

# KENNETH HOWARD RUBIN

## CURRICULUM VITAE

Updated Jan. 2019

<b>ADDRESS</b>	Department of Earth Sciences (formerly Geology and Geophysics) School of Ocean & Earth Science & Technology 1680 East West Rd, University of Hawaii, Honolulu, HI 96822 808-956-8973 (w), 808-956-5512 (f) email: <a href="mailto:krubin@hawaii.edu">krubin@hawaii.edu</a> - web: <a href="http://www.soest.hawaii.edu/krubin">http://www.soest.hawaii.edu/krubin</a> twitter: <a href="https://twitter.com/kenhrubin">https://twitter.com/kenhrubin</a> - ResearchGate: <a href="http://www.researchgate.net/profile/Ken_Rubin">www.researchgate.net/profile/Ken_Rubin</a>
<b>BIOGRAPHICAL DATA</b>	Position: Professor of Geochemistry and Volcanology Citizenship: United States of America Born: Sherman Oaks, California Home address: 2373 Hoomaha Way, Honolulu, HI 96822
<b>EDUCATION</b>	<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 <sub>2</sub> 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> )
<b>LABORATORIES</b>	Director, SOEST Isotope Laboratory and multi-collector plasma mass spectrometry laboratory
<b>PROFESSIONAL EXPERIENCE</b>	Dept. of Geology and Geophysics, University of Hawaii except where noted Jul. 2007-present: Professor 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)
- NSF EarthCube program, Participant (2013-present), Leadership Council Chair (current) and Science Committee Chair (2016-2017); details in "SERVICE" below.
- GSA Fellow
- NSF distinguished lecturer, 2011 (for Ridge 2000 program) – public and university presentations about submarine volcanoes.
- >30000 career citations; H index – 32 (ISI), 32 (Google Scholar)  
<http://scholar.google.com/citations?user=l61EoR8AAAAJ&hl=en&oi=ao>
- ResearchGate RG Score 40.4 (97.5<sup>th</sup> percentile of researchers globally)  
[https://www.researchgate.net/profile/Ken\\_Rubin](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](http://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 if current)*

Amer. Geophysical Union (1987); Geological Society of America (1992); Geochemical Society (1997); Hawaii Center for Volcanology (1992); Amer. 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). Amer. Institute professional Geologists (2017)

**OVERVIEW OF CURRENT RESEARCH and TEACHING TOPICS**

In general: geochemical, isotopic, and radionuclide investigations of active volcanic, tectonic, environmental and climatic processes and rates; Geoinformatics; Topics:

- deep submarine volcanic eruptions and environmental impacts
- volcanology/petrology of rift zone eruptions (on land and submarine)
- field studies on land (Iceland, Mexico, Hawaii) and at sea (including 12 manned submersible programs in Hawaii and the eastern Pacific).
- metals/metalloid environmental chemistry, including depleted Uranium munitions
- data science and digital workflows
- university level teaching since 1995: courses in Geo/Marine Chemistry, Environmental Chemistry, Quaternary Geochronology; Submarine Volcanology

**AWARDS, HONORS AND RECOGNITION**

*Professional*

- Fellow, Geological Society of America (2012)
- Keynote Speaker, 34<sup>th</sup>, 32<sup>nd</sup> and 31<sup>st</sup> International Geological Congresses (IGC), Brisbane, AU (2012), Florence, Italy (2004), Rio de Janeiro, Brazil (2000)
- NSF-Ridge 2000 Distinguished lecturer (Jan-Dec 2011)
- Keynote Speaker, Goldschmidt Conferences, Prague (2011) & Sacramento (2014)
- SOEST/University of Hawaii Young Investigator Award (1992)

*Outreach*

- Extensive Broadcast media experience, Media outreach coordination, 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 10**

- 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: 27 as Project Director (PD), 8 as Co-PI
- Since 1994: \$7.6M total (\$5.6 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
- Very High impact journal publishing: e.g., 8 papers in Nature, 3 in Nature Geoscience, 1 in Science, 10 in EPSL
- 142 Conference abstracts
- H index – 32
- ISI Citation index (excluding self-citations): 2900 total, 1300 in last 5 full yrs (2013-2017).
- Google Scholar: 2900 citations total

## **EXPERTISE**

SCIENCE DISCIPLINES: 1) volcanology; 2) geochemistry; 3) sea level and coastal geology; 4) environmental chemistry; 5) 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  $^{238}\text{U}$ ,  $^{235}\text{U}$  and  $^{232}\text{Th}$  chain nuclides, and synthetic or enriched Th, U, Ra, Np, Pa, Pb and Po isotopes, 2) handling solid, aqueous and gaseous ( $^{222}\text{Rn}$ ) 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.

