST Isotope Laboratory and MC-ICP-MS laboratory
INSTRUCTIONAL PORTFOLIO	ERTH425/SUST425 – Environmental Geochemistry, Spring semesters for >20 yrs, including '18, '19 '20 & '21. Course about impacts of human activities on Earth's surface environments, with a focus on chemical contaminants/pollutants, environmental toxicology, and remediation methods. Global and local phenomena are discussed. ERTH625 – Advanced Environmental Geochemistry, taught each Spring semester ('18, '19 '20 & '21). This is a graduate version of G425 ERTH607 – Submarine Volcanoes, taught intermittently (e.g., F16, F18, F20). Multidisciplinary approach to active submarine volcanism, focusing on geological, geochemical, geophysical, ecological and oceanographic observables. Lecture/seminar course where participants read and discuss papers. ERTH608 – Isotopes & Trace Elements (F21) - Lecture/seminar course on the principles of elemental and isotopic fractionation, and radioactive decays and ingrowth as displayed in Earth Materials, and their application to Earth Processes. ERTH 654 – Contaminant Hydrology. New Course/Co-taught F'20 w/H. Dulai & A. El Kadi GG325 – Geochemistry, taught 1995 – 2013, Fall semester, currently being taught by J. Konter since my 4 year stint as department chair (2014-18). Chemistry of the natural world and chemical evolution of Earth over geological time. Emphasis on how chemical principles are used to study Earth Sciences, in 3 modules: (a) geochemical fundamentals; (b) Earth's hydrosphere and interaction with surficial rocks, sediments, soils, the biosphere and the atmosphere and (c) the origin and evolution of Earth (crust-mantle-core) and the solar system through nuclear/high temperature processes.
OVERVIEW OF CURRENT RESEARCH TOPICS	geochemical, isotopic, and radionuclide investigations of active volcanic, tectonic, environmental and climatically driven processes and their rates <ul style="list-style-type: none"> • deep submarine volcanic eruptions and environmental impacts • Pleistocene and modern sea level history recorded by coral reefs • volcanology/petrology/chronology of active eruptions (on land and submarine) • metals/metalloid environmental chemistry, including depleted Uranium munitions • Geoinformatics and data science for Earth Sciences • Magma Generation and Time Scales

PROFESSIONAL EXPERIENCE

Dept. of Earth Sciences (aka Geology & Geophysics), Univ. of Hawaii except as noted
Jul. 2014-Jun. 2018: Department Chair
Jul. 2013-June 2014: Associate Dept. Chair
Jul. 2006-Jul 2010: Head, Volcanology, Geochemistry Petrology Division
May 2003-2008: Member Oregon State Univ, College of Ocean and Atmospheric Science graduate faculty
Jun. 2001-Jun 2007: Associate Professor
Jan. 1995-Jun 2001: Assistant Professor
Jul. 1995- present: Member, UH Graduate Faculty
Jan. 1999- present: Member, Global Environmental Science program (Oceanography Dept.) Faculty
Feb. 1994-Dec. 1994: Assistant Researcher
Feb. 1992-Jan. 1994: SOEST Young Investigator

Scripps Institution of Oceanography, Univ. Calif. San Diego
Mar. 1991-Jan. 1992: Postdoctoral Researcher
Sept. 1984-Mar. 1991: Research and Teaching Assistant (as a grad student)
Lawrence Livermore National Laboratory, Nuclear Chemistry Division
Nov. 1988-Nov. 1990: Visiting Student Researcher (Gamma Spectrometry and ICP-MS Laboratories)
Chemistry Dept., Univ. Calif. San Diego
June 1983-June 1984: UC President's Undergraduate Research Fellowship
Sept. 1982-Dec. 1984: Teaching Assistant (6 academic quarters)

HIGHLIGHTS OF PROFESSIONAL ACTIVITIES

- academic department chair for 4 years (2014-2018)
- Leadership Council Chair (2018-2020) and Science Committee Chair (2016-2018), NSF EarthCube (cyberinfrastructure for Earth Science)
- Co-lead organizer, 2020 Goldschmidt International Scientific Conference
- Geol. Soc. Amer. Fellow; frequent keynote speaker at international conferences
- Co-lead organizer, 2020 Goldschmidt International Scientific Conference
- NSF distinguished lecturer, 2011 (for Ridge 2000 program) – public and university presentations about submarine volcanoes.
- >3200 career citations; H index – 32 (ISI), 32 (Google Scholar)
<http://scholar.google.com/citations?user=l61EoR8AAAAJ&hl=en&oi=ao>
- ResearchGate RG Score 40.47 (97.5th percentile of researchers globally)
https://www.researchgate.net/profile/Ken_Rubin
- 63 publications; 11 in very high impact journals: Nature (8), Science (1), and Nature Geosciences (2). See www.soest.hawaii.edu/krubin/kenpubs.html
- Grantsmanship: \$7.6M from 36 research projects, primarily from US National Science Foundation, 26 of them with Rubin as lead PI
- Teaching: Upper division undergraduate courses in geochemistry and environmental geochemistry; graduate course in marine volcanology
- 20+ graduate students advised.
- 26 sea-going expeditions (5 as chief scientist) and land-based field programs in Iceland, Mexico and Hawaii.
- G-cubed Assoc. editor (since 2010); Frequent NSF Panelist (>10 times since 2000)
- IEDA (Integrated Earth Data Applications) User Committee Inaugural Member – oversight of NSF facility at Lamont-Doherty Earth Observatory. from 2011
- NSF-Ridge2000 steering comm. member from 2008 & executive comm. from 2009
- Chair, Integration and Synthesis Oversight Committee, East Pacific Rise study integrated area, Ridge2000 program, 2007-2009
- Scientific consultant to the US Army on environmental radioactivity (2007-2010)
- Co-Wrote Encyclopedia of Earth (UC Press, 2009) and Wrote Earthquakes and Volcanoes children's book (Weldon-Owen, 2007)
- Significant Public Outreach and distance learning via the Internet
- Pedagogy, content consultant on junior/senior high school texts for publishers HR.W., Scholastic, Capstone, professional texts for Blackwell and Elsevier

