

CURRICULUM VITAE

Paul V. Zimba

SSN: (available on request)

References: available upon request

BUSINESS ADDRESS:

PVZimba LLC
14221 Percival St.
Chester, VA 23831

Rice Rivers Center
1000 Cary St, Suite 111
Richmond, VA 23284

RESEARCH AREAS

Algal toxins, ultrasound, aquatic ecosystem ecology, harmful algae, wetlands, aquaculture, microalgal taxonomy and physiology, remote sensing, aquatic ecosystem stressors, cyanobacteria secondary metabolites

EDUCATION:

<u>Degree</u>	<u>Date</u>	<u>Major Field and Institution</u>
Ph.D.	1990	Biological Sciences, Mississippi State University
Summer Fellow	1985	Dept. of Oceanography, Univ. of Hawaii
M.S.	1985	Biological Sciences, Old Dominion University
B.A.	1979	Biological Sciences, Va. Wesleyan College

PROFESSIONAL EXPERIENCE (POSITIONS HELD)

July 2022 – present	Rice Rivers Center Faculty, Va. Commonwealth University, Richmond, VA
March 2021 – present	COO, PVZimba LLC, Chester, VA
March 2021 - present	Advisor, WaterIQ Technologies, Wilson, WY, https://wateriqtech.com/markets/lakes-and-ponds/
Sept 2020 – Feb. 2021	Professor, Center for Coastal Studies, Texas A&M Corpus Christi
September 2015-Sept. 2020	Director, Center for Coastal Studies, Professor, Texas &M Corpus Christi
September 2009- August 2015	Director, Center for Coastal Studies, and Associate Professor, Texas A&M Corpus Christi
March 1996 – August 2009	Research Microbiologist, Agricultural Research Service, U.S.D.A.
November 1988- March 1996	Research Asst. Professor, Post-doc, OPS professional, Dept. of Fisheries, University of Florida
May 1988 - August 1988	Asst. Radiation Safety Officer, Mississippi State University
August 1985 - May 1988	Research Fellow, Mississippi State University
February 1984 - July 1985	Biologist, Horn Pt. Lab, University of Maryland
May 1976 - September 1980	Ordinary Seaman Wiper, Seafarers Intl. Union

Chief Operating Officer, PVZimba, LLC, 14221 Percival St., Chester, VA 23831

Duties and Accomplishments: Consulting company equipped with MS/MS, HPLC, plate readers, and microscopy to conduct HAB research, seagrass studies, and ecophysiological assessment using remote sensing and PAM methods. Current funding includes SPATT toxin assessment, water sample analyses, pigment assessment for phycobilins, cyanobacterial toxin assessment from cultures, pigment profiles of agriculture and weed species, and ultrasound research in Uruguay and Florida.

Director, Center for Coastal Studies, Texas A&M University Corpus Christi

Duties and Accomplishments: Center director for the oldest research unit on campus. Tasked with re-invigorating Center by adding new research areas to Center portfolio. Moved Center from <0.5 to 3.7:1 grant:state funding ratio in three years (and maintained ratio at >3:1 for 11 yrs), while state resources decreased by >40%. Increased publication rate to >3 papers per Center scientist from <1 prior to employment. Personally, secured over \$4.8 million in external funding from national, state, and private sector in addition to \$2,260 K MRI funding from NSF during last five years. Supervision of 10 full time employees and 9 graduate assistants. Chaired seven faculty searches, member on 3 administrative searches, and 8 other search committees. Supervisor: Dean Frank Pezold 361-825-3655.

Research Microbiologist GS-0403-15 (May 2008-August 2009).

Research Microbiologist GS-0403-14 (May 2003 – May 2008).

Research Microbiologist GS-0403-13 (April 1999 – May 2003).

Research Microbiologist GS-0403-12 (April 1996 – April 1999).

Combined Research Duties and Accomplishments: Optimizing fish productivity/water quality relationships (CRIS). Work included ecological analyses of ponds (fish, zooplankton, nutrients, phytoplankton), herbicidal toxicology/discovery for control of harmful algal species, ecophysiology of toxin producing cyanobacteria, and remote sensing approaches to monitor pond phytoplankton composition and physiology. The role of herbicides in altering marsh function (Grant); Role of carotenoids in reducing free radicals in humans (Grant); Control of off-flavor in blue-green algae (Grant). Ground truthing for remote sensing (contract). Toxin production and coral reef degradation by a coralline microbial consortia (Grant). Toxin production by algae in the Salt River Reservoirs, Arizona. Supervision of one full-time technician, one MS student, and 2 summer students. Supervision of up to 4 full time support personnel. Acquired over \$2.3 million in external grants/contracts. (Former Supervisor: Dr. Ken Davis (retired), USDA-ARS, 141 Expt. Station Rd. Stoneville, MS 38776.

Scientist-Control of off-flavors in channel catfish aquaculture systems (CRIS). Secured funding to assess atrazine impacts on marsh plants in Louisiana (USGS). (Supervisor: Dr. Chris Dionigi formerly USDA-ARS-SRRC, current: (202) 513-7243 Asst. Director- National Invasive Species Council, Washington, DC).

SIGNIFICANT TEACHING/MENTORING ACCOMPLISHMENTS (Texas A&M University Corpus Christi)

Courses revised/taught:

Biology 4405, 5412 Limnology, Ecology of Running Waters

Biology 6399 Ecophysiology of Marine Plants

Biology 5399 Separation techniques for biologists

Biology 5431 Phycology

Biology 4590 Marine Biology Field Camp

DIS: Instrumentation (1-3 hrs), Marine Biology (1-3 hrs)

Adjunct faculty member

Loyola University, New Orleans LA 1996-2000

SUNY-Syracuse NY 2006-2009

University of Mississippi 2005-2013

Medical University of South Carolina 2010-2013

Student Mentoring/Advisor

Chair:

Margaret S. Hopson, MS, University of Florida 1993-1996, Univ of Brasilia

Marci L. Savage, MS TAMUCC 2010-2012, Chemist, Testmark
Alexandra Rafalski, MS TAMUCC 2010-2012, PhD graduate Michigan St. Univ.
Maureen Trnka, Ph.D. CMSS, TAMUCC, 2010-2015, NOAA, Washington, DC
Philip Ordner MS TAMUCC 2011-2013, Software Engineer, Mitratech
I-Shuo Huang, MS, TAMUCC 2012-2014, PhD, FDA scientist
Katie LeMay MS TAMUCC 2012-2014
Joe Kowalski PhD student, MARB, TAMUCC 2011-2021, HS teacher
Sean O'Mara MS TAMUCC 2012-2014, PhD graduate Univ of Minn.
Lixin Wang, MS TAMUCC 2013-2016, Laboratory Coordinator, Sam Houston St. Univ.
Susan Shanks, MS TAMUCC 2013-2020
Brittany Kosar, MS TAMUCC 2014-2016, Junior college instructor, Arizona
Jennifer Savicky, MS TAMUCC 2014-2016, Technician, NY University
I-Shuo Huang, PhD, TAMUCC 2014-2019, FDA Washington, DC
Michael Lewis, MS TAMUCC 2016-2018, HS teacher
Adam Chorazyczewski, MS TAMUCC 2016-2018, Technician UC Davis

Member:

Juliette Smith, Ph.D., SUNY-Syracuse 2006-2008; now VIMS/William & Mary
Matthew Bertin, Ph.D., Med. Univ. South Carolina, 2009-2012; now Univ. Rhode Island
Orathai Pongruktham, Ph.D., University of Mississippi, 2007-2012
Kaitlyn Schroeder, Ph.D. MARB, TAMU-CC, 2010-2017, Scientist, DOE
Kelly Correia, MS MARB, TAMU-CC, 2013-2016
Nate Huysman, MS FAMA, TAMU-CC, 2013-2015 now Idaho State Hatchery
Martin Donley, MS ESCI, TAMU-CC, 2011-2018 now Physics teacher, CA high school
Blake Bosch, MS ESCI, TAMU-CC, 2015-2018

REU Supervisor:

Rachel Humphries, TAMUCC, 2009-2011, currently MS student Univ. S. Florida
Angiela Jones, LSAMP TAMUCC, 2012-2013
Tran Le, 2012, REU SURF student
Mikala Cifuentes, Univ. of Dallas, 2011, completed medical school
Jarod Prince, Morehouse College, 2010, REU SURF summer student
David Hunsicker, Northland College, 2010, REU SURF summer student
Diliani Roldan URP Mayaguez, 2013, REU Summer surf student, Teaching Aide
Caitlyn Martinez, LSAMP, TAMUCC, 2014-2015, REU
Kelsey Scott, SUNY Geneseo, 2014, REU SURF student PhD student Univ. of Ohio