COMMUNICATIONS/OUTREACH: Webmaster of multiple large sites content development,, site maintenance, site security, social media integration and use, media event coordination and spokesperson (such as Kilauea eruption in 2018, with over 50 TV and radio interviews)

## **FIELD EXCURSIONS**

*Studies at sea [my role in brackets]:*

- 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*]
- Schmidt Ocean Institute “Underwater Fire”, FK171110, Nov-Dec., 2017. Submersible diving with ROV SuBastian and AUV Sentry ultra-high resolution mapping of submarine volcanoes in Tonga. [*chief scientist*]
- Schmidt Ocean Institute “Sea Level Secrets”, FK170825, Aug-Sept., 2017. Submersible diving with ROV SuBastian and AUV Abyss ultra-high resolution mapping of drowned ice age coral reef deposits in Hawaii and the Line Islands for sea level change research. [*chief scientist*]
- MBARI 2015, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].

- 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*]
- MBARI 2014, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].
- R/V Kilo Moana, 2014– New ROV Lu'ukai field trials – first science dives, Hawaii, Jan 2014 [*scientist*]
- MBARI 2013, ROV Doc Ricketts expedition on the R/V Western Flyer to Axial Volcano to study recent volcanic deposits [*scientist*].
- 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*]
- 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*]
- 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*]
- NE Lau 2011, NE Lau basin, AUV, camera sled, dredging expedition on R/V Kilo Moana, Nov 2011 [*scientist leading dredge operations*]
- NE Lau 2010-2, NE Lau basin dredging expedition on R/V Kilo Moana, Dec 2010 [Chief Scientist]
- HURL 2010 field season, 2 submersible dives and ROV operations exploring last glacial maximum coral reefs at Penguin Banks, Hawaii, Oct 2010 [*Chief Scientist*]
- 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*]
- GRUVEE 2010, Galapagos Spreading Center expedition, Alvin submersible diving from R/V Atlantis, March-April 2010. [*CoPI*]
- 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*]
- 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*]
- 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*]
- 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*]
- 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*]
- HURL 1998 field season Submersible Dives with Pisces V, R/V KOK - Sept 1998 - exploration, sampling southwest rift zone of Mauna Loa. [*CoPI*]
- 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) [*scientist*].
- 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. [*scientist*]
- Alcyone expedition, R/V Melville (SIO) Aug, 1985 (Chief Scientist: H. Craig) - Water column geochemistry of NW Pacific, geology, outer Hawaiian Islands [*scientist*]

#### *Studies on land:*

- 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)
- Icelandic Rift Zones Field demonstration for US Mid-ocean ridge researchers, (1999)
- Field studies of fossiliferous conglomerates on Lana'i, Hawai'i (multiple trips 1994-2001).
- Monitoring/Sampling active eruption of Kilauea volcano, with M. Garcia, 1992 - May 1998.
- Mapping/Sampling of post-erosional dikes with M. Garcia, Island of Kauai, April 1993
- Mapping/Sampling of lava flows and dikes with H. West, Mauna Lei Valley, Lana'i, August 1992.

## **B. TEACHING:**

### **Courses at Univ. of Hawaii:**

- 44 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**

### **NSF EarthCube program**

#### *My Roles and activities*

##### roles

- Chair, Leadership council, 2018-present, including semi-monthly teleconferences and other meetings
- Member, Leadership council, 2016-present, including semi-monthly teleconferences and other meetings
- Past Chair of the Science Committee, 2016-2018, including semi-monthly teleconferences and other meetings
- Member, Science Committee, 2014-present, Past Chair of 2 committee working groups and member of several others.
- Emcee, EarthCube All Hands Meeting May 2015, Arlington, VA and June 2016, Denver, CO

##### activities and workshops

- Proposal reviewer and panelist, 2012 on
- Participant in 3 EarthCube End user workshops in 2013 (Deep sea, Volcanology/petrology, Geochronology)
- Participant, EC3 – Earth-Centered Communication for Cyberinfrastructure: Challenges of field data collection, management, and integration, California, Aug 2015
- Governance check and adjust participant, Albq NM, Jan 2015
- EC Sci-Tech workshop 2015, Berkely CA, April 2015
- i-samples RCN participant, 2016-2018
- Science Committee Geodata planning Workshop - Boulder, April 2018
- Leadership Council Face to Face meetings
  - Oct 2018, Boulder
  - Feb 2018, Denver
  - March 2017, Denver
  - June, 2016 Boulder