PROFESSIONAL MEMBERSHIPS (since year)	American Geophysical Union (1987), Geological Society of America (1992), Geochemical Society (1997), Hawaii Center for Volcanology (1992), American Association for the Advancement of Science (2004), International Assn of Volcanology & Chemistry of Earth's interior (2006), American Chemical Society (1994-2005), Hawaiian Academy of Sciences (1997-2005), Sigma Xi (2020)
AWARDS, HONORS AND RECOGNITION	<p><i>Professional</i></p> <ul style="list-style-type: none"> • Invited Speaker, Chapman Conference on Submarine volcanism, (Feb 2017). • Fellow, Geological Society of America (2012) • Keynote Speaker, 34th Internat. Geological Congress (IGC), Brisbane, AU (2012) • Ridge 2000 Distinguished lecturer (Jan-Dec 2011) • Keynote Speaker, Goldschmidt Conference, Prague, Czech Republic (2011) • Keynote Speaker 32nd IGC, Florence, Italy (2004) • Keynote Speaker 31st IGC, Rio de Janeiro, Brazil (2000) • SOEST/University of Hawaii Young Investigator Award (1992) • UC President's Undergraduate Research Fellowship (1983) <p><i>Outreach</i></p> <ul style="list-style-type: none"> • 13 awards for excellence for ASK-AN-EARTH-SCIENTIST, Hawaii Center for Volcanology Web and the SOEST websites.

A. RESEARCH:

CONTRACTS AND GRANTS SUMMARY - full list on page 11

- Principal funding source: US National Science Foundation, Geo Directorate
- Topics: Most projects are in “volcanology” and/or “mantle geochemistry”, with smaller amounts of funding for various marine sciences or environmental topics related to coastal, fisheries, sea water chemistry, and soil contamination.
- Types of research:
 - Geochemical laboratory projects (e.g., in the SOEST isotope Lab)
 - field investigations at sea and on land (especially Iceland, Mexico and Hawaii)
 - data/process modeling
 - instrumentation acquisition/methods development
- Number of extramural projects funded since 1994: 26 as Project Director (PD), 8 as Co-PI
- Since 1994: \$5.6M total (\$5.5 M as PD, \$2.1M as Co-PI)

PUBLICATIONS SUMMARY – full list on page 6 and <http://www.soest.hawaii.edu/krubin/kenpubs.html>

- 63 Peer-reviewed Articles, 2 books, multiple other reports
- Very High impact journal publishing: e.g., 8 papers in Nature, 3 in Nature Geoscience, 1 in Science, 10 in EPSL
- 158 Conference abstracts
- H index – 32
- Google Scholar: **3200** citations total, >1000 in last 5 full yrs (2016-2020), <https://scholar.google.com/citations?user=l61EoR8AAAAJ&hl=en&oi=ao>
- ResearchGate **2928** (only includes citations in on the RG platform); https://www.researchgate.net/profile/Ken_Rubin
- Web of Science/Publons: 2217 (incomplete list because of broken website)

EXPERTISE

SCIENCE DISCIPLINES: 1) volcanology; 2) geochemistry; 3) coastal geology; 4) environmental chemistry; 5) oceanography 6) data science

ANALYTICAL: 1) Thermal Ionization and Inductively-Coupled Plasma mass spectrometry, 2) Nuclear geochemistry/spectrometry, 3) novel methods development for transuranic and daughter element/isotope analysis 4) mineralogic separations by density and magnetic methods, 3) Application of analytical inorganic chemistry to geological problems and trace analysis procedures.

RADIO-ISOTOPE EXPERIENCE: 1) 25 yrs experience working with transuranics and daughters for tracer studies and assays, including natural ²³⁸U, ²³⁵U and ²³²Th chain nuclides, and synthetic or enriched Th, U, Ra, Np, Pa, Pb and Po isotopes, 2) handling solid, aqueous and gaseous (²²²Rn) forms,

3) analysis by alpha, gamma and mass spectrometry, liquid and gas scintillation, 4) Radioactive materials training at UCSD, Lawrence Livermore National Laboratory, and UH, 5) member UH Radiation Safety Committee since 2000.

COMPUTERS: Supervisor of multi-platform department computer rooms for 5 years (Wintel, Linux, SunOS, Mac), html and cgi scripting, Webmaster, site maintenance, site security, common aps power user, PC/MAC hardware maintenance.

