

# CURRICULUM VITAE OF PETER C. HOUK

January 2020



## I. Personal Information

Place of Birth: Maryland, U.S.A.  
Marital Status: Married  
Address: P.O. Box 4521  
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## II. Education

- Florida Institute of Technology, Ph.D. in Marine Biology, 2006.  
Advisor: Dr. Robert van Woelik
- University of Guam, M.S. in Biology/Marine Science, 1999.  
Advisor: Dr. Charles Birkeland
- Northwestern University, B.S. in Environmental Engineering, 1996.

## III. Positions Held

- Tenured Associate Professor, University of Guam Marine Laboratory – Conduct grant-related research, teach courses, and advise students on projects related to population, community, and conservation ecology, with a focus on coral-reef habitats. Courses offered include quantitative population ecology and advanced statistics for graduate student research. Research is focused on the influence local and global stressors to coral and fish assemblages, fisheries, and linking science with adaptive management.
- Chief Scientist and Post-Graduate Researcher, Pacific Marine Resources Institute – Lead scientific researcher and co-founder of a non-profit organization dedicated to working in partnership with fisheries and coral-reef monitoring across the Pacific. Oversee and assist with regional science projects, collaborate with regional and global initiatives, provide technical assistance for collaborative data analyses, and write manuscripts and grants. July 2010 – February 2013.
- Marine Biologist, Commonwealth of the Northern Mariana Islands Division of Environmental Quality – Head of the jurisdictional long-term marine monitoring program, disseminate information for science, management and policy, publish manuscripts, and write external and programmatic grants. June 2000 – June 2009.
- Adjunct Faculty, Northern Marianas College - Teach courses in community ecology, coral and algae taxonomy, survey methods, and integration of biological data with GIS systems. These courses provide CNMI's resource management agencies with trained personnel. August 2004 – 2012.

## IV. Awards, Memberships, and Collaborations

- National Center for Ecological Analysis and Synthesis 2019-2020 working group on

- predicting the impacts of global coral reef bleaching events and future ocean states.
- PEW Fellowship Nominee 2016 for ecosystem-based fisheries management and improving the foundation for science-based fisheries policies on coral reefs. I was nominated but not awarded this prestigious fellowship.
  - Member of the Micronesian Challenge Scientific Advisory Panel - This group advises regional leaders on the science backing a conservation movement to “effectively conserve” 30% of marine and 20% of terrestrial resources throughout Micronesia. The group is tasked with developing defensible, science-based criteria to evaluate the progress of the movement and linking science with management. (2010 – present)
  - Advisory Council, National Marine Sanctuary of American Samoa – Research seat on the board, assist in reviewing local and federal conservation plans and strategies, share science for improved decision making (2015 – present).
  - National Science Foundation Earth Cube Initiative – Collaborating member of a coral-reef working group that aims to integrating big datasets across disciplines. (2014 – 2016)
  - Board Member, Western Pacific Coral Reef Institute - Together with regional partners, this program defined major research needs across the region and solicited for coral reef research projects to address pressing needs. The board was responsible for reviewing and selecting projects on a competitive basis (300K annually). (2010 – 2014)
  - Micronesian Conservation Trust Technical Science Committee – This program defines major research needs across the region and solicits for coral reef research and management projects to address pressing needs. Our committee is responsible for reviewing and selecting projects on a competitive basis (250K annually). (2010 – present)
  - The Nature Conservancy. Collaboration with an ongoing Pacific Ocean wide marine biodiversity and ecological assessment program. (2006 – present)
  - National Atmospheric and Oceanic Administration – Served as a member of both regional and local coral conservation action strategy committees. (2005 – present)
  - Palau International Coral Reef Center – Active, continuous collaboration with this center for regional excellence on numerous projects and publications across Micronesia. (2005 – present)

## VI. Publications and Reports

### Book Chapters:

1. Houk, P. 2010. Volcanic disturbances and coral reefs. In: Encyclopedia of Modern Coral Reefs. Springer-Verlag, USA. Aspects of biology and ecological functioning of coral reefs in Guam and the Commonwealth of the Northern Mariana Islands. In: R.E. Dodge et al., editors. Coral reefs of the USA. Springer, USA.
2. Richmond, R.H., Houk, P., Trianni, M., Wolanski, E., Davis, G., Bonito, V., and V.J. Paul. 2008. Aspects of biology and ecological functioning of coral reefs in Guam and the

Commonwealth of the Northern Mariana Islands. In: R.E. Dodge et al., editors. Coral reefs of the USA. Springer, USA. pp 719-740.