- Attendee 2015, 2016, 2016 All Hands Annual Meetings

*EarthCube document authorships (incomplete list):*

lead author

- EarthCube Promotes FAIR Data and Data Resources for the Geosciences Community, 2019, doi pending
- EarthCube Leadership Council Strategic priorities 2018, doi pending
- EarthCube Leadership Council Recommendations for the 2018 NSF Solicitation, doi pending
- EarthCube Promotional Video Script, 2018, doi pending
- Next EarthCube Program Office Solicitation Guidance, 2018, doi pending
- EarthCube Leadership Council Recommendations for a Science-Driven Workbench, 2018, doi pending

coauthor

- EarthCube Action Plan 2017, doi pending
- Response to the EarthCube Advisory Committee Report, 2016, doi pending
- Tiger Team for Funded Project Requirements Report, 2016, doi pending
- Geoscience 2020: Cyberinfrastructure to reveal the past, comprehend the present, and envision the future, 2015, DOI: 10.7269/P3MG7MDZ
- A CRISP Approach for EarthCube: Collaborative Resource Incubators (CRI) for a Sci---Tech Portfolio, 2015, doi pending

Conference presentations:

- GSA 2018
- EGU 2019
- AGU 2018 townhall

**Other Scientific Community Service**

- Associate Editor, G-cubed (since 2010)
- Inaugural Member, User Committee, NSF Integrated Earth Data Applications facility at Lamont-Doherty Earth Observatory (2011 – onward)
- 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
- Proposal Review Panelist NSF 14 times (since 2002), NOAA 1 time (2010)
- Reviewing - Journal Article Reviews - >100 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 Geology and Geophysics Department Chair, 2014 to 2018; 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 volcanology, sea level and other general science subjects for a variety of local and international media outlets (for instance, the 2018 Kilauea volcano Leilani Estates eruption crisis)
- 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

### Peer-reviewed Articles (most recent first)

- Graham, David W., Michael, Peter J., **Rubin, Ken H.** (2018) An investigation of mid-ocean ridge degassing using He, CO<sub>2</sub>, and δ<sup>13</sup>C 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, G-cubed 2018GC007708R.
- Embley, Robert W.. Rubin, Kenneth H (2018) Extensive young silicic volcanism produces large deep submarine lava flows in the NE Lau Basin, Bulletin of Volcanology 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** (2016) 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, Dordrecht. pp 21 [https://doi.org/10.1007/978-94-007-6238-1\\_28](https://doi.org/10.1007/978-94-007-6238-1_28)
- 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.
- Rubin, K. H.**, 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, **Rubin, K. H.**, 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>
- D.J. Fornari, K.L. Von Damm, J.G. Bryce, J.P. Cowen, V. Ferrini, A. Fundis, M.D. Lilley, G.W. Luther III, L. Mullineaux, M.R. Perfit, M.F. Meana-Prado, **Rubin, K. H.**, W.E. Seyfried Jr., T.M. Shank, A. Soule, M. Tolstoy, S.M. White (2012) The East Pacific Rise Between 9° and 10°N: Twenty-Five Years of Integrated, Multidisciplinary Oceanic Spreading Center Studies. *Oceanography*, **2**, 18–43, <http://dx.doi.org/10.5670/oceanog.2012.02>.
- JA Resing, **Rubin, K. H.**, R.W. Embley, J.E. Lupton, E.T. Baker, RP Dziak, T. Baumberger, M.D. Lilley, JA Huber, TM Shank, DA Butterfield, DA Clague, NS Keller, SG Merle, NJ Buck, PJ Michael, A Soule, DW Caress, SL Walker, R Davis, JP Cowen, A-L Reysenbach, H Thomas (2011) Active submarine eruption of boninite in the northeastern Lau Basin, *Nature Geoscience*, **4**, 799-806 **DOI: 10.1038/NGEO1275**.
- E.T. Baker, J.E. Lupton, JA Resing, T Baumberger, M.D. Lilley, SL Walker, **Rubin, K. H.** (2011) Unique event plumes from a 2008 eruption on the Northeast Lau Spreading Center, *Geochem. Geophys. Geosyst.*, **12**, Article Number: Q0AF02 DOI: 10.1029/2011GC003725
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### **Reports and articles, Not peer reviewed**