FIELD EXCURSIONS

Studies at sea [my role in brackets]:

1. KM2106, May-June 2021, ROV Luukai dives, geological investigation of the Kaiwi shelf volcanism and coral reefs (between Oahu and Molokai), R/V Kilo Moana [*scientist*]
2. SO 263, June 2018 Quest 4000 ROV dives, Lau Basin(Bremen Quest vehicle) geological/hydrothermal/ biological observations, water column chemistry and mapping on R/V Sonne [*scientist*]
3. SOI 2017 UnderwaterFire expedition in Tonga on R/V Falkor to study submarine volcanoes. 2 legs, 10 days and 21 days respectively [*chief scientist*]
4. SOI 2017 SeaLevelSecrets expedition in Hawaii and Line Islands to study coral reefs and sea level rise, 2 legs, 12 days and 17 days respectively [*chief scientist*]
5. MBARI 2016, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits, August 2016 [*scientist*].
6. MBARI 2015, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].
7. HURL 2014 field season, 5 Submersible Dives with Pisces V, R/V KOK, Nov. 2014, exploring shoreline feature at 700m depth off Makapuu, Oahu and Last glacial maximum coral reefs at Penguin Banks, Hawaii [*chief scientist*]
8. MBARI 2014, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].
9. R/V Kilo Moana, 2014– New ROV Lu'ukai field trials – first science dives, Hawaii, Jan 2014 [*scientist*]
10. MBARI 2013, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].
11. HURL 2013 field season, 2 Submersible Dives with Pisces V HOV and towed LRT system – Aug 2013, exploration and sampling of last glacial maximum and deglacial coral reefs at Koko Head, Oahu [*chief scientist*]
12. HURL 2012 field season, 1 Submersible Dive with Pisces V, R/V KOK – Dec 2012, exploration and sampling of potential 1400m deep paleo shoreline off of Barber's Point, Oahu [*scientist*]
13. NE Lau 2012, NE Lau basin, ROV geological/hydrothermal/biological observations, water column chemistry and mapping expedition on R/V Revelle, Sept 2012 [*scientist, leading volcanic rock sampling operations*]
14. NE Lau 2011, NE Lau basin, AUV, camera sled, dredging expedition on R/V Kilo Moana, Nov 2011 [*scientist leading dredge operations*]
15. NE Lau 2010-2, NE Lau basin dredging expedition on R/V Kilo Moana, Dec 2010 [Chief Scientist]
16. HURL 2010 field season, 2 submersible dives and ROV operations exploring last glacial maximum coral reefs at Penguin Banks, Hawaii, Oct 2010 [*Chief Scientist*]
17. NE Lau 2010. NE Lau basin multi-disciplinary volcanologica/oceanographic expedition on R/V Kilo Moana, May 2010 [*co-lead investigator for camera sled operations*]
18. GRUVEE 2010, Galapagos Spreading Center expedition, Alvin submersible diving from R/V Atlantis, March-April 2010. [*CoPI*]
19. NELRC 2009, NE Lau Eruption Response Cruise, on R/V Thompson – April-May 2009 multi-disciplinary rapid response ROV exploration and sampling of active volcanic sites in the NE Lau Basin. Chief Sci: Joe Resing (NOAA), [*Project co-PI, shipboard lead for petrology/volcanology*]
20. HURL 2006 field season, 3 Submersible Dives with Pisces V, R/V KOK - Sept 2006, exploration and sampling of potential LGM shorelines in Hawaii, Chief Sci: Chip Fletcher [*CoPI*]

21. RESET06 rapid response cruise to EPR ISS eruption site R/V Atlantis - Jun-Jul 2006, Submersible Dives with the ALVIN submersible, night camera sled program, Chief Sci: Karen Von Damm [CoPI]
22. HURL 2004 field season, 1 Submersible Dives with Pisces V, R/V KOK - Sept 2004, exploration and sampling of potential LGM shorelines in Hawaii, Chief Sci: Chip Fletcher [CoPI]
23. STOWA Expedition, R/V Atlantis - JAn-Mar 1999 lava flow mapping, sampling with the ALVIN submersible, associated night sampling programs, and DSL120 (16°-19°S EPR). [CoPI]
24. HURL 1998 field season Submersible Dives with Pisces V, R/V KOK - Sept 1998 - exploration, sampling southwest rift zone of Mauna Loa. [CoPI]
25. Gloria Leg 8, R/V Melville - "MOAI expedition" (UH), May-July, 1993 - rock dredging, East Pacific Rise off-axis seamounts, 16°-19°S (Chief Scientists: J. Sinton & R. Batiza) [scientistf].
26. Roundabout expedition Legs 14 & 15, R/V Thomas Washington (SIO) Jan-Mar 1989 (Chief Scientist: J.Hawkins) seismic reflection, SeaBeam mapping, dredging in Lau Backarc Basin. [scientistf]
27. Alcyone expedition, R/V Melville (SIO) Aug, 1985 (Chief Scientist: H. Craig) - Water column geochemistry of NW Pacific, geology, outer Hawaiian Islands [scientistf]

Studies on land:

1. Volcanological/geochemical/lava sampling field studies: Eastern Volcanic Zone, Iceland (Aug 2008), Krafla and Askja volcanoes, Iceland (July-Sep 2002), Koko Rift Zone, Oahu, Hawaii (2001 to 2002), Torfajokul volcano, Iceland, Fall, 2001, Paricutin & El Jorullo volcano, Michoacan, Mexico (2001)
2. Icelandic Rift Zones Field demonstration for US Mid-ocean ridge researchers, (1999)
3. Field studies of fossiliferous conglomerates on Lana'i, Hawai'i (multiple trips 1994-2001).
4. Monitoring/Sampling active eruption of Kilauea volcano, with M. Garcia, 1992 - May 1998.
5. Mapping/Sampling of post-erosional dikes with M. Garcia, Island of Kauai, April 1993
6. Mapping/Sampling of lava flows and dikes with H. West, Mauna Lei Valley, Lana'i, August 1992.