3. Riegl, B.M., Purkis, S.J., Houk, P., Cabrera, G., and R.E. Dodge. 2008. Geologic Setting and Geomorphology of Coral Reefs in the Mariana Islands (Guam and Commonwealth of the Northern Mariana Islands). In: R.E. Dodge et al., editors. Coral reefs of the USA. Springer, USA. pp. 691-718.

### Peer-Reviewed Journal Articles:

#### Submitted and in prep

1. Houk, P., Yalon, A., Maxin, S., Starsinic, C., McInnis, A., Gouezo, M., Golbuu, Y., van Woesik, R. *In review*. Forecasting coral-reef futures from El Nino and Pacific Decadal Oscillation cycles.
2. Houk, P., Comeros-Raynal, M., Lawrence, A., Sudek, M., Vaeoso, M., McGuire, K., Regis, J. *In review*. Nutrient thresholds to protect water quality and coral reefs.

#### 2020

3. Camacho, R., Houk, P. *In Press*. Decoupling seasonal and temporal dynamics of macroalgal canopy cover in seagrass beds. *Journal of Experimental Marine Biology and Ecology*.
4. Johnson, S.M., Reyew, B., Yalon, A., Mclean, M., Houk, P. *In Press*. Contextualizing the social-ecological outcomes of coral reef fisheries management. *Biological Conservation*.

#### 2019

5. Darling, E.S., McClanahan, T.R., Maina, J., ....., Houk, P., ...Social-environmental drivers inform strategic management of coral reefs in the Anthropocene. *Nature Ecology and Evolution*. DOI: 10.1038/s41559-019-0953-8
6. McLean, M., Auber, A., Graham, N.A.J., Houk, P., Villeger, S., Violle, C., Wilson, S.K., Mouillot, D. Trait structure and redundancy determine sensitivity to disturbance in marine fish communities. *Global Change Biology*. DOI: 10.1111/gcb.14662
7. Comeros-Raynal, M.T., Lawrence, A., Sudek, M., Vaeoso, M., McGuire, K., Regis J., Houk, P. Applying a ridge-to-reef framework to support watershed, water quality, and community-based fisheries management in American Samoa. *Coral Reefs*. 38: 505-520.

#### 2018

8. Cuetos-Bueno, J., Hernandez-Ortiz, D., Houk, P. 2018. Co-evolution of “race-to-fish” dynamics and declining size structures in an expanding commercial coral-reef fishery. *Reviews in Fish Biology and Fisheries*. <https://doi.org/10.1007/s11160-018-9542-1>
9. Harborne, A.R., Green, A.L., Peterson, N.A., Beger, M., Golbuu, Y., Houk, P., Spalding, M.D., Taylor, B.M., Terk, E., Treml, E.A., Victor, S., Vigliola, L., Williams, I.D., Wolff, N.H., Ermgassen, P., Mumby, P. 2018. Modelling and mapping regional-scale patterns of fishing impact and fish stocks to support coral-reef management in Micronesia. *Diversity and Distributions*. DOI: 10.1111/ddi.12814
10. Cuetos-Bueno, J., Hernandez-Ortiz, D., Graham, C., Houk, P. 2018. Human and environmental gradients predict catch, effort, and species composition in a large Micronesian coral-reef fishery. *PLoS ONE* 13: e 0198068. doi: 10.1371/journal.pone.0198068

11. Houk, P., Cuertos-Bueno, J., Tibbatts, B., Gutierrez, J. 2018. Variable density dependence and the restructuring of coral-reef fisheries across 25 years of exploitation. *Scientific Reports*. 8: 5725.
12. Houk, P., Cuertos-Bueno, J., Kerr, A., McCann, K. 2018. Linking fishing pressure with ecosystem thresholds and food-web stability on coral reefs. *Ecological Monographs*. 88(1), 109-119.
13. Cuertos-Bueno, J., Houk, P. 2018. Disentangling economic, social, and environmental drivers of coral-reef fish trade in Micronesia. *Fisheries Research*. 199, 263-270.

#### 2017

14. Houk, P., Tilfas, R., Luckymis, M., Nedlic, O., Ned, B., Cuertos-Bueno, J., McLean, M. *In Press*. An applied framework to assess exploitation and guide management of coral-reef fisheries. *Ecosphere* 8(3), e01727.