Student Awards of note:

Ming Y.T., Su, P. Mehrubeoglu, R. and Zimba, P. 2012. Hyperspectral Analysis of Algae Species in Mixed Media. 3rd place poster, Graduate Student Scholarly Symp., TAMUCC.
Savage, M.L. 2011. Fatty Acid Composition of Six *Euglena sanguinea* strains. WHOI Student Travel Scholarship. \$400
Rafalski, A. 2011. Evaluation of brevetoxin accumulation and degradation in coastal mammals, invertebrates, and fish found moribund on Texas beaches during red tide blooms. Hans and Pat Suter Scholarship. \$900
Savage, M.L. 2011. Optimization of microalgae using 5-ion space methods. Millicent Quaiman Scholarship. \$900
Rafalski, A. 2011. Euglenophycin toxicity to a marine copepod. WHOI Student Travel Scholarship. \$400
Savage, M.L. 2010. Macroalgal chemical composition in the coastal bend. Millicent Quaiman Scholarship. \$1000

- Rafalski, A. 2010. Characterization and detection of a novel heterotrophic dinoflagellate and its toxin. Hans and Pat Suter Scholarship. \$1000
- Huang, I-Shuo. 2014. Isolation of a new to science cyanobacterial toxin. TX SeaGrant. \$1000
- O'Mara, Sean. 2014. Quantitation of fatty acid amides produced by *P. parvum*. Texas Academy of Science. \$2000.
- Huang, I-Shuo. 2014. *Nueces mysidocida gen nov* a new genus and species of cyanobacteria produces the novel toxin mysidophycin. Texas Academy of Science, \$1500.
- Huang, I-Shuo. 2015. Classification of anabaenopeptins, an ignored class of cyanotoxins. TX SeaGrant \$1000.
- Kosar, B. 2015. Ciguatera-toxin concentrations in lionfish. TX SeaGrant \$1000.
- Lawson, B. 2015. Primary productivity of the Nueces salt marsh community. TX SeaGrant \$2000.
- Huang, I-Shuo. 2016. Anabaenopeptin survey. *Phycological Society of America* Research Support. \$1000.
- Ramirez, Lindsey. 2016. Serum stress indicators in terrapins. Texas Academy of Science \$500.
- Huang, I-Shuo. 2017. Climate change/pH effects on toxin-producing freshwater and marine cyanobacteria. Texas Academy of Science \$1500.
- McKay, M. 2017. Paleolimnological evidence for salinity shifts in Baffin Bay TX. Texas Academy of Science \$1,000.
- Bachnak, S. 2015. Regional High School Junior High School Science Winner \$1000 award.
- Kirby, C. 2017. Regional High School Science Fair winner, \$1000 award.
- Bachnak, S. 2017. Regional High School Science Fair Honorable Mention.

RESEARCH GRANT AND CONTRACT AWARDS

1. WaterIQ. 2021-2023. Ultrasound assessment in field settings. \$187,343.00.
2. VARIOUS. 2021-2022. Cyanotoxin analyses. \$95,000.
3. University of Florida. 2021-. Toxin analyses. \$1,850.
4. Texas General Land Office. 2012-2021. TGLO Cooperative Internship Program. \$43,300 annually.
5. Texas General Land Office. 2017-2018. Land-use change in south Texas. CMP \$88,500 (coPI).
6. NOAA ECOHAB. 2017. Mitigation of a HAB using hydrogen peroxide. \$5,000.
7. Coastal Bend Bays Program. 2016-2018. Plastic impacts on coastal Texas estuaries. \$47,500 (CoPI).
8. National Science Foundation. #1626494. 2016. MRI: Acquisition of Hybrid Mass Spectrometer for Geochemistry and Environmental Studies. (co-PI) \$681,416.
9. Texas General Land Office 2015-2017. Nueces Delta Wetland Functionality Study. \$88,997
10. Department of Energy/Lawrence Livermore National Laboratory. 2015-2018. Bacterial-algal symbioses in biofuel production. \$182,500.
11. USEPA/Gulf of Mexico Program #MX00D19214-02014-2016. 2014-2018. Use of Seawater Electrolysis to Build Artificial Reef Habitat: Comparison with Traditional Shell Reefs. \$198,030.
12. Ed Rachal Foundation. 2013-2018. Artificial reef formation using electrolysis. \$190,000.
13. Morris J. Lichtenstein Medical Foundation. 2013-2017. Anti-angiogenesis assessment resulting from euglenophycin exposure. \$313,034.
14. AlgaeVenture Systems. Algal consulting. 2013-2017. Compositional assessment to assist site selection for harvesting. \$176,500.
15. Texas Research and Development Fund. 2013-2014. Post-doctoral Enhancement Support.

\$25,000.

16. Texas Research and Development Fund. 2012-2013. Click chemistry for toxin detection. \$5,000.
17. Photon8. Shell Game Changers Program. 2013. Carbohydrate production by microalgae. \$450,000 (TAMUCC-\$141,500).
18. NSF-NIH/NIES. 2011-2015. OCE 1313558 and1 R01 ES21968-1. Development of a multiplex freshwater cyanotoxin method for cyanotoxin and euglenophycin detection. \$399,092 (co-PI TAMUCC \$267,054).
19. Texas Research and Development Fund. 2012-2013. Post-doctoral Enhancement Support. \$25,000.
20. Harvey Weil Sportsman Conversationalist Award. 2012. The effect of freshwater cyanobacterial toxins on crab abundance. \$4,000.
21. Texas SeaGrant. 2012-2014. The toxin(s) of the Texas brown tide organism *Aureoumbra lagunensis*, and its impacts on shellfish. \$155,600.
22. Texas SeaGrant. 2011-2013. Brevetoxin in beached moribund fish. \$10,000.
23. Sonic Solutions. 2011. Evaluation of ultrasound efficacy using TEM. \$1,000.
24. Savannah River National Laboratory. 2011-2012. Risk Assessment of Algal Production Systems: Impacts on Growth, Biomass/Lipid Quality, and Bioactive Metabolites. DOE (EERE) pass thru funding. \$2,321,232 (co PI \$163,056).
25. Gulf of Mexico Program. 2011-2012. Food habits and food webs of high Hg content commercially and recreationally harvested fishes in the Gulf of Mexico. \$64,055.
26. U.S. Geological Survey. 2010-2011. Survey of Sediment Toxicity in U.S. Coastal Estuaries. \$31,232.
27. Texas SeaGrant. 2010-2011. Brevetoxin in beached fishes. \$10,000.
28. U.S. Geological Survey. 2009-2010. Survey of Sediment Toxicity in U.S. Coastal Estuaries. \$31,232.
29. Klubec Koi LLC. 2010. Identification of harmful algal blooms in koi ponds. \$4,900.
30. U.S EPA. 2010-2011. Production of ¹⁵N Cylindrospermopsin. \$42,600.
31. Morris J. Lichtenstein Medical Foundation. 2010-2011. Euglenophycin synthesis and anti-cancer evaluation. \$238,060.
32. Texas General Land Office. 2009-2010. TGLO Cooperative Internship Program. \$36,300.
33. Texas Research and Development Fund 2011. Brevetoxin in beached moribund fish. \$26,052.
34. NSF Major Research Instrumentation.0959654. 2010-2012. Acquisition of equipment for evaluation of biochemical and culture properties of microalgae. \$586,849 (co-PI \$238,000).
35. Texas Research Development Fund. 2009. Assessment of Primary Producer Components within the South Texas Coastal Bend. \$12,000.
36. Arizona Game and Fish Department.2007-2009. Isolation of toxins from *Prymnesium parvum*. \$70,000.
37. USDA/CSREES Program. 2008-2011. Assessment of steroid composition of reproductively competent fishes. \$26,532.
38. University of Arizona. 2006-2007. Isolation of cyanotoxic species from the Salt River. \$7,000.
39. University of Michigan. 2004-2007 Quantification of microcystin from potable waters. \$425,800 (subcontract \$22,000).
40. Florida International University/NIH. 2005-2007. Identification of microcystins produced by *Phormidium*-the causative organism in coralline black band disease. \$321,680 (subcontract \$27,500).
41. Miss. St. Univ. 2001-2006. Assessment of remote sensing to manage problematic algal