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### **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"*)

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

**Awards Received - Contracts And Grants** (July 2018 update)

<b>Summary - Dollar Amounts since '92</b>						
<b>Total with Rubin as Project Director (PD)</b>				<b>\$5,554,573</b>	<b>\$214K/yr</b>	
<b>Total with Rubin as Co-PI</b>				<b>\$2,058,718</b>		
<b>Overall Total</b>				<b>\$7,613,291</b>	<b>\$293K/yr</b>	
Projects List	Investigators	Agency/ Number	Amount	start mo/yr	end mo/yr	
<b>Rubin as Project Director – Extramural</b>						
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-19
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	<b>Rubin</b>	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	<b>Rubin</b> , Hellebrand, Konter	NSF-OCE 1538121	\$275379	8/15	7/17
6	CIF21 DIBBs: Collaborative Research: Cyberinfrastructure for Interpreting and Archiving U-series Geochronologic Data	<b>Rubin</b>	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 <sup>nd</sup> and 3 <sup>rd</sup> year renewals)	<b>Rubin</b> , Pyle	NOAA JB133F10SE3679 & WE133F11SE1945 & 3 <sup>rd</sup> 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	<b>Rubin</b>	NSF-OCE 0937409	\$124653	09/09	08/14
9	Effect of Melt Supply on MORB Compositions at Local and Regional Scales	<b>Rubin</b> 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	<b>Rubin</b> , Ravizza, Mahoney	NSF-EAR 0841797	\$60000	04/09	03/11
11	Collaborative Research: Rapid Response to a Submarine Eruption at W. Mata Volcano	<b>Rubin</b> , 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	<b>Rubin</b> , 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	<b>Rubin</b>	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	<b>Rubin</b>	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	<b>Rubin</b>	NSF-OCE 0636439	\$37516	07/06	12/07
16	Acquisition of a multi-collector ICP-MS for Marine and Terrestrial Geochemical Research	<b>Rubin</b> , 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	<b>Rubin</b>	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.	<b>Rubin</b>	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	<b>Rubin</b>	NSF-EAR 0106463	\$207501	7/01	6/04
20	Recent Ridge Eruptive Activity Dating and Investigations: lava geochronology and mantle melting - "RREADI-2" Project	<b>Rubin</b>	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	<b>Rubin, Garcia</b>	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.	<b>Rubin, Mahoney, Spencer</b>	NSF-OCE 9413315	\$46674	9/94	8/95
25	Acquisition of a high abundance sensitivity thermal ionization mass spectrometer	<b>Rubin, Mahoney, Sinton, Batiza, Garcia</b>	NSF-OCE 9314503	\$155713	2/94	1/95
26	Acquisition of a high abundance sensitivity thermal ionization mass spectrometer. <i>(different proposal from above)</i>	<b>Rubin, Mahoney, Garcia, Self, Sinton</b>	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	<b>Rubin</b>	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.	<b>Rubin</b>	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, <b>Rubin</b>	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, <b>Rubin, Mahoney, Ito</b>	NSF-OCE 0327051	\$316877	01/04	12/07
3	Volcanic Eruptions on Mid-Ocean Ridges: Insights into Axial Magma Chamber Processes	Sinton, <b>Rubin</b>	NSF-OCE 0241578	\$198205	8/03	7/06
4	Acquisition of a high resolution, sector field, ICP-MS and laser ablation system	Ravizza <b>Rubin, DeCarlo, Mahoney, Garcia</b>	NSF-EAR 0215297	\$313040	9/02	8/04
5	Field demonstration of Icelandic Rift Zones for U.S. Mid-ocean ridge researchers	Sinton, <b>Rubin</b>	NSF-INT 9910570	\$30800	9/99	8/00
6	Volcanological Investigations of a Superfast-Spreading Mid-Ocean Ridge	Sinton, <b>Rubin, Batiza</b>	NSF-OCE 9633398	\$472701	9/98	8/04
7	Fine-scale magmatic processes at superfast spreading: EPR 17°-19°S.	Sinton, <b>Rubin, Batiza</b>	NSF-OCE 9415989	\$102452	11/95	10/97
8	Acquisition of ICP-MS for Research in Ocean and Earth Sciences	Batiza, <b>Rubin, Measures DeCarlo, West</b>	NSF-OCE and - EAR 9401738 and 9401770	\$100475 and \$75000	12/94 and 12/94	11/95 and 11/96