#### 2016

15. McLean, M., Cuertos-Bueno, J., Nedlic, O., Luckymis, M., Houk, P. (2016). Local stressors, resilience, and shifting baselines on coral reefs. *PLoS ONE* 11: e0166319. doi:10.1371/journal.pone.0166319

#### 2015

16. Maynard, J.A., McKagan, S., Raymundo, L., Johnson, S., Ahmadia, G., Johnston, L., Houk, P., Williams, G., Kendall, M., Heron, S.F., van Hooidonk, R., Mcleod, E., Tracey, D., and Planes, S. 2015. Assessing relative resilience potential of coral reefs to inform management. *Biological Conservation*. 192, 109-119.
17. Houk, P., Camacho, R., Johnson, S., McLean, M., Maxin, S., *et al.* 2015. The Micronesia Challenge: Assessing the relative contribution of stressors on coral reefs to facilitate science-to-management feedback. *PLoS ONE* 10(6): e0130823
18. Montambault, J.R., Wongbusarakum, S., Leberer, T., Joseph, E., Andrew, W., Castro, F., Nevitt, B., Golbuu, Y., Oldiais, N.W., Groves, C.R., Kostka, W., Houk, P. 2015. Use of monitoring data to support conservation management and policy decisions in Micronesia. *Conservation Biology* 29, 1279-1289.

#### 2014

19. Houk, P., Benavente, D., Iguel, J., Johnson, S., Okano, R. 2014. Coral reef disturbance and recovery dynamics differ across gradients of localized stressors in the Mariana Islands. *PLoS ONE* 9(8): e105731.
20. Taylor, BM, Choat, H., Houk, P., Russ, G. 2014. Life histories predict vulnerability to overexploitation in parrotfishes. *Coral Reefs* 33(4): 869-878.
21. Cuertos-Bueno, J., Houk, P. 2014. Re-estimation and synthesis of coral-reef fishery landings in the Commonwealth of the Northern Mariana Islands since the 1950's suggests the decline of a common resource. *Reviews in Fish Biology and Fisheries* 25(1): 179-194.

#### 2013

22. Houk, P., Musburger, C. 2013. Trophic interactions and ecological stability across coral reefs in the Marshall Islands. *Marine Ecology Progress Series* 488:23-34.
23. Houk, P., Golbuu, Y., Gorong, B., Gorong, T., Filmed, T. 2013. Watershed discharge patterns, secondary consumer abundances, and seagrass habitat condition in Yap, Micronesia. *Marine Pollution Bulletin*. 71:209-215.

24. Houk, P., van Woesik, R. 2013. Progress and perspectives on question-driven coral-reef monitoring. *Bioscience*. 63:297-303.

#### 2012

25. van Woesik, R., Houk, P., Isechal, A., Idechong, J., Victor, S., Golbuu, Y. 2012. Climate-change refugia in the sheltered bays of Palau: analogues of future reefs. *Ecology and Evolution* 2:2474-2484.
26. Houk, P., Benavente, D., Fread, V. 2012. Characterization and evaluation of coral-reef assemblages across Yap State, Federated States of Micronesia. *Biodiversity and Conservation* 21:2045-2059.
27. Houk, P., Rhodes, K., Mcilwain, J., Cuetos-Bueno, J., Lindfield, S. 2012. Comparative assessment of commercial coral reef fisheries across Micronesia: the need for improved management. *Coral Reefs* 31:13-26.

#### 2011

28. Denton, G., Trianni, M., Bearden, B., Houk, P., Starmer, J. 2011. Impact of a medical waste incinerator on mercury levels in lagoon fish from a small tropical islands in the Western Pacific. *Journal of Toxicology and Environmental Health* 74:823-827.

#### 2010

29. Houk, P. and Wiles P. 2010. Water quality and herbivory interactively drive coral-reef recovery in American Samoa. *PLoS ONE* 5(11): e13913.
30. Houk, P. and Raubani J. 2010. *Acanthaster planci* outbreaks in Vanuatu coincide with oceanically-derived chlorophyll blooms, furthering consistencies throughout the Pacific Ocean. *Journal of Oceanography*. 66:435-438.
31. Houk, P. and R. Camacho. 2010. Dynamics of seagrass assemblages in the Saipan Lagoon. *Botanica Marina*. 53: 68-79.
32. Houk, P. and J. Starmer. 2010. Constraints on the diversity and distribution of coral-reef assemblages in the volcanic Northern Mariana Islands. *Coral Reefs* 29:59-70.
33. Houk, P. and R. van Woesik. 2010. Coral assemblages and reef growth in the Commonwealth of the Northern Mariana Islands. *Marine Ecology*. 31:318-329.

