

PETER J. MCCARTHY, PH.D.

CONTACT INFORMATION:

Harbor Branch Oceanographic Institute at Florida Atlantic University
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CURRENT POSITION: Research Professor
Center for Marine Biomedical and Biotechnology Research
Harbor Branch Oceanographic Institute at Florida Atlantic University

Associate Director for Education
Harbor Branch Oceanographic Institute at Florida Atlantic University

EDUCATION:

1979-1983	Ph.D. Microbiology, University of Kent, Canterbury, UK. Supervisors: Keith Gull (UKC), Peter Troke (Pfizer UK, Sandwich, Great Britain), Neil Ryder (Sandoz Research Institute, Vienna, Austria)
1976-1979	B.Sc. (Hons) Class II (1) Biochemistry, Victoria University of Manchester, Manchester, UK.

CITIZENSHIP: USA / Great Britain

RESEARCH FOCUS:

- Discovery of novel natural products and enzymes produced by heterotrophic marine-derived microorganisms
- Bacterial pollution in coastal environments
- Microbial ecology of aquatic systems

EXPERIENCE:

2017–present: Co-Director FAU Master of Science program in Marine Science and Oceanography

Developed and co-directs a two-year cross-disciplinary MS program in a broad range of marine sciences. Works on all aspects of program development, recruitment, admissions and scheduling.

2014-present: Associate Director for Education, Harbor Branch Oceanographic Institute at Florida Atlantic University.

Duties include the promotion and enhancement of formal education programs at FAU-Harbor Branch. This includes the development of new programs of study and securing funding to support graduate student education.

2008-present: Research Professor, Center for Marine Biomedical and Biotechnology Research, Harbor Branch Oceanographic Institute at Florida Atlantic University.

Duties include: The establishment and maintenance of an active research program in environmental microbiology and the discovery of novel therapeutic and biotechnological agents from marine microorganisms; establishing and maintaining screens to detect antimicrobial agents including those active against pathogenic bacteria (e.g. MRSA) and fungi; detecting and understanding the role of microorganisms in aquatic environments; supervision of technical staff, post-doctoral scientists, students and volunteers; preparation of progress reports for use by senior management; establishment of annual budgets and operation of research program within budget limits; participation in scientific conferences and panels at the national/international level.

Teaching responsibilities include: a one semester course in Marine Microbiology and Molecular Biology aimed at advanced undergraduate/graduate students; a one semester course in Marine Microbiology; lectures on Microbiology and Drug Discovery for High School students; periodic lectures aimed at a general audience through the Ocean Science Lecture Series; and training of interns in lab-based research projects.

2006-2007: Senior Scientist, Head of Microbiology, Center for Ocean Exploration, HBOI

2002- 2007: Affiliate Professor, Biology Department, Florida Atlantic University

2003-2008: Radiation Safety Officer, Harbor Branch Oceanographic Institution.

2002- 2006: Associate Division Director/Head of Microbiology, DBMR

1996-2002: Group Leader, DBMR Microbiology Laboratory

1994-6: Group Leader, DBMR Screening and Biochemistry Laboratories

1992-4: Group Coordinator, DBMR High-Throughput Screening Laboratory

- 1988-92: Group Coordinator Antifungal Discovery, HBOI/Division of Biomedical Marine Research
- 1985-8 Research Consultant, SeaPharm Project, Harbor Branch Oceanographic Institution: Antifungal Discovery/Marine Microbiology
- 1983-5 Post-Doctoral Research Scientist, Dept. of Natural Products Pharmacology, Smith Kline and French Labs (Supervisors, Drs Louis J. Nisbet and David Newman)
- 1979-83 Ph.D. Student, University of Kent at Canterbury, UK (Supervisor, Dr. Keith Gull) and Sandoz Research Institute Vienna, Austria (Supervisors Drs. Peter F. Troke and Neil S. Ryder).