B. TEACHING:

Courses at Univ. of Hawaii:

- ~50 courses taught since joining the UH teaching faculty in 1995.
- Course development in Geochemistry and Environmental Geochemistry. I remain the principal instructor for these courses in the UH Department of Geology and Geophysics.
- New graduate courses developed and taught: Submarine Volcanology, Holocene/Pleistocene Geochronology, and Global Biogeochemistry/Climate Change
- Course Evaluations by Students: routinely A-/B+

One-to-one Mentoring:

- Postdoctoral scholars: 7 multi-year postdocs supported.
- Graduate students: member of 19 graduate student committees, committee chair/co-chair on 5.
- Undergraduate student supervision: 1 Undergraduate honors thesis since program initiation in 2008, 10 Lab Assistants, 6 department computer and web site helpers.
- Visiting graduate students: 8 non-committee graduate students (mostly international) have worked in my laboratory under my supervision.

Other Educational Activities

- C content, pedagogy, age appropriateness, and standards adherence consultant for various primary and secondary school texts and books for publishers Holt/HR.W., Scholastic, and Capstone (March 1996 through April 2011) on a wide range of topics in the Earth, Ocean and Environmental Sciences (see titles under "reviewing")
- Author, articles for Worldbook Encyclopedia "Hotspot" (2002, updated 2008), "Geochemistry" (2008) and "Rock Cycle" (2012)

C. SERVICE

Scientific community

- Chair, NSF Earth Cube Leadership Council, since 2018
- Chair, NSF Earth Cube Science Committee, since 2016

- Proposal Review Panelist NSF 7 times since 2013, 14 times total (since 2000), NOAA 1 time (2010)
- Associate Editor, G-cubed (since 2010)
- Member, EarthCube Science Committee, 2014-present, Chair of 2 working groups and member of several others.
- Emcee, EarthCube All Hands Meeting May 2015, Arlington, VA, June 2016, Denver, CO
- Inaugural Member, User Committee, NSF Integrated Earth Data Applications facility at Lamont-Doherty Earth Observatory (2011 – 2016)
- Member, Ridge2000 steering committee (2008-2011) and Executive Comm. (2009 – 2011)
- Member, Time Critical Studies sub-com. of Ridge2000 steering committee (2005-2011)
- Member, AGU-VGP Section Executive Committee, 1996-1997
- Organizer, of three 100+ participant, NSF-sponsored workshops on interdisciplinary spreading center since (since 2008)
- Participant, in 8 other Marine and Terrestrial Geosciences workshops, Penrose conferences, Chapman conferences, etc., (since 1998)
- Frequent Session Chair/Convener at international symposia
- Reviewing - Journal Article Reviews - >110 journal manuscripts, >150 research proposals (*in addition to those reviewed for panels*), 49 Book Chapters (4 technical, 40 Secondary School texts, 4 Primary School texts, 3 popular press science books for children)

University Service

- Univ. of Hawaii, Dept. of Geology and Geophysics, Department Chair, 2014 to present;
- Univ. of Hawaii, Dept. of Geology and Geophysics, Graduate Program ,Chair, 2014 to present;
- Associate Department Chair, 2013-2014
- Long list of committee memberships, chairmanships at department and University level.
- Spearheading of multiple special efforts (such as the Geology and Geophysics promotional video in 2014, the 10 year Strategic Plan in 2007, and Department/School websites (since 1994)
- Univ. of Hawaii Volcanology, Geochemistry, Petrology Research Division head for 3 years

Service to the General Community At-Large

- Prepared general-audience documents for US Army distribution in Hawaii explaining the causes and consequences of depleted Uranium munitions contamination in the Islands.
- Frequent Hawaii State science fair judge
- Frequent interviewee on research and general science subjects for a variety media outlets
- Two large general-audience websites authored (~300 pages), both receiving ~1 Million page views per year since the late 1990s (Hawaii Center for Volcanology and Ask-an-Earth-Scientist)

PUBLICATIONS

In-review

- Arran P. Murch, Ryan A. Portner, **Ken H. Rubin**, David A. Clague (2021) Deep-subaqueous implosive volcanism at West Mata seamount, Tonga, Earth. Planet sci. Lett., in review.
- Mitchell, S., Hudak, M. Bindeman, I. Carey, R. McIntosh, I. Houghton, B. **Rubin, K.**(2021) Isotopic signatures of 1 magmatic fluids and seawater within silicic submarine volcanic deposits, Geochimica et Cosmochimica Acta, Submitted May 2021, in review

Peer-reviewed Articles (most recent first)