#### 2008

34. Houk, P. and R. van Woesik. 2008. Changes in the Saipan Lagoon since 1959: toward understanding causal effects. *Marine Ecology Progress Series* 356:39-50.

#### 2007

35. Houk, P., Bograd, S. and R. van Woesik. 2007. The transition zone chlorophyll front can trigger *Acanthaster planci* outbreaks in the North Pacific Ocean: historical confirmation. *Journal of Oceanography* 63(1):149-154.

#### 2006

36. Houk, P. and R. van Woesik. 2006. Coral Reef Benthic Video Surveys facilitate Long-Term Monitoring of the Commonwealth of the Northern Mariana Islands: towards an optimal sampling strategy. *Pacific Science* 60(2):177-189.

#### 2005

37. Houk, P., Didonato, G., Iguel, J. and R. van Woesik. 2005. Assessing the effects of non-point source pollution on American Samoa's coral reef communities. *Environmental Monitoring and*

**Selected meeting presentations and abstracts:**

1. Houk, P. Micronesia coral-reef fisheries. United States Coral Reef Task Force, Koror, Palau. September 2019.
2. Houk, P. Can local management mitigate climate change impacts on coral reefs? 2019 University of Guam Island Sustainability Conference, April, 2019.
3. Houk, P. Fishing pressure, coral-reef food webs, and ecosystem-based management. 13<sup>th</sup> International Coral Reef Symposium, Honolulu, Hawaii. June 2016.
4. Nakamura, T., Rengil, G. Houk, P., van Woesik, R. Session accepted for the 13<sup>th</sup> International Coral Reef Symposium: Conservation research for small-island nations: climate change, fisheries, tourism, and land-use change. June 2016.
5. Houk, P. Science-to-management frameworks for coral reefs and coastal fisheries across Micronesia. United States Coral Reef Task Force, Guam. September 2016.
6. Houk, P. Coral reefs and coastal fisheries across Micronesia. Association of the Pacific Islands Legislature. Guam, August 2016.
7. Houk, P. 2015. Plenary Session Speaker: Sustaining ecosystem services provided by coral reefs in the face of climate change. University of Guam Center of Island Sustainability Conference 2015.
8. Houk, P. 2014. Panelist: Research and education perspectives on preparing for future climates. Island Sustainability Conference, Hagatna, Guam.
9. Houk, P. 2014. Collaborative coral-reef monitoring for local jurisdictions with limited resources across Micronesia. Small Island Developing States Working Group on Ocean Acidification, Apia, Samoa.
10. Houk, P. 2013. Towards measuring the effectiveness of the Micronesian Challenge. 2013 Plenary Forum: Pacific Islands Environmental Conference, Guam, and the Hawaiian Conservation Conference, Honolulu.
11. Houk, P. 2012. Coral-reef ecosystems across Micronesia: patterns, processes, and human footprints. 12<sup>th</sup> International Coral Reef Symposium, Cairns, Australia.
12. Houk, P., and J. Starmer. 2008. Coral reef assemblages and diversity in the volcanic Northern Mariana Islands. 11<sup>th</sup> International Coral Reef Symposium, Fort Lauderdale, Florida. p. 80.
13. Slattery, M., Gochfeld, D.I., Houk, P., Harrison, L.R., Chaudhary, A., and K. Willett. 2006. Effects of environmental estrogens on populations of the tropical Pacific soft coral *Sinularia polydactyla*. *Marine Environmental Research* 62: S267-68.

**Reports and Grey Literature:**

1. Houk, P., Deblieck, J., Benavente, D., Maxin, S., Yalon, A., McLean, M., Teresio, C., Graham, C., Kutta, S., Stephen, L., Cuetos-Bueno, J., Leberer, T. 2016. Status and management of coral reefs in Chuuk Lagoon and Kuop Atoll, Federated States of Micronesia: Synthesis of 2008 to 2016 data. Technical report submitted to The Nature Conservancy. Pohnpei, Micronesia.
2. Schils, T., Houk, P., Biggs, J., Donaldson, T., Kense, A., McLean M. 2016. Marine resources survey of Naval Base Guam and Naval Support Activity Anderson Air Force Guam. Technical report submitted to the Naval Base Guam and Anderson Air Force Base Guam.