OTHER PROFESSIONAL ACTIVITIES AND SERVICE ORGANIZATIONS

- 1981 - Present. Member, Society for General Microbiology
- 1983 - Present. Member, American Society for Microbiology
- October 1984. Invited Speaker, Medical Mycology Society of New York. Exploitation of *Candida albicans* peptide transport
- 1992 - Present. Member, Society for Industrial Microbiology
- 1997 - Present. Member, Florida Branch, American Society for Microbiology
- 1999-2001 President-Elect, Florida Branch of the American Society for Microbiology
- 2001-2003 President, Florida Branch of the American Society for Microbiology
- February 2001. Invited Speaker, National Fisheries Institute Conference. Technical Innovation for Seafood Products and Processing. Orlando, FL.
- 2003-2007 National Councilor, American Society for Microbiology
- November 2004. Invited Speaker, World Ocean Forum, New York, NY. The Development of Marine Natural Products as Therapeutic Agents: Challenges and Future Prospects
- November 2004. Panel Member, NOAA-Ocean Exploration Grant Review Panel. Silver Spring MD
- 2005 - Present. Member, Sigma Xi
- April 2005. Invited Speaker, World Congress on Industrial Biotechnology and Bioprocessing. Orlando, FL. Marine Microorganisms in Drug Discovery
- May 2005. Invited Speaker, Connecting the Gulf of Mexico and Human Health. Gulfport, MS. Marine Microorganisms in Drug Discovery
- July 2005. Panel Member, Illinois Sea Grant Review Panel. Champaign, IL
- July 2005. Panel Member, NIUST, Microbial Observatory Grant Review Panel, Oxford MS
- 2006 - Present. Member, International Society for Microbial Ecology

- May 2006 Panel Member, JSOST Workshop on Ocean Priorities, Denver CO.
- September 2006. Panel Member, National Institute for Undersea Science and Technology (NIUST), external review panel for NURP. Oxford, MS
- April 2008. Member, European Commission Grant Review Panel KBBE FP7
- 2008 - Present Advisory Board Member, Biotechnology Program, Keiser University, Port St Lucie Campus
- September 2009 Invited Speaker. Valdosta State University, Biology Department, Valdosta, GA. Sponge-associated microbes: the population and their biotechnological potential
- April 2010 Member, European Commission Grant Review Panel KBBE FP7
- March 2011 Member, European Commission Grant Review Panel KBBE FP7
- January 2012 Member, European Commission Grant Review Panel KBBE FP7
- March 2012 Invited Speaker. Florida Institute of Technology, National Biological Society Tri Beta, Melbourne, FL. The Microbial Population of Marine Sponges: a Biotechnological Resource
- April 2014 Member, European Commission Grant Review Panel H2020 Stage 1
- Sept 2014 Member, European Commission Grant Review Panel H2020 Stage 2
- 2016 – present External Evaluator, ongoing KBBE FP7 and H2020 projects
- 2017 – present Member, Society for Applied Microbiology
-
- Ongoing *Ad hoc* reviewer for: The ISME Journal; Applied and Environmental Microbiology; Letters in Applied Microbiology; Environmental Microbiology; Journal of Chemical Ecology and other journals.
- Ad hoc* grant reviewer for: NSF; SeaGrant; NOAA-Ocean Exploration and other funding agencies.

TEACHING EXPERIENCE:

2017: Master of Science in Marine Science and Oceanography (Co-Director). Developed and implemented a new cross-disciplinary program for Florida Atlantic University

2009: Florida Atlantic University. “Marine Microbiology”. Senior undergraduate and graduate level 3 credit course.

2004 - Present: Florida Atlantic University. BSC 4930 and BSC 6936 “Marine Microbiology and Molecular Biology”. Senior undergraduate and graduate level 4 credit course (lecture and lab). Course offered on an annual basis.

1986: Florida Institute of Technology, Jensen Beach Campus. Medical Lab Technology Program. “Medical Mycology”

High School classes: Two lectures developed for use with High School students. “An Ocean of Microbes: Microbial Influences on Planetary and Human Health” and “Marine Microbes: a New Resource for Biotechnology”

Lecture developed for Envirovet, an annual course taught for Veterinary Students: “Biomedical Marine Research: The Discovery and Development of Marine-Derived Drugs”

AFFILIATE FACULTY AND ADVISORY POSITIONS:

Department of Chemistry, Florida Atlantic University

Department of Biology, Florida Atlantic University

Scientific Advisory Board, PiPets, LLC

Advisory Board for Biotechnology Education, Keiser College

Institutional Biosafety Committee, USDA, ARS, U. S. Horticultural Research Laboratory, Fort Pierce, FL

GRADUATE STUDENTS:

Gabrielle Barbarite	Ph.D. Florida Atlantic University (Degree awarded 2016)
David Bradshaw	Ph.D. Florida Atlantic University
Hunter N. Hines	Ph.D. Bournemouth University, UK (Degree awarded 2019)
Christie Gonzalez	M.S. Florida Atlantic University (Degree awarded 2017)
Carlie Perricone	M.S. Florida Atlantic University (Degree awarded 2017)
Brandon McHenry	M.S. Florida Atlantic University (Degree awarded 2019)
Grace Dodillet	M.S. Florida Atlantic University (Degree awarded 2019)
Stephanie Gravett	M.S. Florida Atlantic University

GRADUATE STUDENT COMMITTEES:

Nealie Newberger	Ph.D. Florida Atlantic University (Degree awarded 2006)
Steven Jett	Ph.D. Florida Atlantic University (Degree awarded 2007)
Priscilla Winder	Ph.D. Florida Atlantic University (Degree awarded 2009)
Shreyasee Chakraborti	M.S. Florida Atlantic University (Degree awarded 2014)
Marie Tarnowski	M.S. Florida Atlantic University (Degree awarded 2014)
Megan Conkling	M.S. Florida Atlantic University (Degree awarded 2018)
Kirstie Tandberg	Ph.D. Florida Atlantic University
Krystyna Powell	M.S. Florida Atlantic University
Amelia Roskar	M.S. Florida Atlantic University (Degree awarded 2019)
Erin Shilling	M.S. Florida Atlantic University
Elizabeth Urban-Gedamke	M.S. Florida Atlantic University

René Miller-Xavier Ph.D. Florida Atlantic University

EXTERNAL EXAMINER

Haïam Morsy Aboul-Ela Ph.D. Alexandria University, Egypt

Rebecca Pike Ph.D. University of Prince Edward Island

POST-DOCTORAL FELLOWS:

1992-1994 Stefan Vasile, Ph.D.

1999-2002 Julie Olson, Ph.D.

2003-2006 Wolfram Bruck, Ph.D.

2008-2010 Jennifer Choate, Ph.D.

PUBLICATIONS:

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Google Scholar: https://scholar.google.com/citations?hl=en&user=aE75PukAAAAJ&view_op=list_works

1. McCarthy, P.J. Peptide transport in *Candida albicans*. Ph.D. Dissertation. University of Kent at Canterbury (1983).
2. McCarthy, P.J., P.F. Troke and K. Gull. Mechanism of action of nikkomycin and the peptide transport system of *Candida albicans*. *J. Gen. Microbiol.*, 131, 775-780 (1985).
3. McCarthy, P.J., L.J. Nisbet, W.D. Kingsbury and J. Boehm. The multiplicity of peptide permeases in *Candida albicans*: Evidence from novel chromogenic peptides. *J. Bacteriology*, 161, 1024-1029, (1985).
4. McCarthy, P.J., D.J. Newman, L.J. Nisbet and W.D. Kingsbury. Relative rates of transport of peptide drugs by *Candida albicans*. *Antimicrob. Ag. Chemother.* 28, 494-499, (1985).
5. Wright, A.E., S. Pomponi, O.J. McConnell, S. Komoto and P. McCarthy. (+)-Curcuphenol, A cytotoxic metabolite with antifungal activity from the marine sponge *Didiscus*. *J. Nat. Products* 50, 976-978, (1987).
6. Wright, A.E., McCarthy, P. and Schulte, G. Sulfircin, a new sesterpene sulfate from the sponge *Ircinia* sp. *J. Org. Chem.* 54, 3472-3474, (1989).
7. Hirsch, S., Miroz, A., McCarthy, P., and Kashman, Y. Etzionin, a new antifungal metabolite from a Red Sea tunicate. *Tet. Letts.* 30, 4291-4294, (1989).