- Anderson MO, Norris-Julseth C, **Rubin KH**, Haase K, Hannington MD, Baxter AT and Stewart MS (2021) Geologic and Structural Evolution of the NE Lau Basin, Tonga: Morphotectonic Analysis and Classification of Structures Using Shallow Seismicity. Front. Earth Sci. 9:665185. doi: 10.3389/feart.2021.665185.
- Falkenberg, Jan, Keith, Manuel, Haase, Karsten M, Bach, Wolfgang, Klemd, Reiner, Strauss, Harald, Yeo, Isobel A, **Rubin, Kenneth H**, Anderson, Melissa O (2021) Effects of fluid boiling on Au and volatile element enrichment in submarine arc-related hydrothermal systems, Niua South, Tonga arc, Geochimica et Cosmochimica Acta 307 (2021) 105–132. Doi: 10.1016/j.gca.2021.05.047
- Chadwick, W.W, **Rubin, K.H.**, Merle, S.G., Bobbitt, A.M., Kwasnitschka, T., Embley, R.W. (2019) Recent Eruptions Between 2012 and 2018 Discovered at West Mata Submarine Volcano (NE Lau Basin, SW Pacific) and Characterized by New Ship, AUV, and ROV Data, Frontiers in Marine Science 6, article 495, pp25. DOI: 10.3389/fmars.2019.00495
- Graham, David W., Michael, Peter J., **Rubin, Ken H.** (2018) An investigation of mid-ocean ridge degassing using He, CO₂, and δ¹³C variations during the 2005-06 eruption at 9°50'N on the East Pacific Rise, Earth Planet. Sci. Letters, 504, 84-93. DOI: 10.1016/j.epsl.2018.09.040.
- Clague, David, Paduan, Jennifer, Dreyer, Brian, Chadwick, William. **Rubin, Kenneth**, Perfit, Michael, Fundis, Allison (2018) Chemical Variations in the 1998, 2011, and 2015 Lava Flows from Axial Seamount, Juan de Fuca Ridge: Cooling During Ascent, Lateral Transport, and Flow, Geochemistry, Geophysics, Geosystems, 19, 2915–2933. <https://doi.org/10.1029/2018GC007708>.
- Embley, Robert W. **Rubin, Kenneth H.**, Extensive Young Silicic Volcanism Produces Large Deep Submarine Lava Flows in the NE Lau Basin, Bulletin of Volcanology (2018) **80**:36, pp23 <https://doi.org/10.1007/s00445-018-1211-7>. <http://rdcu.be/JffP>
- Butler, Rhett, Burney, David A., **Rubin, Kenneth H.**, and David Walsh (2017) The Orphan Sanriku Tsunami of 1586: New Evidence from Coral Dating on Kaua'i, Natural Hazards, DOI: 10.1007/s11069-017-2902-7.
- Dutton, A., Rubin, K.H., McLean, N, Bowring, Bard, J. E., Edwards, R.L., Henderson, G.M., Reid, M.R., Richards, D.A., Sims, K.W.W., Walker, J.D., Yokoyama Y. (2017) Data reporting standards for publication of U-series data for geochronology and timescale assessment in the earth sciences, Quaternary Geochronology **39**, 42-149, DOI: 10.1016/j.quageo.2017.03.001
- Shorttle, Oliver, Rudge, John F, Maclennan, John, Rubin, Ken H (2016) A Statistical description of concurrent mixing and crystallisation during MORB differentiation: Implications for trace element enrichment, J. Petrology, **57** (11-12): 2127-2162. doi: 10.1093/petrology/egw056
- Colman, Alice, Sinton, John, **Rubin, Ken** (2015) Magmatic Processes at Variable Magma Supply Along the Galápagos Spreading Center: Constraints from Individual Eruptive Units, Journal of Petrology, **57(5)**, 981-1018, doi: 10.1093/petrology/egw032.
- Zellmer, GF, **K. H. Rubin**, CA Miller, JG Shellnutt, A Belousov, M Belousova (2015) Resolving discordant U-Th-Ra ages: constraints on petrogenetic processes of recent effusive eruptions at Tatun Volcano Group, northern Taiwan, In: Caricchi, L. & Blundy, J. D. (eds) Chemical, Physical and Temporal Evolution of Magmatic Systems. Geological Society, London, Special Publications, 422, DOI: 10.1144/SP422.3
- Lupton, John, **Rubin, Ken H.**, Arculus, Richard, Lilley, Marvin, Butterfield, David, Resing, Joseph, Baker, Edward, Embley R., 2015. Helium Isotope, C/3He, and Ba-Nb-Ti Signatures in the Northern Lau Basin: Distinguishing Arc, Back-arc, and Hotspot Affinities, Geochem. Geophys. Geosys., **16**, 1133–1155, DOI: 10.1002/2014GC005625.

- Rubin K. H.** (2014) Mid-Ocean Ridge Magmatism and Volcanism. In: Harff J., Meschede M., Petersen S., Thiede J. (Ed.) *Encyclopedia of Marine Geosciences*. Springer-Verlag Berlin Heidelberg. DOI 10.1007/978-94-007-6644-0_28-3 pp 21.
- Embley, R.W., S.G. Merle, E.T. Baker, **K. H. Rubin**, J.E. Lupton, JA Resing, R.P. Dziak, M.D. Lilley, W.W. Chadwick Jr., T. Shank, R. Greene, S.L. Walker, J. Haxel, E. Olson and T. Baumberger (2014), Eruptive modes and hiatus of volcanism at West Mata seamount, NE Lau basin: 1996-2012, *Geochemistry, Geophysics, Geosystems*, **15**, 4093-4115, DOI: 10.1002/2014GC005387
- T. McClinton, S. M. White, A. Colman, **K. H. Rubin**, J. M. Sinton (2014) The role of crystallinity and viscosity in the formation of submarine lava flow morphology. *Bull. Volc.* **76**, 854, pp13. DOI: 10.1007/s00445-014-0854-2.
- Bowles, J. A., A. Colman, J. T. McClinton, J. M. Sinton, S. M. White, and **K. H. Rubin** (2014), Eruptive timing and 200 year episodicity at 92°W on the hot spot-influenced Galapagos Spreading Center derived from geomagnetic paleointensity, *Geochem. Geophys. Geosyst.*, **15**, 2211–2224, doi:10.1002/2014GC005315.
- Sherman, C.E., Fletcher, C.H., **Rubin, K. H.**, Simmons, K.R. and H. Adey, W.H. (2014) Sea-level and reef accretion history of marine isotope stage 7 and late stage 5 based on age and facies of submerged late Pleistocene reefs, Oahu, Hawaii, *Quaternary Research*, **81**, 138-150. DOI: 10.1016/j.yqres.2013.11.001.
- K. H. Rubin**, S. A., Soule, W. W., Chadwick, D. J. Fornari, D. S., Clague, R.W. Embley, E. T. Baker, M. R. Perfit, D. W. Caress R. P. Dziak. (2012) Volcanic Eruptions in the Deep Sea, *Oceanography* **25**, 142–157, <http://dx.doi.org/10.5670/oceanog.2012.12>.
- E.T. Baker, W. W. Chadwick, J.P. Cowen, R. P. Dziak, **K. H. Rubin**, D. J. Fornari (2012) Hydrothermal discharge during submarine eruptions: The importance of detection, response, and new technology, *Oceanography*, **25**, 128–141, <http://dx.doi.org/10.5670/oceanog.2012.11>.
- Colman, A, Sinton, J.M., White, S. M., McClinton, J.T., Bowles, JA, **Rubin, K. H.**, Behn, M.D., Cushman, B., Eason, D.E., Gregg, TKP, Grönvold, K., Hidalgo, S., Howell, J., Neill, O., Russo, C. (2012) Effects of variable magma supply on mid-ocean ridge eruptions: Constraints from mapped lava flow fields along the Galápagos Spreading Center *Geochem. Geophys. Geosyst.*, **13**, Q08014, <http://dx.doi.org/10.1029/2012GC004163>
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Reports and articles, Not peer reviewed

