

**Dr. Kam W. Tang**

Robert & Sara Boyd Term Distinguished Associate Professor  
Virginia Institute of Marine Science, College of William and Mary

**CONTACT INFO**

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**EDUCATION**

Ph.D., Oceanography, University of Connecticut, USA, 2000  
M.Phil., Biology, The Chinese University of Hong Kong, Hong Kong, 1993  
B.Sc., Biology, The Chinese University of Hong Kong, Hong Kong, 1991

**ACADEMIC POSITIONS**

2008-present Associate Professor, SMS/VIMS, College of William & Mary  
2002-2008 Assistant Professor, SMS/VIMS, College of William & Mary  
2000-2002 Postdoctoral Fellow, Danish Institute for Fisheries Research  
1994-2000 Graduate Research Assistant, Dept. of Marine Sciences, University of Connecticut  
1993-1994 Science Teacher (Biology, Integrated Science; full-time), Siu Ming Sec. School, Hong Kong  
1991-1993 Graduate Teaching Assistant (Biology), The Chinese Univ. of Hong Kong

**HONORS AND AWARDS**

2010 Humboldt Research Fellowship for Experienced Researchers, Humboldt Foundation, Germany  
2010-3 Robert and Sara Boyd Term Distinguished Associate Professor, College of William & Mary  
2009 Alumni Fellowship Award (for excellence in teaching), The William & Mary Alumni Association  
2001 NorFA Mobility Scholarship, Norway, October  
2000-2 Postdoctoral scholarship, Carlsberg Foundation, Denmark  
2000 Andres J Nalwalk Memorial Award, University of Connecticut  
1997 Edward Victor Gant Scholarship, University of Connecticut

**POSTDOCTORAL AND VISTING SCIENTISTS**

Dr. Marc Andersen Borg (postdoc; 2009-2010)  
Dr. Ravi Kumar (POGO-SCOR fellowship visiting scientist; 2010)  
Dr. Yan Wang (China Scholarship Council scholarship visiting scientist; 2009-2010)

**STUDENTS MENTORED (\*as co-advisor)**

<i>Graduate Student</i>	<i>Start</i>	<i>End</i>	<i>Degree</i>	<i>Topic</i>
Sikai Peng*	2011		PhD	TBD
Haley Garrison	2011		MS	TBD
Yuan Dong <sup>#</sup>	2011		PhD	DMSp-consuming bacteria on copepods
Samantha Bickel	2009		PhD	Species and functional diversity of zooplankton-associated bacteria
Xiaodong Wang* <sup>#</sup>	2007	2009	PhD	Formation and sinking of <i>Phaeocystis</i> colonies
David Elliott	2006	2010	PhD	Mortality and population dynamics of copepods
Samantha Bickel	2006	2009	MS	Bacterial decomposition of zooplankton carcasses
Emily Yam	2004	2007	MS	The role of bacteria-particle interactions in marine snow dynamics
Adriana Veloza*	2003	2005	MS	Transfer of essential fatty acids by marine plankton

<sup>#</sup>Visiting student from Ocean University of China sponsored by China Scholarship Council

<i>Undergraduate intern</i>	<i>Year</i>	<i>Undergraduate intern</i>	<i>Year</i>
Kayelyn Simmons	2010-11	Lisa Marko	2003
Daniel Ingham	2010-11		
Joseph Hammond	2010	<i>Pre-college intern</i>	<i>Year</i>
Julie Galkiewicz	2006	Young-Ah Lee	2009-10
Alle Lie*	2006	Katia Chaterji	2005
Curtis Freund	2005-6	Zena Cardman	2004
Christopher Schweitzer	2005	Yassaman Pourkazemi	2003
Letacia Sims	2004-5		
Maiyai Taal	2004		
Corey Bacchus	2004		