- species in catfish ponds. \$158,300 (co-PI \$16,400).
42. South Carolina Cancer Institute. 2003-2005. Assessment of antioxidant properties of algal pigments. \$64,564 (subcontract \$22,400).
 43. SRAC program 1998-2002. Control of blue-green algae in aquaculture ponds. U.S.D.A. competitive research grant program. \$142,500 (co-PI \$43,200).
 44. United States Geological Survey (NAWQA Program) 1998-2000. The role of atrazine in altering marsh function in downstream Mississippi River waters. 1999-2001. \$80,000.
 45. Jones, Edmunds and Assoc. 1997. Modeling chlorophyll and nutrients in Florida streams. \$3,695
 46. Saint Johns Water Management District. 1995-1996. Modeling water quality, submersed light, and nutrients in the Indian River Lagoon. \$59,984 (co-PI \$2,330).
 47. U.S. Environmental Protection Agency (EMAP). 1995. Water column nutrient analyses and particulate carbon and nitrogen analyses. \$7,140
 48. Florida Dept. of Environmental Protection (FMRI). 1994-1995. Nutrient analyses in Florida bay. \$4, 350
 49. Florida Dept. of Environmental Protection (FMRI). 1994-1995. Seagrass/light/microalgal relationships in Florida Bay. \$67,000
 50. Saint Johns Water Management District. 1993-1995. Light quality/submersed macrophyte relationships in the Indian River Lagoon. \$362,455 (co-PI \$123,500).
 51. Jones, Edmunds, and Assoc. 1993. Periphyton analyses of south Florida streams. \$14,100
 52. South Florida Water Management District. 1989-1991. Ecological studies of the littoral and pelagic communities of Lake Okeechobee, Fl. Epiphytes, Submersed Plants, Benthic Algal Mats. \$4,852,450 (co-PI 289,433).
 53. South Florida Water Management District. 1990. Phosphorus dynamics in upland marsh habitats. \$22,280 (co-PI).
 54. Bureau of Land Reclamation. 1990. Phytoplankton Composition of Stanley Lake, CO \$1,600.
 55. Bureau of Reclamation. 1990-1991. Phytoplankton composition of Colorado River reservoirs. \$10,800.
 56. Mississippi State University. 1985-1988. Predoctoral Research Fellowship \$30,000.
 57. MS-AL Sea Grant Fellow. 1987-1988. \$6,100.
 58. MS-AL Sea Grant Fellow. 1986-1987. \$5,852.
 59. Horns Point Laboratory. Phytoplankton and periphyton analyses. 1985-1988. \$4,400.
 60. University of Hawaii. Summer Fellow Research. 1985. \$3,300.

THESES/DISSERTATIONS:

MS: The distribution of *Ceratium* spp. over the mid-Atlantic Bight. Biological Sciences, Old Dominion University, Norfolk, VA 1985

PhD: Production dynamics, community structure, and carbon metabolism of phytoplankton and subtidal microalgae in a Mississippi salt marsh. Biological Sciences, Mississippi State University, Mississippi State, MS 1990

PUBLICATIONS:

Peer-Reviewed Journal Articles and Patents:

1. *Asquith, A., Altig, R., and Zimba, P.V.* 1987. Geographic variation in the mating call of the green treefrog *Hyla cinera*. *Am. Midl. Nat.* 119:101-110.
2. *Zimba, P.V., Sullivan, M.J., and Glover, H.E.* 1990. Carbon fixation in cultured marine benthic diatoms. *J. Phycol.* 26:306-311.
3. *Zimba, P.V., Hopson, M.S. and Colle, D.E.* 1993. Elemental composition of five submersed plants from Lake Okeechobee, FL. *J. Aquatic Plant Manage.* 31:137-140.
4. *Hopson, M.S. & Zimba, P.V.* 1993. Temporal variation in submersed plant biomass, Lake Okeechobee, Florida. *J. Aquatic Plant Manage.* 31:76-81.

5. Philips, E.J., Zimba, P.V., Hopson, M.S., and Crisman, T.L. 1993. Dynamics of the plankton community in submerged plant dominated regions of Lake Okeechobee, Florida. *Verh. Int. Verein Limnol.* 25:423-426.
6. Philips, E.J., Aldridge, F.J., Zimba, P.V., Innat, J., Conroy, M., and Ritter, P. 1993. Zonation patterns of phytoplankton and nutrients in Lake Okeechobee, Florida. *Archiv fuer Hydrobiologie* 128:437-458.
7. Conley, D.J., Zimba, P.V., and Theriot, E. 1994. Silica content of freshwater and marine benthic diatoms. *Memoirs Cal. Acad. Sci.* 17:95-101.
8. Zimba, P.V. 1995. Epiphytic algal biomass of the littoral zone, Lake Okeechobee, Florida (USA). *Archiv fuer Hydrobiologie Beih.* 45:233-240.
9. Zimba, P.V., Hopson, M.S., Smith, J., Colle, J.V., and Shireman, J.V. 1995. Chemical composition and distribution of submersed aquatic vegetation in Lake Okeechobee, FL (1989-1991). *Archiv fuer Hydrobiologie* 45:241-246.
10. Harris, T.T., Williges, K.A., and Zimba, P.V. 1995. Primary productivity and decomposition rates of five emergent macrophyte communities in the Lake Okeechobee marsh system. *Archiv fuer Hydrobiologie* 45:63-78.
11. Zimba, P.V. and Bates, S.R. 1996. Mineralogical and microscopic analyses of material deposited on submersed macrophytes in Florida lakes. *Hydrobiologia* 340:37-41.
12. Zimba, P.V. and Hopson, M.S. 1997. Quantification of epiphyte removal efficiency from five submersed plant species. *Aquatic Botany* 58:173-179.
13. Hopson, M.S., Zimba, P.V., Philips, E.A., Fernandes, C.A., and Davis, J.S. 1998. Temporal variations in biomass of the algal epiphytes associated with the dominant submersed macrophytes in Lake Okeechobee, Florida (U.S.A.). *Verh. Int. Verein Limnol.* (International Society of Limnology) 26:1736-1740.
14. Lloyd, S.W., Lea, J.K., Zimba, P.V., and Grimm, C.C. 1998. Rapid analysis of geosmin and 2-methylisoborneol in freshwater using solid-phase micro-extraction procedures. *Water Research* 32:2140-2146.
15. Zimba, P.V. 1998. Use of nutrient enrichment bioassays to identify nutrients limiting epiphytic growth in Lake Okeechobee, Florida: confirmation of silica and nitrogen limitation. *Archiv fuer Hydrobiologie* 141:459-468.
16. Zimba, P.V., Dionigi, C.P., and Millie, D.F. 1999. Evaluating the relationship between photopigment synthesis and 2-methylisoborneol accumulation in cyanobacteria. *J. Phycol.* 35:1422-1429.
17. Schrader, K.K., Duke, S.O., Kingsbury, S.K., Tucker, C.S., Duke, M.V., Dionigi, C.P., Millie, D.F., and Zimba, P.V. 2000. Evaluation of ferulate for controlling the musty odor cyanobacterium *Oscillatoria perornata* in aquaculture ponds. *J. Applied Aquaculture* 10:1-16.
18. Grimm, C.C., Lloyd, S.L., Batista, R., and Zimba, P.V. 2001. Using MD/SPME/GC/MS for analyzing fish tissue. *Journal of Chromatographic Science* 38:289-295.
19. Zimba, P.V., Dionigi, C.P., and Brashear, S.S. 2001. Selective toxicity of exogenous l-lysine to cyanobacteria, relative to a chlorophyte and a diatom. *Phycologia* 40:483-486.
20. Zimba, P.V., Grimm, C.C., Dionigi, C.P., and Weirich, C. 2001. Phytoplankton biomass, off-flavor:pigment relationships in Louisiana catfish aquaculture ponds. *J. World Aquaculture Society* 96-104.
21. Zimba, P.V., Khoo, L., Gaunt, P.S., Brittain, S., and Carmichael, W.W. 2001. Confirmation of catfish, *Ictalurus punctatus* (Rafinesque), mortality from *Microcystis* toxins. *J. Fish Dis.* 24:41-47.
22. Mischke, C. and Zimba, P.V. 2001. Assessment of zooplankton size fractionation for monitoring fry and fingerling culture ponds. *North American Journal of Aquaculture* 63:289-292.
23. Zimba, P.V., Tucker, C.S., Mischke, C.C., and Grimm, C.C. 2002. Short-term effect of