3. Houk, P. 2015. Improving data collection, storage, handling, visualization, and analyses for coral-reef monitoring programs. Workshop report submitted to The Nature Conservancy. Palau, Micronesia.
4. Houk, P., Gorong, B., and Buthung, E. 2014. A well-developed community-based marine protected area proves resilient to a Crown-of-Thorns sea star outbreak. Case Studies of Social-Ecological Resilience in Island Systems. American Museum of Natural History and Center for Biodiversity and Conservation. New York.
5. Houk, P., Benavente, D. McLean, M. Camacho, R., Capelle, J. Silk, M., White, M., Jacobson, D., Hess, D. 2014. Namdrik atoll marine resources assessment and comparisons among RMI atolls. University of Guam Marine Laboratory Tech Report, submitted to the College of the Marshall Islands, Majuro, RMI.
6. Houk, P., Benavente, D., and Johnson, S. 2013. Watershed based coral reef monitoring across Tutuila, American Samoa: Summary of decadal trends and 2013 assessment. A report submitted to the American Samoa Environmental Protection Agency, Pago Pago, American Samoa.
7. Houk, P. and R. Okano. 2012. 20 years of ecological change in Laolao Bay, Saipan: quantifying localized stressors and thresholds. A report submitted to the CNMI Division of Environmental Quality, Saipan, CNMI.
8. Houk, P. 2010. Quantitative assessment of coral reef assemblages and species diversity patterns in Northern Palau. A report submitted to The Nature Conservancy, Micronesia office, Kolonia, Pohnpei.
14. Houk, P. 2010. Improving local capacity for coral reef monitoring data interpretation: A step-by-step guidebook with exercises to improve local capacity for data collection, storage, handling, visualization and analysis throughout Micronesia. Technical Report submitted to the Pacific Islands Marine Protected Area Network and the National Fish and Wildlife Foundation, Honolulu.
15. Houk, P. and T. Leberer. 2008. Quantitative assessment of coral reef assemblages and species richness in Chuuk State, Federated States of Micronesia. A report submitted to The Nature Conservancy, Micronesia office, Kolonia, Pohnpei.
16. Houk, P. and J. Starmer. 2008. Quantitative assessment of coral reef assemblages and species richness in Yap State, Federated States of Micronesia. A report submitted to The Nature Conservancy, Micronesia office, Kolonia, Pohnpei.
17. Houk, P. and C. Musburger. 2008. Assessing the effects of non-point source pollution on American Samoa's coral reef communities. A report submitted to the American Samoa Environmental Protection Agency, Pago Pago, American Samoa.
18. Turgeon, D.D.,.. **P. Houk**, ..., and N. Vander Velde. 2002. The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2002. National Oceanic and Atmospheric Administration/National Ocean Service/National Centers for Coastal Ocean Science, Silver Spring, MD. 265 pp.
19. Houk, P. 2002. Commonwealth of the Northern Mariana Island 305(b) Water Quality Assessment Report. CNMI Division of Environmental Quality, Saipan, MP. 96950.

## VII. Invited Reviews and Academic Editing

Academic editor

- PLOS One (2018 to 2019)

Peer Reviewer

- Coral Reefs: 2006; Marine Biology: 2007; Journal of Experimental Marine Biology and Ecology: 2009; Pacific Science: 2005; Journal of Oceanography: 2010; Marine Ecology Progress Series: 2013; Journal of Coastal Management: 2014; PLoS ONE: 2013; Bioscience: 2015; Journal of Geophysical Research: 2016; Diversity: 2016; NSF Biological Oceanography grant reviews: 2014; Frontiers in Ecology and the Environment: 2016; Nature Ecology and Evolution: 2018.