- Emma L. Aronson, Sky Bristol, Ann Bryant Burgess, V. Chandrasekar, Hilary Close, Tony van Eyken, Vicki Ferrini, Basil Gomez, Danie Kinkade, Anna Kelbert, Raleigh L. Martin, Kathleen Ritterbush, **Ken H Rubin**, Andreas Schmittner, Stephen Slota, D. Sarah Stamps, Karen Stocks, Mimi W. Tzeng, Peter Wiebe, Elisha Wood-Charlson, [*alphabetica*] (2015), Geoscience 2020: Cyberinfrastructure to reveal the past,

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John L. Butler, Craig Kastle, **Ken Rubin**, Donna Kline, Henk Heijnis, Larry Jacobson, Allen Andrews, W. Waldo Wakefield. 1995. Age determination of shortspine thornyhead, *Sebastolobus alascanus*, using otolith sections and ^{210}Pb : ^{226}Ra ratios. NOAA Admin. Rep.

Books

M Allaby, R Coenraads, S Hutchinson, K McGhee, J O'Byrne, **K Rubin** (alphabetical), *Encyclopedia of Earth*, The University of California Press (2008). pp608 (*this book is targeted as "general reference"*)

K. H. Rubin (2007) *Volcanoes and Earthquakes*, Insiders Series, The Five Mile Press PTY, Ltd, Sydney Australia, pp64 (*this book is targeted to Middle Schoolers*)

Abstracts 158 total through Dec. 2019

Awards Received - Contracts And Grants (Apr 2020 update)

Summary - Dollar Amounts since '92						
Total with Rubin as Project Director (PD)				\$5,554,573	\$214K/yr	
Total with Rubin as Co-PI				\$2,058,718		
Overall Total				\$7,613,291	\$293K/yr	
Projects List	Investigators	Agency/ Number	Amount	start mo/yr	end mo/yr	
Rubin as Project Director – Extramural						
1	RAPID: Tracking magmatic and volcanic changes in the May 2018 Kilauea Eruption	Rubin, Garcia, Hammer, Shea	NSF-EAR 1838502	\$119,821	Jun-18	May-21
2	Volcanic Fire in the Tongan Sea: a multidisciplinary study of submarine volcanoes, hydrothermal activity and benthic ecology in Earth's highest density, recently active, volcanic province	Rubin, W. Chadwick, D. Butterfield, J. Resing	SOI-FK171117	\$990,000	Aug-18	Aug-18
3	Ice Age Coral Reefs of the Central Pacific and their Records of Dramatic Sea Level Change	Rubin, Fletcher, White	SOI-FK08517	\$909,000	Nov-19	Nov-19
4	RAPID - High precision radiometric dating of Axial Seamount 2015 eruption products with 210Po-210Pb	Rubin	NSF-OCE 1602194	\$49,841	11/15	10/17 (1 yr NCE)
5	Temporal/spatial scales of mantle wedge composition and processes investigated with young boninites and basalts from the unusually active NE Lau Basin	Rubin , Hellebrand, Konter	NSF-OCE 1538121	\$275379	8/15	7/20
6	CIF21 DIBBs: Collaborative Research: Cyberinfrastructure for Interpreting and Archiving U-series Geochronologic Data	Rubin	Coll. Charles - NSF-ACD subaward	\$75736	9/14	8/19 (2 yr NCE)
7	SOEST Isotope Laboratory Solicitation Response for the NOAA Statement of Work/Specification for the Radiological Analysis of 226Ra and 210Pb in Fish Otoliths (plus 2 nd and 3 rd year renewals)	Rubin , Pyle	NOAA JB133F10SE3679 & WE133F11SE1945 & 3 rd yr (direct payment thru JIMAR)	\$93000	09/10	09/13
8	RREADI3- TCS Eruption dating readiness and decadal magmatic timing studies for the EPR ISS	Rubin	NSF-OCE 0937409	\$124653	09/09	08/14
9	Effect of Melt Supply on MORB Compositions at Local and Regional Scales	Rubin Sinton	NSF-OCE 0933884	\$356,191	09/09	08/13
10	Technician Support for a new multi-collector ICP-MS facility for Terrestrial and Marine Geochemical Research	Rubin , Ravizza, Mahoney	NSF-EAR 0841797	\$60000	04/09	03/11
11	Collaborative Research: Rapid Response to a Submarine Eruption at W. Mata Volcano	Rubin , Cowen	NSF-OCE 0929881	\$95484	04/09	03/11
12	Rates, Sources and Magmagenesis of Alkalic Lavas at the Edge of an Intraplate Hotspot: A Multi-tracer Study of the Youngest Volcanics on Oahu, Hawaii	Rubin , Pyle	NSF-EAR 0838271	\$297682	01/09	12/13
13	Sources of Radiation in the Hawaiian Islands with Emphasis on Naturally Occurring and DU Uranium Isotopes	Rubin	US Army (NDCEE-071000340)	\$16700	08/07	05/09
14	SGER: Detailed Lava Surface Age Map and Pre-eruptive Magma Aging for the 2005-6 Volcanic Eruption at 9° 46'-9° 56'N EPR	Rubin	NSF-OCE 0732761	\$88002	07/07	05/09
15	SGER: High Resolution Lava Surface Dating and Mapping for a 2005-6 volcanic event in the 8-11 N EPR ISS	Rubin	NSF-OCE 0636439	\$37516	07/06	12/07
16	Acquisition of a multi-collector ICP-MS for Marine and Terrestrial Geochemical Research	Rubin , Ravizza, Mahoney, Pyle, DeCarlo	NSF-EAR 0549618 (OCE share)	\$700000	03/06	02/10
17	SGER: a novel approach to evaluate hydrothermal fluid interaction with injected magma dykes at mid-ocean ridges using radium isotopes	Rubin	U. Miami - NSF-OCE subaward	\$12000	1/06	12/07
18	Collab. Research: A Uranium-Series and Hafnium Isotope Investigation of the Link Between Partial Melting and Mantle Heterogeneity Beneath the Southeast Indian Ridge.	Rubin	NSF-OCE 0221069	\$186607	10/02	9/07