- diuron on catfish production pond ecology. *North American Journal of Aquaculture* 64:16-23.
24. Zimba, P.V., Bowie, S., Chatham, M.E., and Nonneman, D.S. 2002. Variants of microcystin in southeastern USA catfish production ponds. *Verh. Internationale Limnologie Verein.*28:1163-1166.
 25. Nonneman, D. and Zimba, P.V. 2002. A PCR-based test to assess the potential for microcystin occurrence in channel catfish production ponds. *J. Phycology* 38:230-233.
 26. Hapeman, C.J., Dionigi, C.P., Zimba, P.V., and McConnell, L.L. 2002. Agrochemical and nutrient impacts on estuaries and other aquatic systems. *J. Ag. and Food Chemistry* 50:4382-4384.
 27. Zimba, P.V., Mischke, C.C., and Brashear, S.S. 2003. Pond-age water column trophic relationships in channel catfish *Ictalurus punctatus* production ponds. *Aquaculture* 219:291-301.
 28. Zimba, P.V. and Grimm, C.C. 2003. A synoptic survey of musty/muddy odor metabolites and microcystin toxin occurrence and concentration in southeastern USA channel catfish (*Ictalurus punctatus* Rafinesque) production ponds. *Aquaculture* 218:81-87.
 29. Ritchie, J.E., Zimba, P.V., and Everitt, J. 2003. Remote sensing methods to assess water quality. *Photogrammetric Engineering and Remote Sensing* 69:695-705.
 30. Mischke, C.C., Li, M., and Zimba, P.V. 2004. Nutrient enrichment does not alter zooplankton chemical composition in catfish fingerling ponds. *North American Journal of Aquaculture*. 43:34-46.
 31. Mischke, C.C. and Zimba, P.V. 2004. Plankton community responses in earthen channel catfish nursery ponds under various fertilization regimes. *Aquaculture* 233:219-235.
 32. Zimba, P.V., Rowan, M., and Triemer, R.E. 2004. Identification of euglenoid algae that produce ichthyotoxin(s). *J. Fish Diseases* 65:35-38.
 33. Teas, J., Hebert, J.R., Fitton, H., and Zimba, P.V. 2004. Algae-a poor man's HAART? *Medical Hypotheses* 62:507-510.
 34. Grimm, C.C., Lloyd, S.L., and Zimba, P.V. 2004. Instrumental versus sensory detection of off-flavors in farm raised channel catfish. *Aquaculture* 236: 309-319.
 35. Thomson, S.J., Zimba, P.V., Bryson, C.T., and Alarcon-Calderon, V.J. 2005. Potential for remote sensing from agricultural aircraft using digital video. *Applied Eng. In Agriculture* 21:531-537.
 36. Mischke, C. C., Wise, D.J., Steeby, J., and Zimba, P.V. 2006. Effects of smallmouth buffalo and potassium permanganate treatment on plankton and pond water quality. *North American Journal of Aquaculture* 68:36-40.
 37. Zimba, P.V. and Gitelson, A.A. 2006. Remote estimation of chlorophyll in hyper-eutrophic aquatic systems: modeling tuning and accuracy estimation. *Aquaculture* 256:272-286.
 38. Zimba, P.V., Camus, A., Allen E.H., and Burkholder, J.M. 2006. Co-occurrence of white shrimp, *Penaeus vannamei*, mortalities and microcystin toxin in a southeastern USA shrimp facility. *Aquaculture* 261:1048-1055.
 39. Danaher, J., Tidwell, J.H., McCoyle, S.D., Disgupta, S., and Zimba, P.V. 2007. Effects of two densities of caged monosex *Nile tilapia* on water quality, phytoplankton populations, and production when polycultured with *Macrobrachium rosenbergii* in temperate ponds. *Journal of the World Aquaculture Society* 38:367-382.
 40. Burkholder, J.M., Hallegraef, G.M., Melia, G., Cohen, A., Bowers, H., Oldach, D.A., Parrow, M.W., Sullivan, M.J., Zimba, P.V., and Mallin, M.A. 2007. Phytoplankton and bacterial assemblages in ballast water of US military ships as a function of port of origin, voyage time, and ocean exchange practices. *Harmful Algae* 6:486-518.
 41. Richardson, L.L., Sekar, R., Meyers, J.L., Gantar, M., Voss, J.D., Kaczmarzky, L., Remily, E.R., Boyer, G.L., and Zimba, P.V. 2007. The presence of the cyanobacterial

- toxin microcystin in black band disease of corals. *Federation of European Microbiological Sciences Microbiological Letters* 272:182-187.
42. Stchapit, E., Ochs, C.A., and Zimba, P.V. 2008. Spatial and temporal variation in phytoplankton structure in a southeastern U.S. reservoir determined by HPLC and light microscopy. *Hydrobiologia* 600:215-228.
 43. Li, M.H., Robinson, E.H., Oberle, D.F., and Zimba, P.V. 2008. Effects of various dietary carotenoid pigments on fillet appearance and pigment absorption in channel catfish *Ictalurus punctatus*. *J. World Aquaculture Soc.* 38: 557-563.
 44. Bucollo, A.P., Sullivan, M.J., and Zimba, P.V. 2008. Effects of nutrient enrichment on primary production and biomass of sediment microalgae in a subtropical seagrass bed. *Journal of Phycology* 44:874-881.
 45. Johnson, R.M., Viator, R.P., Veremis, J.C., Richard, E.P., and Zimba, P.V. 2008. Discrimination of sugarcane varieties with pigment ratios and high resolution hyperspectral leaf reflectance data. *J. Assoc. Sugar Cane Technologists* 28:63-75.
 46. Smith, J.L., Boyer, G.L., and Zimba, P.V. 2008. A review of cyanobacterial odorous and bioactive metabolites: impacts and management alternatives in aquaculture. *Aquaculture* 280:5-20.
 47. Sassengrath, G.E., Heilman, P., Luschei, E., Bennett, G.L., Fitzgerald, G., Klesius, P., Tracy, W., Williford, J.R., and Zimba, P.V. 2008. Technology, complexity and change in agricultural production systems. *Renewable Agriculture and Food Systems*. 23: 285–295.
 48. Mischke, C.C. Wise, D.J., and Zimba, P.V. 2009. Impact of copper sulfate on plankton in channel catfish nursery ponds. *J. World Aquaculture Society* 40:122-128.
 49. Mischke, C.C. and Zimba, P.V. 2009. Influence of fertilizer nitrogen types on water quality. *Aquaculture Research* 40:1-5.
 50. Hurlburt, B.K., Brashear, S.S., Lloyd, S.L., Grimm, C.C., Zimba, P.V., and Thomson, J.L. 2009. The impact of weather on off-flavor episodes at a commercial catfish farm. *Aquaculture Research* 40:566-574.
 51. Brostoff, W.N., J.G. Holmquist, J.G., Schmidt-Gengenbach, J. and Zimba, P.V. 2010. Fairy, tadpole, and clam shrimps (Branchiopoda) in seasonally inundated playas in the western Mojave Desert and effect on primary producers. *J. Saline Systems* 6:11.
 52. Radomski, A. and Zimba, P.V. 2010 Does pond water reflectance influence double-crested cormorant selection of aquaculture ponds? *J. World Aquaculture Society* 41:430-437.
 53. Zimba, P.V., Moeller, P.D., Beauchesne, K.B., Lane, H.E., and Triemer, R.E. 2010. Euglenophycin- a novel toxin produced by certain Euglenophyceae. *Toxicon* 55:100-104.
 54. Smith, J.L., Schultz, K., Zimba, P.V. and Boyer, G.L. 2010. Possible mechanism for the foodweb transfer of covalently-bound microcystins. *Ecotoxicology and Environmental Safety* 75:657-671.
 55. Grisham, M.P., Johnson, R.M., and Zimba, P.V. 2010. Detecting sugarcane yellow leaf virus infection in asymptomatic leaves with hyperspectral remote sensing and associated leaf pigment analysis. *Journal of Virological Methods* 167:140-145.
 56. Zablutowicz, R.M., Zimba, P.V., Locke, M.A., Lizotte Jr, R.E., Knight, S.S., Gordon, R.E. 2010. Effects of land management practices on water quality in Mississippi Delta Oxbow Lakes: Biochemical and microbiological aspects. *Agriculture, Ecosystems and Environment* 139: 214-223.
 57. Zimba, P.V., Beauchesne, K.R., Moeller, P.D., and Triemer, R.E. 2011. Patent 7,943,142B2.Euglenoid derived alkaloid.
 58. Hurlburt, B.K., Brashear, S., and Zimba, P.V. 2011. Detection of cyanobacteria in closed water systems in southern Louisiana (USA). *Water* 3:79-86.