### VIII. Research Grants (2010 – present)

- 2019-2021 United States Environmental Protection Agency: USD \$276,000. This competitive award was granted to co-PI's Peter Houk and Frances Castro to quantify the relative influence of localized stressors on Guam reefs and build a framework for predicting the future of reefs, generally, exposed to localized and global stress.
- 2018-2020 Micronesian Conservation Trust: USD \$72,000. This *competitive* award was sub-granted to Peter Houk (University of Guam Marine Laboratory) to enhance coral-reef monitoring activities, investigate climate change at regional and local scales, conduct collaborative data development, and disseminate results across. This is part of a long-term, ongoing project (see below).
- 2018-2019 National Fish and Wildlife Foundation, Coral Conservation Grant: USD \$50,000. This *competitive* award was sub-granted to Peter Houk, Sarah Lemer, and Javier Cuetos-Bueno to examine species response traits in coral-reef fisheries with respect to phylogenetic trees.
- 2017-2019 Saltonstall-Kennedy Grant Program, National Oceanic and Atmospheric Administration: USD \$107,000 per annum. This *competitive* award was sub-granted to Peter Houk and Javier Cuetos-Bueno (University of Guam Marine Laboratory) to build a fisheries dependent monitoring network across Micronesia and build regional and local analytical frameworks.
- 2017-2018 Micronesian Conservation Trust: USD \$57,000 per annum. This *competitive* award was sub-granted to Peter Houk (University of Guam Marine Laboratory) to enhance coral-reef monitoring activities, conduct collaborative data development, and disseminate results across Micronesia. This is part of a long-term, ongoing project (see below).
- 2016-2017 United States Environmental Protection Agency Wetlands Program Development Grant. USD \$300,000. This competitive award was granted to the American Samoa Environmental Protection Agency in partnership with two other local agencies and Dr. Peter Houk to examine drivers of water quality, fishing pressure and coral-reef condition.
- 2016 The Nature Conservancy. USD \$50,000. This award was granted to Dr. Peter Houk to examine coral-reef resilience in Chuuk State Micronesia following a major disturbance event and identify ecosystem indicators that are best predicted by extensive reef monitoring data.
- 2016 National Oceanic and Atmospheric Administration Coral Conservation Program: USD \$68,000. This competitive award was granted to support post-graduate research to identify



management units for multispecies coral-reef fisheries that are based upon differing species-level responses to fishing pressure.

- 2014-2015 Micronesia Conservation Trust: USD \$56,000. This competitive award was granted to Dr. Houk to host an emerging post-graduate researcher dedicated towards improving the scientific foundation for ecosystem-based fisheries management (Javier Cuetos-Bueno).
- 2014-2015 National Fish and Wildlife Foundation: USD \$49,000. This *competitive* award was granted to Dr. Houk and a graduate student to build a standardized fishery-dependent monitoring program in Kosrae, Federated States of Micronesia, and integrate fisheries catch dynamics with coral-reef monitoring and synthesize ecosystem-based targets for management.
- 2014-2015 United States Department of Defense: USD \$640,000 per 18 months. This *competitive* award was granted to a team of four principle investigators at the University of Guam Marine Laboratory, including Peter Houk as the coral biologist/quantitative scientist/project manager. This project will provide a robust characterization of coral reef habitats across all military lands on Guam.
- 2014-2016 Micronesia Conservation Trust: USD \$57,000 per annum. This *competitive* award was sub-granted to Peter Houk (University of Guam Marine Laboratory) to enhance coral-reef monitoring activities, conduct collaborative data development, and disseminate results across Micronesia.
- 2011-14 Micronesia Conservation Trust: USD \$55,000 per annum. This *competitive* award was granted to Peter Houk through a non-profit organization, Pacific Marine Resources Institute (PMRI), and more recently the University of Guam Marine Laboratory to build, maintain, and analyze coral-monitoring datasets across Micronesia.
- 2013 American Samoa Coral Reef Advisory Group: USD \$38,000. This *competitive* award was provided to Peter Houk to evaluate the individual contributions of localized stressors towards predicting decadal dynamics in coral-reef assemblages on Tutuila, American Samoa.
- 2010 Western Pacific Coral Reef Institute: USD \$47,000. This *competitive* award was granted to Dr. Peter Houk to document the current status of coral-reef atolls across the Marshall Islands, and establish a standardized monitoring program to evaluate change across atolls and through time.
- 2011 National Oceanic and Atmospheric Administration Domestic Coral Reef Conservation Program: USD \$50,000. This *competitive* award was granted to Peter Houk through a non-profit organization, Pacific Marine Resources Institute (PMRI), to assist with coral-reef monitoring and research programs across the Marianas Archipelago, including data collection, analyses, and publication development.
- 2010 CNMI Division of Environmental Quality: USD \$66,000. This *competitive* award was granted through a non-profit organization, Pacific Marine Resources Institute (PMRI), to: 1) assess the benefits of major watershed restoration activities upon Laolao Bay, Saipan, and 2) evaluate change in coral reef assemblages since 1992 using a historical baseline pertinent to evaluate change, and causes of change.
- 2010 National Fish and Wildlife Foundation: USD \$36,500. This competitive award was granted through PMRI to host a data analysis workshop to improve the local capacity of

Micronesia's coral monitoring programs to evaluate and process ecological datasets. Focus was given to univariate and multivariate analyses, and four notable software platforms.