Awards Received -- Continued

19	The Timing and Nature of Volcanological Processes as Captured by Bimodal Composition Eruptions	Rubin	NSF-EAR 0106463	\$207501	7/01	6/04
20	Recent Ridge Eruptive Activity Dating and Investigations: lava geochronology and mantle melting - "RREADI-2" Project	Rubin	NSF-OCE 9905463	\$246530	9/99	9/04
21	Recent Ridge Eruptive Activity Dating and Investigations (the "RREADI" Project)	Rubin	NSF-OCE 9633268	\$95610	12/96	11/98
23	U-Th-Ra isotope systematics of the historical lavas of Kilauea volcano, Hawaii	Rubin, Garcia	NSF-EAR 9628288	\$135000	6/96	5/98
24	Developing an internal isochron U- and Th-series disequilibrium technique for dating MORB and other submarine lavas with TIMS.	Rubin, Mahoney, Spencer	NSF-OCE 9413315	\$46674	9/94	8/95
25	Acquisition of a high abundance sensitivity thermal ionization mass spectrometer	Rubin, Mahoney, Sinton, Batiza, Garcia	NSF-OCE 9314503	\$155713	2/94	1/95
26	Acquisition of a high abundance sensitivity thermal ionization mass spectrometer. (different proposal from above)	Rubin, Mahoney, Garcia, Self, Sinton	NSF-EAR 9302846	\$155713	12/93	11/95

Rubin as PD- Intramural (University Research Council Seed Money Program)

1	A Novel Approach to Age Determinations of Geologically Recent (<100,000 Years Old) Volcanic Eruption Deposits Using Th-U Isotopes in Associated Fossils	Rubin	UH-URC	\$11000	5/01	5/02
2	Th-U dating of Hawaiian corals by thermal ionization mass spectrometry and the local record of sea level fluctuations over the past 150,000 yrs.	Rubin	UH-URC	\$13220	1/94	12/94

Rubin as Co-PI - Extramural (Project Director listed first under "Investigators")

1	Collab. Research: Volcanic Eruptions on the Galapagos Spreading Center: Effect of Variable Magma Supply on Eruption and Magma Chamber Processes on Mid-Ocean Ridges	Sinton, Rubin	NSF-OCE 0849813	\$449,168	9/09	8/13
2	Collab. Research: Integrated Petrological, Geophysical & Numerical Modeling Constraints on Crustal & Mantle Processes along the GSC	Sinton, Rubin, Mahoney, Ito	NSF-OCE 0327051	\$316877	01/04	12/07
3	Volcanic Eruptions on Mid-Ocean Ridges: Insights into Axial Magma Chamber Processes	Sinton, Rubin	NSF-OCE 0241578	\$198205	8/03	7/06
4	Acquisition of a high resolution, sector field, ICP-MS and laser ablation system	Ravizza Rubin, DeCarlo, Mahoney, Garcia	NSF-EAR 0215297	\$313040	9/02	8/04
5	Field demonstration of Icelandic Rift Zones for U.S. Mid-ocean ridge researchers	Sinton, Rubin	NSF-INT 9910570	\$30800	9/99	8/00
6	Volcanological Investigations of a Superfast-Spreading Mid-Ocean Ridge	Sinton, Rubin, Batiza	NSF-OCE 9633398	\$472701	9/98	8/04
7	Fine-scale magmatic processes at superfast spreading: EPR 17°-19°S.	Sinton, Rubin, Batiza	NSF-OCE 9415989	\$102452	11/95	10/97
8	Acquisition of ICP-MS for Research in Ocean and Earth Sciences	Batiza, Rubin, Measures DeCarlo, West	NSF-OCE and - EAR 9401738 and 9401770	\$100475 and \$75000	12/94 and 12/94	11/95 and 11/96

TEACHING

Courses at UH (descriptions follow table):