59. Zimba, P.V., Schrader, K.K., Hyldig, G., Strobel, B.W., and Jorgensen, N.O.G. 2011. Evaluation of geosmin and 2-methylisoborneol off-flavour in smoked rainbow trout fillets using instrumental and sensory analyses. *Aquaculture Research* 2011:1-5.
60. Hill, E.M., Nicolau, B.A., and Zimba, P.V. 2011. History of water availability and habitat improvement in the Nueces Estuary, Texas, USA. *Texas Water Journal* 2:97-111.
61. Zimba, P.V. 2012. An improved method for phycobilin analysis. *Harmful Algae* 17:35-39.
62. Bertin, M.J., Zimba, P.V., Beauchesne, K.R., Huncik, K.M., and Moeller, P.D.R. 2012. Identification of toxic fatty acid amides isolated from the harmful alga *Prymnesium parvum* Carter. *Harmful Algae* 20:111-116.
63. Bertin, M.J., Zimba, P.V., Beauchesne, K.R., Huncik, K.M., and Moeller, P.D.R. 2012. The contribution of fatty acid amides to *Prymnesium parvum* Carter toxicity. *Harmful Algae* 20:117-125.
64. Ochs, C.A., Pongruktham, O., and Zimba, P.V. 2013. Darkness at the break of noon: phytoplankton production in the lower Mississippi River. *Limnol. Oceanogr.* 58: 555–568.
65. Gutierrez, D., Rafalski, A., Moeller, P., Beauchesne, K., and Zimba, P.V. 2013. Quantitative mass spectrometric analysis and post-extraction stability assessment of the euglenoid toxin euglenophycin. *Toxins* 5:1587-1596.
66. Omoregie, S.N., Omoruyi, F., Wright, V., Jones, L., and Zimba, P.V. 2013. Anticancer activities of lesser galangal (*Alpinia officinarum* Hance Jam1), turmeric (*Curcuma longa* L.) and ginger (*Zingiber officinale* Rosc.) against acute monocytic leukemia. *J. Medicinal Food* 16:647-655.
67. Mehrubeoglu, R., Teng, M.Y., and Zimba, P.V. 2014. Resolving mixed algal species in hyperspectral images. *Sensors* 14: 1-21; doi:10.3390/s140100001
68. Wahome, P.G., Beauchesne, K.R., Pedone, A.C., Cavanagh, J., Melander, C., Zimba, P. and Moeller, P.D.R. 2015. Augmenting anti-cancer natural products with a small molecule adjuvant. *Marine Drugs* 13:65-75.
69. Zimba, P.V. and Grimm, C.C. 2015. Statistical approaches to optimize detection of MIB off-flavor in aquaculture raised channel catfish. *J. Aquaculture Res Develop.* <http://dx.doi.org/10.4172/2155-9546.1000319>
70. Gutierrez, D.B., Fahlman, A., Gardner, M., Kleinhenz, D., Piscitell, M., Raverty, S., Haulena, M., and Zimba, P.V. 2015. Phosphatidylcholine composition of pulmonary surfactant from terrestrial and marine diving mammals. *Respiratory Physiology and Neurobiology* 211:29-36.
71. Fern, R., Withers, K., Zimba, P.V., Wood, T. and Schoech, L. 2015. Toxicity of three dispersants along and in combination with crude oil in blue crab *Callinectes sapidus* megalopae. *Southeastern Naturalist* 14(4):G82–G92.
72. O’Neil, E., Trick, M., Hill, L., Rejzek, M., Dursi, R., Hamilton, C., Zimba, P.V., Henrissat, B., and Field, R. 2015. The transcriptome of *Euglena gracilis* reveals unexpected metabolic capabilities for carbohydrate and natural product biochemistry. *Molecular BioSystems* 11:2808-2820. DOI 10.1039/C5MB00319A.
73. Zimba, P.V., Ordner, P. and Gutierrez, D. 2016. Selective toxicity and angiogenic inhibition by euglenophycin: A role in cancer therapy? *J of Cancer Biology and Treatment* 3:08.
74. Pragnell, D.I., Castro, L.F., Ali, A.A., Browdy, C.L., Zimba, P.V., Laramore, S.E., and Samocha, T.M. 2016. Some limiting factors in production of juvenile white shrimp, *Litopenaeus vannamei*, in biofloc dominated systems. *J. World Aquaculture Society* 47:396-413. doi:10.1111/jwas12275.

75. Zimba, P.V., Hill, E.M., and Withers, K. 2016. Benthic microalgae serve as the major food resource for porcelain crabs (*Petrolisthes* spp.) in oyster reefs: gut content and pigment evidence. *J. Exp. Mar. Biol. Ecol.* 483:53-58.
76. Bertin, M.J., Zimba, P.V., He, H., and Moeller, P.D.R. 2016. Trichophycin A, a cytotoxic linear polyketide isolated from a *Trichodesmium thiebautii* bloom. *Mar. Drugs* 15: 10. doi:10.3390/md15010010.
77. Marwah, P., Zimba, P.V., and Marwah, A. 2016. Provisional patent title: Controlling formation of metal adduct ions in mass spectrometry. Application No.: 62/376,802
78. Zimba, P.V., Huang, I-S., Foley, J., and Linton, E. 2017. Identification of a new to science cyanobacterium, *Toxifilum mysidocida* GEN NOV & SP NOV (Cyanobacteria, Cyanophyceae). *J Phycol.* doi: 10.1111/jpy.12490.
79. Byrd, S.M.M., Burkholder, J.M. and Zimba, P.V. 2017. Environmental stressors and lipid production by *Dunaliella* spp. I. Salinity. *J. Exp. Mar. Biol. Ecol.* 487:33-44. <http://dx.doi.org/10.1016/j.jembe.2016.11.004>
80. Zimba, P.V., Huang, I-S., Gutierrez, D., Shin, W.S., Bennett, M., and Triemer, R. 2017. Euglenophycin is produced in at least six species of euglenoid algae and six of seven strains of *Euglena sanguinea*. *Harmful Algae* 63:79-84. DOI 10.1016/j.hal.2017.01.010
81. Zhang, H. and Zimba, P.V. 2017. Analyzing the effects of estuarine freshwater fluxes on fish abundance using artificial network assemblies. *Ecol. Modelling* 359:103-116.
82. Bertin, M.J., Roduit, A.F., Sun, J., Alves, G.E., Via, C.W., Gonzalez, M.A., Zimba, P.V., and Moeller, P.D.R. 2017. Structure revision of trichotoxin, chlorinated polyketide isolated from a *Trichodesmium thiebautii* bloom. *Tetrahedron Letters* 52:5864-5867.
83. Steffen, M.M., Davis, T.W., Stough, J.M.A., McKay, R.M.L., Bullerjahn, G.S., Krausfeldt, L.E., Neitzey, M.L., Gilbert, N.E., Boyer, G.L., Johengen, T.H., Gossiaux, D.C., Burtner, A.M., Palladino, D., Rowe, M.D., Dick, G.J., Meyer, K.A., Levy, S., Boone, B., Stumpf, R.P., Wynne, T.T., Zimba, P.V., Gutierrez, D., and Wilhelm, S.W. 2017. Ecophysiological examination of the Lake Erie *Microcystis* bloom in 2014: linkages between biology and the water supply shutdown of Toledo, OH. *Env. Science Technol.* 51:6745-6755
84. Bertin, M.J., Roduit, A.F., Sun, J., Alves, G.E., Via, C.W., Gonzalez, M.A., Zimba, P.V., and Moeller, P.D.R. 2017. Tricholides A and B and Unnarmicin D: New hybrid PKS-NRPS macrocycles isolated from an environmental collection of *Trichodesmium thiebautii*. *Marine Drugs* 15:206. doi 10.3390/md15070206
85. Zhang, H., Gorelick, S.M., Zimba, P.V., Zhang, X. 2017. An Integrated Remote Sensing Method for Estimating Reservoir Area and Evaporation Loss. *J. Hydrology* 555:213-227.
86. Belisle, R., Via, C.W., Schock, T.B., Villareal, T.A., Zimba, P.V., Beauchesne, K.R., Moeller, P.D.R., and Bertin, M.J. 2017. Trichothiazole A, a dichlorinated polyketide featuring an embedded thiazole isolated from *Trichodesmium thiebautii* blooms. *Tetrahedron Letters* 58:4066-40568.
87. Cabang, A.B., De Mukhopadhyay, K., Meyers, S., Morris, J., Zimba, P.V., and Wargovich, M.J. 2017. Therapeutic effects of the Euglenoid ichthyotoxin, euglenophycin, in colon cancer. *Oncotarget*. 8:104347-103358.
88. Buttke, D.E., Walker, A., Huang, I-S., Flewelling, L., Lankton, J., Ballman, A.E., Clapp, T., Lindsay, J. and Zimba, P.V. 2017. Green Tree Frog (*Hyla cinerea*) and Ground Squirrel (*Xerospermophilus spilosoma*) mortality attributed to inland brevetoxin transportation at Padre Island National Seashore, Texas, 2015. *Journal of Wildlife Diseases* 54(1). DOI: 10.7589/2017-01-018.
89. Chia, M.A., Jankowiak, J.G., Kramer, B.J., Goleski, J.A., Huang, I-S., Zimba, P.V., Bitten-Court, M., and Gobler, C.J. 2018. Succession and toxicity of *Microcystis* and *Anabaena (Dolichospermum)* blooms are controlled by nutrient-dependent allelopathic interactions. *Harmful Algae* 74:67-77.