**STUDENTS' ACHIEVEMENTS**

<i>Student</i>	<i>Achievement</i>	<i>Year</i>
David Elliott	VIMS Best Student Paper Award	2011
Samantha Bickel	IGB Fellowship (Germany)	2010
Samantha Bickel	VIMS Student Research Grant	2010
Young-Ah Lee	Tidewater Science Fair Grand Prize 2 <sup>nd</sup> place	2010
Samantha Bickel	ASLO Student Travel Award	2009
Samantha Bickel	Reves Graduate Student International Travel Grant	2008
Emily Yam	VIMS Best Student Paper Award	2008
Samantha Bickel	Reves Graduate Student International Travel Grant	2007
Adriana Veloza	VIMS Best Student Paper Award	2006
Adriana Veloza	ERF conference "Top 50 Student Presenters"	2005
Emily Yam	Reves Graduate Student International Travel Grant	2005
Maiyai Taal	ASLO-SAML Outstanding Student Presentation Award (4 <sup>th</sup> place)	2004
Adriana Veloza	Hispanic Scholarship Fund Scholar	2003
Adriana Veloza	Sigma Xi GIAR	2003

**FELLOWSHIPS AND GRANTS**

NSF-HRD, Targeted Infusion Project: Education Partnership in Climate Change and Sustainability (EPiCCS). (2011-2014; \$46,927; PI in collaboration with Hampton University and Elizabeth City State University)

NSF-CREST, Dynamics of zooplankton community in Maryland Coastal Bays and their driving mechanisms (2010-2015; \$90,165; subcontract via University of Maryland Eastern Shore)

Humboldt Research Fellowship for Experienced Researchers, Humboldt Foundation, Germany (2010-2012; €45,500)

NSF-GK-12, Partnership between Educators and Researchers for Enhancing Classroom Teaching (PERFECT). (2009-2014; \$2,736,518; PI)

NSF-OCE, Experimental investigations of the giant colonies of *Phaeocystis globosa* in China. (2009-2012; \$461,284; co-PI)

NSF-OCE, Bringing Out the Dead: Distribution and microbial decomposition of copepod carcasses in the marine environment. (2008-2011; \$266,754; PI)

NSF-GeoEd, DREAMS-II: A novel program to recruit and educate underrepresented students in geosciences. (2008-2010; \$44,707; PI in collaboration with Hampton University and Elizabeth City State University)

Jeffress Memorial Trust, Linking zooplankton ecology and microbial ecology: Experimental study of microbial processes on copepod carcasses. (2008-2009; \$21,000; PI)

NSF-OISE, Planning activities between Virginia Institute of Marine Science and Jinan University, China. (2006-2008; \$19,800; PI)

NSF-OCE, Fatty acid and sterol metabolism in planktonic heterotrophic protists: essential nutrient upgrading and transfer and their ecological implications in pelagic food web. (2005-2008; \$525,000; co-PI)

NSF-ANT, Environmental and ecological regulation of differences and interactions between solitary and colonial forms of *Phaeocystis antarctica*. (2005-2008; \$586,348; PI)

NOAA-CMER, Enhancing education and training of under-represented students in marine sciences through the DREAMS program. (2004-2005; \$20,000; PI)

NOAA-CMER, Effects of plankton composition and nutritional quality on growth of newly metamorphosed winter flounder (renewal). (2004-2005; \$52,658; PI)

Jeffress Memorial Trust, Copepods as microbial hotspots for DMSP dynamics: Effects of host feeding activities on attached DMSP-consuming bacteria (renewal). (2004-2005; \$10,000; PI)

NSF-OCE, Microbial dynamics on marine snow particles. (2004-2007; \$353,699; PI)

NSF-DBI, DREAMS – Diversity in Research in Environmental And Marine Science. (2003-2007; \$188,682; PI in collaboration with Hampton University)

NOAA-CMER, Effects of plankton composition and nutritional quality on growth of newly metamorphosed winter flounder. (2003-2004; \$50,000; PI)

Jeffress Memorial Trust, Copepods as microbial hotspots for DMSP dynamics: Effects of host feeding activities on attached DMSP-consuming bacteria. (2003-2004; \$25,000; PI)