8. Gunasekera, S.P., Gunasekera, M., Gunawardana, G.P., McCarthy, P., and Burres, N. Two new bioactive cyclic peroxides from the marine sponge *Plakortis angulospiculatus*. J. Nat. Prod. 53, 669-674, (1990).
9. Sun, H.H., S. Sakemi, N. Burres and P. McCarthy. Isobatzellines A, B, C and D. Cytotoxic and antifungal pyrroloquinoline alkaloids from the marine sponge *Batzella* sp. J. Org. Chem. 55, 4964-4966, (1990).
10. Gunasekera, S.P., M. Gunasekera and P. McCarthy. Discoderamide: A new bioactive macrocyclic lactam from the marine sponge *Discodermia dissoluta*. J. Org. Chem. 56, 4830-4833 (1991).
11. Wright, A.E., S.A. Pomponi, S.S. Cross and P.J. McCarthy. A new bis-indole-alkaloid from a marine sponge of the genus *Spongisorites*. J. Org. Chem. 57, 4772-4775 (1992).
12. McCarthy, P.J., T.P. Pitts, G.P. Gunawardana, M. Kelly-Borges and S.A. Pomponi. Antifungal activity of meridine, a natural product from the marine sponge *Corticium* sp. J. Nat. Prod. 55, 1664-1668 (1992).
13. McCarthy, P.J. Antifungal Agents: recent research and patent activity. Current Opinion in Therapeutic Patents. 3, 367-373 (1993).
14. Killday, B.K., R. Longley, P.J. McCarthy, S.A. Pomponi, A.E. Wright, R.E. Neale and M.A. Sills. Sesquiterpene derived metabolites from the deep water marine sponge *Poecillastra sollasi*. J. Nat. Prod. 56, 500-507 (1993).
15. Gulavita, N.K., A.E. Wright, P.J. McCarthy, S.A. Pomponi, M. Kelly-Borges, M. Chin and M.A. Sills. Isolation and structure elucidation of 34-sulfato- bastadin-12, an antagonist of the endothelin receptor, from a sponge of the genus *Ianthella*. J.Nat. Prod. 56, 1613-1617 (1993).
16. Gunasekera, S.P., S.A. Pomponi and P.J. McCarthy. Discobahamins A and B, new peptides from the Bahamian deep water sponge *Discodermia* sp. J. Nat. Prod. 57, 79-83 (1994).
17. Wright, A. E. and P. J. McCarthy. Drugs from the sea at Harbor Branch. Sea Technology. 35(8), 10-19 (1994).
18. Gunasekera, S.P., P.J. McCarthy, and M. Kelly-Borges. Hamacanthin A and B, new antifungal bis-indole alkaloids from the marine sponge *Hamacantha* sp. J. Nat. Prod. 57(10), 1437-1441 (1994).
19. Gunasekera, L.S., A.E. Wright, S.P. Gunasekera, P.J. McCarthy and J. Reed. Antimicrobial constituent of the brown alga *Sporochnus pedunculatus*. Int. J. Pharmacognosy 33(3) 253-255 (1995).
20. Gulavita, N.K., A.E. Wright, P.J. McCarthy, S.A. Pomponi and R.E. Longley. Cytotoxic peptides from marine sponges. J. Nat. Tox. 5(2) 225-234 (1996).
21. Gunasekera, S.P., P.J. McCarthy, M. Kelly-Borges, E. Lobkovsky and J. Clardy. Dysidiolide: A novel protein phosphatase inhibitor from the Caribbean sponge *Dysidea etheria* de Laubenfels. J. Am. Chem. Soc. 118, 8759-8760 (1996).