90. Via, C., Glukhov, E., Costa, S., Zimba, P.V., Moeller, P.D.R., Gerwick, W., Bertin, M. 2018. The Metabolome of a Cyanobacterial Bloom Visualized by MS/MS-Based Molecular Networking Reveals New Neurotoxic Smenamide Analogs (C, D, and E). *Frontiers in Chemistry* doi.10.3389/fchem.2018.00316.
91. Kowalski, J.L., DeYoe, H.R., Boza, Jr., G.H., Hockaday, D.L., and Zimba, P.V. in press. A comparison of Hurricanes Dolly and Alex and their effects on the water column of a Texas lagoon. *J. Coastal Res.* 34: 1429-1438.
92. Beaver, J.R., Kirsch, J.E., Tausz, C.E., Samples, E.E., Renicker, T.R., Scotese, K.C., McMaster, H.A., Blasius-Wert, B.J., Zimba, P.V., and Casamatta, D.A. 2018. Long-term trends in seasonal plankton dynamics in Lake Mead (Nevada-Arizona, USA) and implications for climate change. *Hydrobiologia* doi.org/10.1007/s10750-018-3638-4.
93. Huang, I-S. and Zimba, P.V. 2018.. Cyanobacterial bioactive metabolites - a review of their chemistry and biology. *Harmful Algae* 43:49-82.
94. He, H., Bertin, M.J., Wu, S.B., Wahome, P.G., Beauchesne, K.R., Zimba, P.V., Moeller, P.D.R., Sauri, J., and Carter, G.T. 2018. Cyanobufalins: novel cardioactive toxins from cyanobacterial blooms. *J. Nat. Products* 81: 2576-2581.
95. Schoech, L.A., Fern, R., Withers, K., and Zimba, P.V. 2019. Scope for growth of Texas Bay scallop *Argopecten irradians amplicostatus*. *Journal of Applied Aquaculture* 31: 140-152.
96. Kimbrel, J.A., Samo, T., Ward, C.Nilson, D., Thelen, M.P., Siccardi, A., Zimba, P.V., Lane, T., Miyali, A. 2019. Host selection and stochastic effects influence bacterial community assembly on the microalgal phycosphere. *Algal Research* 40, 101489.
97. Zhang, H., Zimba, P.V., Nzewi, E.U. 2019. A new pseudoinvariant near-infrared threshold method for relative radiometric correction of aerial imagery. *Remote Sensing* 11: 1931-1937.
98. McKindles, K.M., Zimba, P.V., Chiu, A.S., Watson, S.B., Gutierrez, D.B., Westrick, J., Kling, H., and T.W. Davis. 2019. A multiplex analysis of potentially toxic cyanobacteria in Lake Winnipeg during the 2013 bloom season. *Toxins* 11 (10), 587.
99. Zhang, H., Georelick, S.M., and Zimba, P.V. 2020. Extracting impervious surface from aerial imagery using semi-automatic sampling and spectral stability. *Remote Sensing* 12: 506.
100. Marwah, P., Marwah, A. K., & Zimba, P. V. 2020. Controlling formation of metal ion adducts and enhancing sensitivity in Liquid Chromatography Mass Spectrometry. *Journal of Applied and Natural Science* 12: 180–192. <https://doi.org/10.31018/jans.vi.2277>
101. Bachand, P.T., Tallman, J.J., Powers, N.C., Woods, M., Azadani, D.N., Zimba, P.V., Turner, J.W. 2020. Genomic identification and characterization of co-occurring Harveyi clade species following a vibriosis outbreak in Pacific white shrimp, *Penaeus (Litopenaeus) vannamei*. *Aquaculture* 518, 734628
102. Huang, I., Pinnell, L.J., Tuner, J.W., Abdulla, H., Boyd, L., Linton, E.W., and Zimba, P.V. 2020. Preliminary assessment of microbial community structure of wind-tidal flats in the Laguna Madre, Texas, USA. *Biology* 9: 183.
103. Huang, I. and Zimba, P.V. 2020. Hydrogen peroxide, an ecofriendly remediation method for controlling *Microcystis aeruginosa* toxic blooms. *Journal of Applied Phycology* 32: 3133-3142.
104. Karnjanapak, C., Huang, I., Jaroensuk, P., Zimba, P.V., Plumley, F.G. 2021. *Rhodomonas* PE545 fluorescence is increased by glycerol. *ScienceAsia* 47:469-478.
105. Berthold, D.E., Lefler, F.W., I.S. Huang, Abdulla, H., Zimba, P.V., and Laughinghouse, H.D. 2021. *Iningainema tapete* sp. nov.(Scytonemataceae, Cyanobacteria) from greenhouses in central Florida (USA) produces two types of nodularin with biosynthetic potential for microcystin-LR and anabaenopeptin production. *Harmful Algae* 101, 101969

106. Zimba, P.V., Shalygin, S., Huang, I.S., Momcilic, M., Abdulla, H. 2021 A new boring toxin producer – *Perforafilum tunnelli* gen. & sp. nov. (Oscillatoriales, Cyanobacteria) isolated from Laguna Madre, Texas, USA. *Phycologia* 60: 10-24.
107. Chorazyczewski, A.M., Huang, I.S. Abdulla, H., Mayali, X., and Zimba, P.V. 2021. The Influence of Bacteria on the Growth, Lipid Production, and Extracellular Metabolite Accumulation by *Phaeodactylum tricorutum* (Bacillariophyceae). *J. of Phycology* 57:931-940.
108. Huang, I.S., Abdulla, H., Burkholder, J.A., Johansen, J.J., Presiak, A., and Zimba, P.V. 2021. Secondary metabolism in 83 species of cyanobacteria reveal diverse synthesis pathways in marine, freshwater, and terrestrial isolates. *Climate Change*.
109. Martin, L., Sheng, J., Zimba, P. V., Zhu, L., Fadare, O. O., Haley, C., Wang, M., Phillips, T. D., Conkle, J., & Xu, W. 2022. Testing an Iron Oxide Nanoparticle-Based Method for Magnetic Separation of Nanoplastics and Microplastics from Water. *Nanomaterials (Basel, Switzerland)*, 12(14), 2348. <https://doi.org/10.3390/nano12142348>

NOTE: italics indicate graduate student authorship

Additional publications:

1. Zimba, P.V. 1983. A new moss from Lake Drummond, VA. *Dismal Swamp Newsletter* 5:1.
2. Zimba, P.V. 1985. The distribution of *Ceratium* spp. over the mid-Atlantic Bight. MS thesis. Old Dominion University, 61 pp.
3. Zimba, P.V. 1990. Production dynamics, community structure, and carbon metabolism of microalgae in Graveline Bayou, MS. Ph.D. dissertation. Mississippi State University, 159 pp.
4. Steidinger, K.A., Tomas, C.R., Zimba, P., Sargent, W., Truby, E., Bray, R., Bendis, B., Richardson, W., and Zondervan, R. 1995. Microalgal blooms in Florida Bay. 9th *Symposium on Coastal Zone Management*: 189-190.
5. Zimba, P.V. 1996. Effects of water quality on hypoxia in the Gulf of Mexico. IN: *Proceedings of the 8th Annual Integrated Crop Management Conference*. Iowa State Univ. pp. 235-246.
6. Grimm, C.C., Lloyd, S.L., Zimba, P.V., and Palmer, M. 1999. Microwave distillation-solid phase microextraction gas chromatographic analysis of geosmin and 2-methylisoborneol in catfish. *American Laboratory* 32:40-48.
7. Zimba, P.V. Tucker, C.S., and Grimm, C.C. 2000. Field and laboratory assessment of diuron use in catfish production systems. *Catfish Journal* 14(12):12.
8. Zimba, P.V. 2000. Use of diuron to control off-flavor in catfish production ponds. *Delta Business Journal* 2(12):38.
9. Grimm, C.C., Lloyd, S.W., and Zimba, P.V. 2000. Instrumental determination of off-flavor in farm-raised catfish. IN: *Proceedings of the Catfish Processors Workshop*, Mississippi State, pp. 1-7.
10. Richardson, L.L. and Zimba, P.V. 2001. Spatial and temporal patterns of phytoplankton in Florida Bay: utility of algal accessory pigments and remote sensing to assess bloom dynamics. In: (J. and K. Porter, Eds.) *South Florida's Linked Ecosystems*. CRC Press. pp. 461-478 (book chapter).
11. Mischke, C. C., M. Li, D. J. Wise, and Zimba, P.V. 2002. Zooplankton Nutritional Value: Nursery Pond Fertilization Effects. *NWAC News* 5(2):8-9, 12.
12. Zimba, P.V. and Thomson, S. 2002. Detection of toxin-producing algae by low-altitude remote sensing methods. 7th *International Conference of Remote Sensing in the Marine and Coastal Environment* CD-ROM Paper 15-3.
13. Mischke, C. C. and Zimba, P.V. 2003. Optimizing Fry Pond Fertilization. *NWAC News*

6(1):4, 10.