- 2010 National Oceanic and Atmospheric Administration General Coral Reef Conservation: USD \$39,000. This *competitive* award was granted to Peter Houk through a non-profit organization, Pacific Marine Resources Institute (PMRI), to conduct research to examine resiliency patterns on Yap State, FSM, coral reefs in conjunction with their long-term monitoring efforts.
- 2010 The Nature Conservancy: USD \$14,500. This *competitive* award was granted to Peter Houk through a non-profit organization, Pacific Marine Resources Institute (PMRI), to conduct research on CNMI's fish markets, and integrate findings into a Micronesia-wide framework.
- 2010 National Oceanic and Atmospheric Administration Pacific Islands Marine Protect Area Community: USD \$25,000. This award was granted to Peter Houk through the above noted federal agency to produce an ecological data management, manipulation, and analyses guidebook using regional datasets. The manual will be associated with a regional workshop in July 2010.

#### **VIX. Analytical Experience**

- Proficient in modeling ecological and environmental data with R, and associate packages for statistical analyses and population modeling, PRIMER and CANOCO multivariate software packages, ArcGIS geographic information systems, ER-Mapper remote sensing software, and numerous others approaches common to contemporary science and research.

#### **X. Supervised and Collaborative Research**

##### **Students**

- David Benavente, MSc, University of Guam, Graduated 2015.
- Rodney Camacho, MSc Candidate, University of Guam, Graduated 2016.
- Matthew McLean, MSc Student, University of Guam, Graduated 2015.
- Steven Johnson, MSc Student, University of Guam, Graduate Fall 2017.
- Jessica Deblieck-Gradyan, MSc Student, University of Guam, 2015.
- Dalia Hernandez-Ortiz, University of Guam MS student.
- Andrew Jarrett, University of Guam MS student.
- Jacques Idechong, MS Student, University of Guam.
- Christy Starsinic, University of Guam MS student.

##### **Post-graduate researchers**

- Javier Cuetos-Bueno, Post-graduate researcher, University of Guam, 2015-2018.

##### **Recent external collaborators**

- John Claussen, Packard Foundation
- Javier Cuetos-Bueno, The Nature Conservancy, Micronesia Program
- Emily Darling, Wildlife Conservation Society
- Yimnang Golbuu, Palau International Coral Reef Research Center
- Alison Green, The Nature Conservancy Coral Triangle Program

- Don Hess, College of the Marshall Islands
- Matt Kendall, NOAA Biogeography and Monitoring Program
- Willy Kostka, Micronesia Conservation Trust
- Trina Leberer, The Nature Conservancy, Micronesia Program
- Jeffery Maynard, Maynard Marine
- Kevin McCann, University of Guelph
- Jennifer McIlwain, Curtin University
- Elizabeth McLeod, The Nature Conservancy
- Takashi Nakamura, University of the Ryukyus
- Kevin Rhodes, University of Hawaii
- Teina Rongo, Cook Islands Office of the Prime Minister
- Brett Taylor, NOAA Pacific Islands Fishery Science Center
- Robert van Woesik, Florida Institute of Technology
- Steven Victor, The Nature Conservancy Micronesia Program
- Rod Salm, The Nature Conservancy
- Alastair Harborne, Florida International University

## XI. Professional References

Dr. Robert van Woesik ([rvw@fit.edu](mailto:rvw@fit.edu))  
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 Melbourne, FL 32935

Dr. Alexander Kerr ([uogmarinelab@gmail.com](mailto:uogmarinelab@gmail.com))  
 Professor, University of Guam Marine Laboratory  
 Mangilao, Guam

Dr. Charles Birkeland ([charlesb@hawaii.edu](mailto:charlesb@hawaii.edu))  
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 University of Hawaii at Manoa  
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Trina Leberer ([tleberer@tnc.org](mailto:tleberer@tnc.org))  
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