Semester/ Year	Number	Course Title	Credit Hrs	Students
Spring 2020	GG425	Environmental Geochemistry	3	6
	GG625	Advanced Environmental Geochemistry	3	3
Fall 2019		<i>sabbatical</i>		
Spring 2019	GG425	Environmental Geochemistry	3	8
	GG625	Advanced Environmental Geochemistry	3	5
Fall 2018	GG607	Submarine Volcanoes	3	10
Spring 2018	GG425	Environmental Geochemistry	3	9
	GG625	Advanced Environmental Geochemistry	3	1
Spring 2018	GG625	Adv. Environmental Geochemistry	3	1
Fall 2017	GG614	Advanced Field Study	var	2
Spring 2017	GG425	Environmental Geochemistry	3	5
Spring 2017	GG625	Adv. Environmental Geochemistry	3	1
Fall 2016	GG607	Submarine Volcanoes	3	3
Spring 2016	GG425	Environmental Geochemistry	3	7
Fall 2015		<i>Dept. chair/teaching release</i>		
Spring 2015	GG425	Environmental Geochemistry	3	15
Fall 2014		<i>Dept. chair/teaching release</i>		
Spring 2014		<i>Dept. chair/teaching release</i>		
Fall 2013	GG325	Geochemistry	3	5
Spring 2013	GG425	Environmental Geochemistry	3	2
Fall 2012	GG325	Geochemistry	3	10
Spring 2012	GG425	Environmental Geochemistry	3	6
Spring 2012	GG612	Accelerated Intro to Geology II (3 weeks of team taught course)	3*	3
Spring 2012	GG399	Geochemistry (as independent reading)	3	1
Fall 2011	GG711	Special Topics in G&G: Deep Submarine Eruptions	3	5
Fall 2011	GG399	Directed Reading – Global biogeochemistry of climate and oceans	3	1
Spring 2011	Off	Sabbatical- in the UK		
Fall 2010	Off	Sabbatical - at sea for part of semester		
Spring 2010	Off	at sea March through May		
Fall 2009	GG325	Geochemistry	3	7
Spring 2009	GG499	Senior Research - WI	4	1
Fall 2008	Off	off		
Spring 2008	GG425	Environmental Geochemistry	3	6
Fall 2007	GG325	Fundamentals of Geochemistry	3	5
Spring 2007	GG711	Special Topics in G&G: Deep Submarine Eruptions	3	6
Fall 2006	GG425	Environmental Geochemistry	3	6
Fall 2005	GG399	Fundamentals of Geochemistry –directed reading	3	1
Spring 2005	Off	off		
Fall 2004	GG425	Environmental Geochemistry	3	7
Spring 2004	GG325	Fundamentals of Geochemistry	3	9
Fall 2003	(GG425)	sabbatical	3***	6
Spring 2003	GG325	Fundamentals of Geochemistry	3	15
Fall 2002	GG425	Environmental Geochemistry	3	4
Spring 2002	GG325	Fundamentals of Geochemistry	3	6
Fall 2001	GG425	Environmental Geochemistry	3	7
Spring 2001	GG325 - WI	Fundamentals of Geochemistry	3	10
Fall 2000	GG425	Environmental Geochemistry	3	7
Spring 2000	GG325	Fundamentals of Geochemistry	3	7
Fall 1999†	(GG101)	Dynamic Earth	3**	~75
Spring 1999	- at sea-			
Fall 1998	GG324	Low Temperature and Environmental Geochemistry	3	5

Spring 1998	GG711	Special Topics in G&G: Holocene and Quaternary Geochronology	3	
Fall 1997	GG324	Low Temperature and Environmental Geochemistry	3	7
Fall 1997	GG699	Directed Research	2	1
Spring 1997	GG735	Seminar in Geochemistry	2	1
Fall 1996	GG324	Low Temperature and Environmental Geochemistry	3	5
Spring 1996	GG612	Accelerated Intro to Geology II	3*	1
Spring 1996	GG425	Geochemistry	3	4
Spring 1996	GG399	Directed Reading	3	1
Fall 1995	GG710	Graduate Seminar: Dating Quaternary Events	2	9
Fall 1995	GG611	Accelerated Intro to Geology I	3*	3
Spring 1995	GG425	Geochemistry	3	6

Notes: (WI) writing intensive course

(*) GG611 and 612 are team taught. In 2012 I taught 3 weeks. In 1995/96 I coordinated these courses and gave 20-25% of the lectures

(**) My participation in GG101 was limited to 3 lectures. F. Duennebier was the lead instructor.

(***) My participation in GG425 was limited to 4 lectures. G Ravizza was the lead instructor.

(†) Did not teach my own course this semester; department chair granted release time .

Course Descriptions:

Environmental Geochemistry: Upper-division introduction to geochemical processes in the hydrosphere/atmosphere, biological cycles, stable and radiogenic isotope geochemistry, inorganic, organic, and radioactive contaminants in natural systems. Course number changed in 2000, with added emphasis on anthropogenic forcing of natural environments; course name changed in 2000

Advanced Environmental Geochemistry: Graduate version of 425

Submarine Volcanoes: Seminar course on submarine volcanism focused on current scientific literature, background literature, and group discussions.

Geochemistry: introduction to high and low temperature geochemistry, stable and radiogenic isotope geochemistry. Course number changed in 1996; name changed in 2009.

Directed Reading: U-series Disequilibrium (1 student)

Accelerated Intro to Geology I and II: Beginning Graduate-level course for entering students without traditional Geology background

Graduate Seminar: literature reading and discussion

Seminar in Geochemistry: Global Climate Change using Internet resources to gather/present data

Course Evaluations

The Geology and Geophysics Department uses a standardized evaluation form. Student responses to questions 17 questions regarding Course and Instructor Quality are graded on an A-F scale. My Course evaluations on average (averaged first by course and then between courses) are a A-/B+.