14. Thomson, S.J., Smith, L.A., Ray, J., & Zimba, P.V. 2003. Remote sensing and implications for variable-rate application using agricultural aircraft. In: Ecosystem Dynamics, Agricultural Remote Sensing and Modeling, and Site Specific Agriculture, (W. Gao and D. Shaw, eds), *Proceedings of the SPIE* 5153: 13-20.
15. Grimm, C.C. and Zimba, P.V. 2004. Applications of an Instrumental Method for the Analysis of Off-Flavors in Fresh Water Aquaculture. In: *Off-flavors in Aquaculture* (A. Rimando and K. Schrader), CRC Press. American Chemical Society. pp. 62-79.(book chapter).
16. Ritchie, J. and Zimba, P.V. 2005. Hydrological application of remote sensing water quality: Suspended sediment and algae, Volume II, pp. 939-949. In: Anderson, M.G., *Encyclopedia of Hydrological Sciences*, John Wiley and Sons, London, UK, 2005.
17. Johnson, R.M., Grisham, M.P., Richard, Jr., E.P., and Zimba, P.V. 2006. Utilization of leaf reflectance measurements in Louisiana sugarcane disease, variety, and harvest management systems. *Proc. of the 8th International Conference on Precision Agriculture*.
18. Zimba, P.V. and Mischke, C. 2006. Plankton-nutrient dynamics in channel catfish fry and freshwater shrimp growout ponds. *World Aquaculture* 37(2):28-31.
19. Thomson, S.J. and Zimba, P.V. 2006. Application of hyperspectral imagery and digital videography to manage algal blooms in aquaculture systems: current status. *American Society for Photogrammetry and Remote Sensing*. CD-ROM.
20. Zimba, P.V., 2007. Literature Reference for Anatoxin-a, Literature Reference for Cylindrospermopsin, Literature Reference for Microcystins, Literature Reference for Saxitoxin, and Selected Biotxin Methods. In: *Standardized Analytical Methods for Environmental Restoration Following Homeland Security Events*. The Office of Research and Development, National Homeland Security Research Center. Computer Sciences Corporation Alexandria, VA. Sections 8.2.13, p. 137; 8.2.16, p. 139; 8.2.19, p.140; 8.2.20, p. 141; 8.2.22, p. 142; and Appendix D, 20 p., respectively. (Book Chapters)
21. Zimba, P.V. 2008. ARS research on harmful algal blooms in SE USA aquaculture impoundments. *Advances in Experimental Medicine and Biology* 619:577-581.
22. de la Cruz, A., Rublee, P., Hungerford, J.M., Zimba, P.V., Wilhelm, S., Meriluoto, A.O.J., Echols, K., Meyer, M.T., Stelma, G., Mandeville, R., Lawton, L., Sivonen, K., and Furey, A. 2007. Chapter 20: Analytical Methods Workgroup Report. *Advances in Experimental Medicine and Biology* 619:469-482.
23. Sassenrath, G.F., Zimba, P.V., & Gramig, G.G. 2008. Changes in cotton leaf reflectance and pigmentation with water stress. *National Cotton Council Beltwide Cotton Conference*. CD-ROM.
24. Grisham, M.P., Johnson, R.M., Viator, R.P., and Zimba, P.V. 2008. Use of precision agriculture techniques for sugarcane pathology studies. *Sugar Journal* 71: 24-29. Simultaneously published in English and Spanish (translation).
25. Thomson, S.J., DeFauw, S.L., English, P.J., Hanks, J.E., Fisher, D.K., Foster, P.N., and Zimba, P.V. 2008. Thermal characterization and spatial analysis of water stress in cotton (*Gossypium hirsutum*) and phytochemical composition related to water stress in soybean (*Glycine max*). *Proceedings of the International Conference on Precision Agriculture*.
26. Zimba, P.V. and Grimm, C.C. 2008. Ultrasound tested in channel catfish production systems. *Global Aquaculture Advocate* July/August: 58-59.
27. Zablutowicz, R.M., Zimba, P.V., Locke, M.A., Knight, S.S., Lizotte, R.E., and Gordon, R.E. 2008. Effects of land management practices on water quality in Mississippi Delta Oxbow lakes: biochemical and microbiological aspects. *Agricultural Research Special Publications*.

28. Zimba, P.V. 2008. Literature Reference for Anatoxin-a, Literature Reference for Cylindrospermopsin, Literature Reference for Microcystins, Literature Reference for Saxitoxin, and Selected Biototoxin Methods. In: *Standardized Analytical Methods for Environmental Restoration Following Homeland Security Events*. The Office of Research and Development, National Homeland Security Research Center. Computer Sciences Corporation Alexandria, VA. Sections 8.2.14, p. 189; 8.2.17, p. 190-1; 8.2.21, p.192-3; 8.2.29, p. 195-6; 8.2.30, p. 197-8; and Appendix D, 20 p., respectively. (Book Chapters).
29. Zimba, P.V. 2009. Literature Reference for Anatoxin-a, Literature Reference for Cylindrospermopsin, Literature Reference for Microcystins, Literature Reference for Saxitoxin, and Selected Biototoxin Methods. In: *Standardized Analytical Methods for Environmental Restoration Following Homeland Security Events*. The Office of Research and Development, National Homeland Security Research Center. Computer Sciences Corporation Alexandria, VA. Sections 8.2.14, p. 190; 8.2.17, p. 191-2; 8.2.21, p.193-4; 8.2.29, p. 196-7; 8.2.30, p. 198-9; and Appendix D, 20 p., respectively. (Book Chapters).
30. Westrick, J.A., Southwell, B., Szlag, D. and Zimba, P.V. 2010. Chapter 3: Detection of Cyanotoxins during Potable Water Treatment. In *AWWA: Algae Source to Treatment* (book chapter).
31. National Research Council (NAS). 2012. Sustainable development of algal biofuels in the United States. 259 pp. ISBN-10: 0-309-26032-9.
32. Mehrubeoglu, M., M. Y. Teng, M. Savage, A. Rafalski, and P. V. Zimba. 2012 Hyperspectral imaging and analysis of mixed algae species in liquid media. *2012 IEEE International Conference on Imaging Systems and Techniques (IST)*, 421 - 424.
33. Zimba, P.V. and Huang, I-S. 2018. A review of algal toxin effects on freshwater and marine aquaculture. *World Aquaculture* 49(1)59-61.
34. Fox, J. and Zimba, P.V. 2019. Minerals and Trace Elements in Microalgae. In *Microalgae in Health and Disease Prevention* [I. Levine, Ed.] Elsevier.
35. Zimba, P.V. in review. Euglenoid ecology. *AWWA Manual*. Am. Waterworks Assoc.

NOTE: italics indicate graduate student mentored

PRESENTATIONS

PRE-TAMUCC:

A complete list is not available, but would include 13 yrs x 2-3 presentations at meetings.

Hill, E. M., B. A. Nicolau, R. F. Duke, A. S. Baxter, and Zimba, P.V. 2010. Tolerance of benthic invertebrates to reoccurring hypersaline conditions resulting from reduced inflows in the Nueces River Delta, Texas, USA. Freshwater Inflows: Beyond 2010 Conference. Corpus Christi, TX. Poster presentation.

Zimba, P. V., P. Ordner, A. Rafalski, and M. Savage. 2011. Autoecology of the toxin producing *Euglena sanguinea*. 65th Phycological Society of America annual meeting. 21 July 2011. Seattle Washington. Poster presentation.

Zimba, P. V. 2011. Harmful algal blooms in aquaculture: be aware! Texas Aquaculture Association. Bayside, TX. invited oral presentation.

Siccardi, A.J., Zimba, P.V., Fuqua, Z.B., Rhodes, W.K., Durocher, M.D., Bennett, J.G., Richardson, C.M., Savage, M.L., Stafford, D.H., and Samocha, T.M. 2013. Comparison of Biomass and Lipid Production of Mono and Mixed Cultures of *Nannochloropsis salina* and *Phaeodactylum tricornutum* in Outdoor Raceways Using Natural Seawater in Corpus Christi, Texas. NAABB annual meeting Phoenix, AZ. Poster Presentation.