22. Pomponi, S.A., J.K. Reed, A.E. Wright, and P.J. McCarthy. Diversity and bioactivity of marine sponges of the Caribbean: the Turks and Caicos Islands. *Caribbean Journal of Agriculture and Natural Resources* 1(1), 41-49 (1996).
23. McCarthy, P.J., and A.E. Wright. Progress and future challenges in marine biotechnology. *Sea Technology* 38(1), 44-46 (1997).
24. Fuoco, D.M., B. Tucker, R. Wood, N. Rauert, T. Miller, A. Wright, P. McCarthy, S. Pomponi and C. Selitrennikoff. Creating and developing an antifungal drug discovery program from the biotechnology perspective. *SIM News* 47(6), 280-285 (1997).
25. Wood, R.L., T.K. Miller, A. Wright, P. McCarthy, C.S. Taft, S. Pomponi, and C.P. Selitrennikoff. Characterization and optimization of in vitro assay conditions for (1,3) β -glucan synthase activity from *Aspergillus fumigatus* and *Candida albicans* for enzyme inhibition screening. *J. Antibiotics* 51(7), 665-675 (1998).
26. Reed, J.K., S.H. Sennett, P.J. McCarthy, T.A. Pitts, A.E. Wright, and S.A. Pomponi. Bioactivity of marine organisms: Relationships with taxonomy, geography and depth. *Proceedings of the American Academy of Underwater Sciences* 1998, 50-61 (1998).
27. Gunasekera, S.P., P.J. McCarthy, R.E. Longley, S.A. Pomponi, A.E. Wright, E. Lobkovsky, and J. Clardy. Discorhabdin P, a new enzyme inhibitor from a deep water Caribbean sponge of the genus *Batzella*. *J. Nat. Prod.* 62(1), 173-175 (1999).
28. Gunasekera, S.P., P.J. McCarthy, R.E. Longley, S.A. Pomponi and A.E. Wright. Secobatazellines A and B, two new enzyme inhibitors from a deep-water Caribbean sponge of the genus *Batzella*. *J. Nat. Prod.* 62(8), 1208-1211 (1999).
29. Lopez, J.V., P.J. McCarthy, Kathleen E. Janda, R. Willoughby and S.A. Pomponi. Molecular techniques reveal wide phyletic diversity of heterotrophic microbes associated with *Discodermia* spp. (Porifera:Demospongia). *Memoirs of the Queensland Museum* 44 329-341 ISSN 0079-8835 (1999).
30. Pomponi, S., A. Wright, J. Reed and P. McCarthy. Marine natural products: Drugs from the sea. pp 248-251 *In McGraw-Hill Yearbook of Science and Technology 2000* ISSN 0076-2016 (1999).
31. Olson, J. B., C.C. Lord and P. McCarthy. Improved recoverability of microbial colonies from marine environmental samples. *Microb. Ecol.* 40(2) 139-147 (2000).
32. Chen, Y, K.B. Killday, P.J. McCarthy, R. Schimoler, K. Chilson, C. Selitrennikoff, S.A. Pomponi and A.E. Wright. Three new peroxides from the sponge *Plakinistrella* sp. *J. Nat. Prod.* 64(2) 262-264 (2000).
33. Olson, J. B., D. K. Harmody, and P. J. McCarthy. Alpha-proteobacteria cultivated from marine sponges display branching rod morphology. *FEMS Microbiology Letters.* 211(2) 169-173 (2002).

34. Chen, Y., P.J. McCarthy, D.K. Harmody, R. Schimoler-O'Rourke, K. Chilson, C. Selitrennikoff, S.A. Pomponi and A.E. Wright. New bioactive peroxides from marine sponges of the family Plakiniidae. *J. Nat. Prod.* 65 1509-1512 (2002).
35. Sennett, S.H., P.J. McCarthy, A.E. Wright and S.A. Pomponi. Natural products from marine invertebrates: The Harbor Branch Oceanographic Institution experience. *Pharmaceutical News.* 9 483-488 (2002).
36. Sandell, K.A., C.L. Peterson, D.K. Harmody, P.J. McCarthy, S.A. Pomponi, J.V. Lopez (2004). Molecular systematic survey of sponge-derived marine microbes. *Boll Mus Ist Univ Genova* 68:579-585
37. Gunasekera, A.S., K.S. Sfanos, D.K. Harmody, S.A. Pomponi, P.J. McCarthy, J.V. Lopez. HBMMMD: an enhanced database of the microorganisms associated with deeper water marine invertebrates. *Appl. Microbiol. Biotechnol.* 66 373-376 (2005).
38. Sfanos, K.A., C.L. Peterson, D.K. Harmody, P.J. McCarthy, S.A. Pomponi and J.V. Lopez. A molecular systematic survey of sponge-derived marine microbes. *Systematic Appl. Microbiol.* 28:242-264 (2005).
39. Olson J.B., and P.J. McCarthy. Associated bacterial communities of two deep-water sponges. *Aquatic Microb. Ecol.* 30:47-55 (2005).
40. Park, Y.C., S.P. Gunasekera, J.V. Lopez, P.J. McCarthy, and A.E. Wright. Metabolites from the marine-derived fungus *Chromocleista* sp. isolated from the deep-water sediment sample collected in the Gulf of Mexico. *J. Nat. Prod.* 69:580-584 (2006).
41. Sennett, S.H. and P.J. McCarthy. Deep-water marine invertebrates: A source of Pharmaceuticals. *Screening: Trends in Drug Discovery*, 7(4):22-23 (2006).

This article was also published in *BioForum Europe*, October 2006:30-31

42. Duckworth A.R., W.M. Brück, K.E. Janda, T.P. Pitts and P.J. McCarthy. Retention efficiencies of the coral reef sponges *Aplysina lacunosa*, *Callyspongia vaginalis* and *Niphates digitalis* determined by Coulter counter and plate culture analysis. *Marine Biology Research.* 2:243-248 (2006).
43. Olson, J.B., D.K. Harmody, A. Bej, and P.J. McCarthy. *Tsukamurella spongiae* sp. nov., a novel actinomycete isolated from a deep-water marine sponge. *Int. J. Syst. Evol. Microbiol.* 57(7):1478-1481 (2007).
44. Wright, A.E., Cook Botelho, J., Guzmán, E., Harmody, D., Linley, P., McCarthy, P.J., Pitts, T.P, Pomponi, S.A, and Reed, J.K. Neopeltolide a new macrolide from a Lithistid sponge of the family *Neopeltidae*. *J. Nat. Prod.* 70(3):412-416 (2007)
45. Bruck, T.B., W.M. Bruck, L.Z. Santiago-Vazquez, P.J. McCarthy and R.G. Kerr. Diversity of the bacterial communities associated with the azooanthellate deep water octocorals *Leptogorgia minimata*, *lillologorgia scammii* and *Swiftia exertia*. *Marine Biotechnol.* 9:561-576 (2007).

46. Santiago-Vázquez, L.Z., T.B. Brück, W.M. Brück, A.P. Duque-Alarcón, P.J. McCarthy and R.G. Kerr. The diversity of the bacterial communities associated with the azooxanthellate hexacoral *Cirripathes lutkeni*. *ISME Journal*. 1:654-659 (2007).
47. Bruck, W.M., S.H. Sennett, S.A. Pomponi, P. Willenz and P.J. McCarthy. Identification of the bacterial symbiont *Entotheonella* sp. in the mesohyl of the marine sponge *Discodermia* sp. *ISME Journal*. 2:335-339 (2008).
48. Cassler, M., C.L. Peterson, A. Ledger, S.A. Pomponi, A.E. Wright, R. Winegar, P.J. McCarthy, and J.V. Lopez. Use of Real-Time qPCR to quantify members of the unculturable heterotrophic bacterial community in a deep sea marine sponge, *Vetulina* sp. *Microbial Ecology*. 55:384-394 (2008).
49. Lopez, J.V., L. Ranzer, A. Ledger, B. Schoch, A. Duckworth, P.J. McCarthy and R. Kerr. Comparison of Bacterial Diversity within the Coral Reef Sponge, *Axinella corrugata*, the Encrusting Coral *Erythropodium caribaeorum*. Proceedings of the 11th International Coral Reef Symposium, Ft Lauderdale, Florida, 7-11 July 2008.
50. Wright, A.E., S.H. Sennett and P.J. McCarthy. Harbor Branch Oceanographic Institution: Contributions to Pharmacognosy. pp 203-204 In "The American Society of Pharmacognosy: 50 years of progress in natural products research" G.M. Cragg, J.A. Beutler and W.P. Jones (Eds.) American Society for Pharmacognosy (2009).
51. Wright, A.E., G.P.Roth, J.K.Hoffman, D.B. Divlianska, D. Pechter, S.H.Sennett, E.A.Guzmán, P.Linley, P.J.McCarthy, T.P.Pitts, S.A.Pomponi and J.K.Reed. Isolation, Synthesis and Biological activity of Aphrocallistin, an adenine substituted bromotyramine metabolite from the Hexactinellida Sponge *Aphrocallistes Beatrix*. *J. Nat. Prod.* 72(6):1178-1193 (2009).
52. Lopez, J.V., B. Mouzon, P.J. McCarthy and R. Kerr. The many faces of gene expression profiling: Transcriptome analyses applied towards elucidating marine organismal interactions and metabolism. In "Molecular Biotechnology" A. Varma and N. Verma (Eds.) I.K. International Publishing House Pvt. Ltd., New Delhi, India. (2009).
53. Brück, W.M., Brück, T.B., Self, W.T., Reed, J.K., Nitecki, S.S., McCarthy, P.J. Comparison of the anaerobic microbiota of deep water *Geodia* sp. and sandy sediments in the Florida straits. *ISME Journal*. 4:686-699 (2010).
54. Wangun, H.V.K., Wood, A., Fiorella, C., Reed, J., McCarthy, P.J., and Wright, A.E.. Gymnochromes E and F: Cytotoxic Phenanthroperylenequinones from the Deep-water Crinoid *Holopus rangii*. *J. Nat. Prod.* 73:712-5 doi/abs/10.1021/np900526y (2010).
55. Hoffmann, M., Fischer, M., Ottesen, A., McCarthy, P.J., Lopez, J.V., Brown, E.W., and Monday, S.F. Population dynamics of *Vibrio* spp. associated with marine sponge microcosms. *ISME Journal*. 4:1608-1612 (2010).
56. Peak, K.K., Duncan, K.E., Veguilla, W., Luna, V.A., King, D.S., McCarthy, P.J., and Cannons, A.C. *Bacillus* strains most closely-related to *Bacillus nealsonii* are not effectively circumscribed within the taxonomic species definition. *International Journal of Microbiology*. Article ID 673136, 13 pages (2011).