Gutierrez, N., Birchfield, M., Vega, R., Blandon, I., Gamez, R., and Zimba, P.V. 2013. Top-down control of lined pond aquaculture. Texas Aquaculture Association, Bay City, TX. 23-25 January 2013

Birchfield, M., Gutierrez, N., M., Vega, R., Blandon, I., Gamez, R., and Zimba, P.V. 2013. Bottom-up control of lined aquaculture pond productivity. Texas Aquaculture Association. Bay City TX 23-25 January 2013

Zimba, P.V. 2013. Toxins. Plenary Speaker. 54th Western Fish Disease Workshop and AFS Fish Health Section Annual Meeting. Port Townsend WA, 18-20 June 2013.

Zimba, P.V. 2013. Recent toxin advances at TAMUCC. Poster Presentation. Phycological Society of America. Orlando, FL August 5-12 2013.

O'Mara, S., Gutierrez, D., and Zimba, P.V. 2013. Fatty acid amides in *P. parvum* are abundant in Texas reservoirs and algal isolates from 2 continents. Poster Presentation. 7th Symposium on Harmful Algal Species. Sarasota, FL. 26-30Nov 2013.

Huang, I.-S., Guttierrez, D., Moeller, P.D., and Zimba, P.V. 2013. A new to science cyanobacterial toxin is produced by *Leptolyngbya* sp. Poster Presentation. 7th Symposium on Harmful Algal Species. Sarasota, FL. 26-30Nov 2013.

Huang, I. and Zimba P.V. 2014. How would elevated CO₂ affect the physiology of freshwater and marine cyanobacteria? Oral presentation at 71st Phycological Society of American annual meeting, Seaside, CA

Coehlo, E. and Zimba, P.V. 2013. Use of seawater electrolysis to build oyster reef. 66th Gulf Caribbean Fisheries Institute Meeting. Poster Presentation. Corpus Christi TX 4 November 2013.

Huang, I.-S., Zimba, P.V. et al. 2015. A phylogenetic assessment of cyanobacterial toxin accumulation in terrestrial, freshwater, and marine species. Phycological Society of America July 22-25, 2015.

Zimba, P.V., Huang, I.S. 2015. An evaluation of marine epiphyte removal efficiency after physical/chemical removal methods. Phycological Society of America July 22-25, 2015.

Huang, I., Pietrasiak, N., Allen, E., Burkholder, J.M., Gobler, C.J., Casamatta, D.A., Zimba, P.V. 2017. Cladistic assessment of cyanotoxin accumulation in marine, freshwater, and terrestrial cyanobacterial isolates. Oral presentation at the 120th Annual Meeting of the Texas Academy of Science, Belton, TX.

Huang, I., Pietrasiak, N., Allen, E., Burkholder, J.M., Gobler, C.J., Casamatta, D.A., Zimba, P.V. 2016. Cladistic assessment of cyanotoxin accumulation in marine, freshwater, and terrestrial cyanobacterial isolates. Invited oral presentation at the 10th International Conference on Toxic Cyanobacteria, Wuhan, China.

Huang, I., Pietrasiak, N., Allen, E., Burkholder, J.M., Gobler, C.J., Casamatta, D.A., Zimba, P.V. 2016. Cladistic assessment of cyanotoxin accumulation in marine, freshwater, and terrestrial cyanobacterial isolates. Oral presentation at 70th Phycological Society of American annual meeting, Cleveland, OH.

Huang, I., Pietrasiak, N., Allen, E., Burkholder, J.M., Gobler, C.J., Casamatta, D.A., Zimba, P.V. 2016. Cladistic assessment of cyanotoxin accumulation in marine, freshwater, and terrestrial cyanobacterial isolates. Oral presentation at American Society of Mass Spectrometry biannual meeting, San Antonio, TX.

Ramirez, L., Baxter, A., Withers, K., and Zimba, P. V. 2016. Does elevated salinity induce a physiological response in Texas diamondback terrapin *Malaclemys terrapin littoralis*? Poster Presentation. October 28-30, 2016. 7th Symposium on the Ecology, Status, and Conservation of Diamondback Terrapin 2016. Diamondback Terrapin Working Group. Fairhope, Alabama.

Ramirez, L., Baxter, A., Withers, K., and Zimba, P. V. 2016. Does elevated salinity induce a physiological response in Texas diamondback terrapin *Malaclemys terrapin littoralis*? Poster Presentation. July 6-10, 2016. Joint Meeting of Ichthyologists and Herpetologists 2016. New Orleans, Louisiana.

Zimba, P.V. 2016. An overview of freshwater and marine toxins impacting aquaculture systems. World Aquaculture Society Annual meeting San Antonio, TX.

SERVICE

Service to the World

Consultant- Colombia shrimp farms 2009 (sanctioned by USDA/ARS)

Consultant-Ecuador tilapia farms 2010- present

Member- Board of Trustees, *Phycological Society of America* 2006-2013 (2 terms)

Consultant-ultrasound technology Country of Uruguay 2021-2026

Journal Editorial Service

<i>Aquaculture</i>	Periodic Reviews	2004-present
<i>Applied and Env. Micro.</i>	Periodic Reviews	2015-present
BIOLOGY	Periodic Reviews	2018-
<i>Chinese J of Oceanography</i>	<i>Senior Editor</i>	2011-2013
<i>Environmental Science & Technology</i>	Periodic Reviews	2008-present
<i>Harmful Algae</i>	<i>Editorial Board</i>	2007-2014
	Periodic Reviews	2004-present
<i>J. Agricultural and Food Chemistry</i>	Periodic Reviews	1999-present
<i>J. Applied Aquaculture</i>	Periodic Reviews	2001-present
<i>J. of Aquaculture Res. and Development</i>	<i>Senior Editor</i>	2011-2015
<i>Journal of Microbiology</i>	Periodic Reviews	2013-present
<i>Journal of Phycology</i>	Periodic Reviews	2016-present
<i>J. World Aquaculture Society</i>	Periodic reviews	2005-present
<i>Toxins</i>	<i>Editorial Board</i>	2014-present
<i>Marine Drugs</i>	Periodic Reviewer	2014-present
<i>Nature Climate Change Letters</i>	Periodic Reviews	2016-present
<i>Pakistan J. Botany</i>	Periodic Reviews	2015-present
<i>Phycologia</i>	Periodic Reviews	2010-present
<i>Soil & Sediment Contamination</i>	Periodic Reviews	2006-present
<i>Toxicon</i>	Periodic Reviews	2010-present
<i>Toxins</i>	<i>Editorial Board</i>	2013-present

<i>Water</i>	Periodic reviews	2012-present
<i>Water, Air & Soil Pollution</i>	Periodic Reviews	2002-present
<i>Water Research</i>	Periodic Reviews	2008-present
<i>Hydrobiologia</i>	Periodic Reviews	2009-present
<i>Plos One</i>	Periodic Reviews	2015-present
<i>J of Phycology</i>	Periodic Reviews	2004-present

Service to the Nation

NRC panelist (National Academy of Science), Sustainability of Biofuels in the United States 2011-2012

Center Review Panel, North Carolina State University 2012-2012

NOAA Science Advisory Board Gulf Coast Ecosystem Restoration Science Program

Advisory Working Group Member 2014-2017

Texas Center of Excellence Advisory Council Member 2015-

PROFESSIONAL ACTIVITIES OF NOTE:

Reviewed manuscripts for 24 journals and proposals for U.S. EPA, NSF, NIH, NOAA, Sea Grant, NRI, USDA, and other national and regional agencies

Panel Reviewer-US EPA STAR grants 2007, NSF MRI 2012, UK NERC Program 2011, Royal Netherlands Academy of Arts and Science 2012

Adjunct faculty-Loyola University (New Orleans, LA) 1997-1999

Adjunct faculty-University of Mississippi 2003-present

Adjunct faculty-SUNY-Environmental School of Forestry 2006-present

AAUS certified diver, PADI Deep, Wreck, Advanced Open water Certifications, over 220 research dives logged

Completed U.S. Coast Guard Safe Boating and Seamanship Course 1983

Completed Chromatography Institute of America short course (HPLC) 1996

Completed Randomization Theory short course (Univ. of Wyoming) 1997

Completed Introduction to Supervision Course 1999

Completed Leadership: Change, Challenge, and Empowerment 1999

Completed Success-Oriented Supervision 2004

U.S. Merchant Marine Ordinary Seaman Wiper Classification 1975-present

Watch leader on >10 multi-day scientific cruises 1982-1996

Volunteer Naturalist-Aquarium of the Americas 1996-1999

Gordon Research Conference Participant (Speaker) 2003, 2005

Assoc. Editor- *Standard Methods for the Examination of Waste Water*

Board of Trustees member- *Psychological Society of America* 2006-2012

Panelist, *National Academy of Sciences*, Algal Biofuel Sustainability 2011-2012