57. Hoffmann, M., S.R. Monday, E.A. Strain, P. Whittaker, M. Naun, P.J. McCarthy, J.V. Lopez, M. Fischer, and E.W. Brown. *Vibrio caribbeanicus* sp. nov., isolated from the marine sponge *Scleritoderma cyanea*. IJSEM 62:1736-1743 DOI10.1099/ijms.0.032375-0 (2012).
58. Bruck, W.M., J.K. Reed and P.J. McCarthy. The bacterial population of the Lithistid sponge *Discodermia* sp. as determined by cultivation and culture-independent methods. Marine Biotechnology 14:762-773 (2012).
59. Hoffmann, M., Monday, S., McCarthy, P., Lopez, J., Fisher, M., and Brown, E. Genetic and phylogenetic evidence for horizontal gene transfer among ecologically disparate groups of marine *Vibrio*. Cladistics 46-64 doi/abs/10.1111/j.1096-0031.2012.00416.x (2013).
60. Zhao, Y., P.J. McCarthy and C. Parkanyi. Synthesis and In Vitro Evaluation of Novel Acyclic and Cyclic Nucleoside Analogs with a Thiadiazole Ring. Organic Chemistry International Article ID 159164, <http://dx.doi.org/10.1155/2013/159164> (2013).
61. Russell, F., D. Harmody, P.J. McCarthy, S.A. Pomponi, and A.E. Wright. Indolo[3,2- α]carbazoles from a deep water sponge of the genus *Asteropus*. doi/10.1021/np400501u J. Nat. Prod. 76(10):1989-1992 (2013).
62. Zhao, Y., P.J. McCarthy and C. Parkanyi. Synthesis and in vitro evaluation of bis-intercalators with varied linkers between aminochloropyrimidine rings. Journal of Heterocyclic Chemistry (2014, doi: 10.1002/jhet.1767).
63. Cuvelier, M.L., E. Smith, R. Mulheron, P. McCarthy, P. Blackwelder, R. L. Vega Thurber, J.V. Lopez. Two distinct microbial communities revealed in the sponge *Cinachyrella*. Frontiers in Microbiology (2014, doi: 10.3389/fmicb.2014.00581). (Impact Factor 4.165 (2016))
64. Hines, H.N., P.J. McCarthy, G.F. Esteban. The first record for the Americas of *Loxodes rex*, a flagship ciliate with an alleged restricted biogeography. Microbial Ecology 71:5-8 (2016) (First published online 2015, doi:10.1007/s00248-015-0656-x) (Impact Factor 3.232 (2016))
65. Barbarite, G., P.J. McCarthy, H. Abeels, and A. Wright. Frequently asked questions about *Vibrio* in Florida. Publication SGEF-228 of the Florida Sea Grant College Program, UF/IFAS Extension. February 2016.
66. Schaefer, A.M., J.S. Reif, E.A. Guzmàn, G.D. Bossart, P. Ottuso, J. Snyder, N. Medalie, R. Rosato, S. Han, P.A. Fair, and P.J. McCarthy. Towards the identification, characterization and experimental culture of *Lacazia loboi* from Atlantic Bottlenose Dolphin (*Tursiops truncatus*) Medical Mycology. (published online 2016, doi: 10.1093/mmy/myw011). (Impact Factor 2.261 (2016))
67. Vilela, R., G.D. Bossart, J.A. St. Leger, L.M. Dalton, J.S. Reif, A.Schaefer, P.J. McCarthy, P.A. Fair, L. Mendoza. A novel uncultivated *Paracoccidioides brasiliensis* type is the etiologic agent of cutaneous granulomas in dolphins. Emerging Infectious Diseases 22(12): 2097-2103, (2016). (Impact Factor 8.22 (2017))
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PO1 CA83155-01 Consortium Group #1: NCI "Combinatorial Creation of New Anticancer Agents" Sherman, U. of Minnesota (PI), 9/99 - 2/04 \$ 95,943 (Annual Direct). Co-Investigator, Project 1

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974984: NSF “Molecular Evolution and Adaptation of Microbial Polyketide Biosynthetic Sequences” Jose Lopez (PI) 9/99 – 8/01 \$81,792. Consultant.

DEB-0103668: NSF “Taxonomic Inventory of Marine Invertebrate Associated Microbes from the Microbial Culture Collection of Harbor Branch Oceanographic Institution”. Jose Lopez (PI) 9/01-8/04 \$208,756. Co-Principal Investigator.

Florida Oceans Initiative “Discovery of novel antibiotic substances from marine-derived microorganisms”. 7/1/04-12/31/07, \$200,000 per annum. Principal Investigator.

SI-08-25: Florida Sea Grant “Development of a Sustainable Biological Production Method for the Potent Cytotoxic Agent Leiodermatolide” 3/1/08 – 2/28/10. \$159,928. Principal Investigator.

1RC2AT005917: NIH, NCCAM “Creation of a Marine Natural Products Library to Enhance Life Science Research” 9/30/2009-9/29/2011. Total costs: \$1,395,199. Co-Investigator.

NSU subcontract “Baseline and Oil Spill Impacted Marine Sponge Microbial Communities and Gene Expression Analysis with Metagenomics” Univ of S. Florida - Florida Institute of Oceanography. 8/2010 - 8/2012. Total Costs \$17,000. Principal Investigator.

HBOI Internal Grants Program (FAU Foundation) “A Collaborative Study of Bacterial Contamination of the Indian River Lagoon”. 7/1/2011 – 6/30/2012. Total Costs \$80,000. Principal Investigator.

HBOI Internal Grants Program (FAU Foundation) “Methods for the analysis and cultivation of *Lacazia lobo*”. 7/1/2011 – 6/30/2012. Total Costs \$36,394. Co-Principal Investigator.

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HBOI Internal Grants Program (Harbor Branch Oceanographic Institute Foundation) “The Pathogenic *Vibrios* in the Indian River Lagoon and their Potential Threat to Human Health”. 10/14-12/15. Total Costs \$12,500. Principal Investigator.

HBOI Internal Grants Program (Harbor Branch Oceanographic Institute Foundation) “Microbial Source Tracking in the Indian River Lagoon”. 10/14-6/15. Total Costs \$25,000. Principal Investigator.

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HBOI Internal Grants Program (FAU Foundation) “Indian River Lagoon Graduate Research Fellowships”. 10/1/14-6/30/15. Total Costs \$89,825.63. Principal Investigator.