Sigma Xi Grants-in-Aid of Research, Role of mesozooplankton in the biogeochemical cycle of dimethylsulfoniopropionate: Implications for global climate regulation. (1998; PI)

### PEER-REVIEWED PUBLICATIONS (\*student co-author under my supervision)

#### 2011

60. Grossart H-P, Frindte K, Dziallas C, Eckert W, **Tang KW** (2011) Microbial methane production in oxygenated water column of an oligotrophic lake. *Proceedings of the National Academy of Sciences* 108:19657-19661
59. **Tang KW**, Nielsen TG, Munk P, Mortensen J, Møller EF, Arendt KE, Tønnesson K, Pedersen TJ (2011) Metazooplankton community structure, feeding rate estimates, and hydrography in a meltwater influenced Greenlandic fjord. *Marine Ecology Progress Series* 434:77-90
58. Elliott DT\*, **Tang KW** (2011) Spatial and temporal distributions of live and dead copepods in the lower Chesapeake Bay (Virginia, USA). *Estuaries and Coasts* 34:1039-1048
57. Bickel SL\*, Hammond JDM\*, **Tang KW** (2011) Boat-generated turbulence as a potential source of mortality among copepods. *Journal of Experimental Marine Biology and Ecology* 401:105-109
56. Elliott DT\*, **Tang KW** (2011) Influence of carcass abundance on estimates of mortality and assessment of population dynamics in *Acartia tonsa*. *Marine Ecology Progress Series* 427:1-12
55. **Tang KW**, Glud R, Glud A, Rysgaard S, Nielsen TG (2011) Copepod guts as biogeochemical hotspots in the sea: evidence from microelectrode profiling of *Calanus* spp. *Limnology and Oceanography* 56:666-672
54. **Tang KW**, Dziallas C, Grossart H-P (2011) Zooplankton and aggregates as refuge for aquatic bacteria: Protection from UV, heat and ozone stresses used for water treatment. *Environmental Microbiology* 13:378-390

#### 2010

53. **Tang KW**, Turk V, Grossart H-P (2010) Linkage between crustacean zooplankton and aquatic bacteria. *Aquatic Microbial Ecology* 61:261-277
52. Wang X\*, **Tang KW** (2010) Buoyancy regulation in *Phaeocystis globosa* Scherffel colonies. *Open Marine Biology Journal* 4:115-121
51. Grossart H-P, **Tang KW** (2010) Mini-review: www.aquaticmicrobial.net. *Communicative & Integrative Biology* 3:491-494
50. Elliott DT\*, Harris CK, **Tang KW** (2010) Dead in the water: The fate of copepod carcasses in the York River estuary, Virginia. *Limnology and Oceanography* 55:1821-1834
49. Anderson TR, **Tang KW** (2010) Carbon cycling and POC turnover in the mesopelagic zone of the ocean: Insights from a simple model. *Deep-Sea Research II* 57:1581-1592
48. Grossart H-P, Dziallas C, Leunert F, **Tang KW** (2010) Bacteria dispersal by hitch-hiking on zooplankton. *Proceedings of the National Academy of Sciences* 107:11959-11964
47. Wang X\*, **Tang KW**, Wang Y, Smith WO Jr. (2010) Temperature effects on growth, colony development and carbon partitioning of three *Phaeocystis* species. *Aquatic Biology* 9:239-249
46. Bickel SL\*, **Tang KW** (2010) Microbial decomposition of proteins and lipids in copepod versus rotifer carcasses. *Marine Biology* 157:1613-1624

#### 2009

45. **Tang KW**, Bickel SL\*, Dziallas C, Grossart HP (2009) Microbial activities accompanying decomposition of cladoceran and copepod carcasses under different environmental conditions. *Aquatic Microbial Ecology* 57: 89-100
44. Elliott DT\*, **Tang KW** (2009) Simple staining method for differentiating live and dead marine zooplankton in field samples. *Limnology and Oceanography: Methods* 7:585-594
43. **Tang K**, Dziallas C, Hutalle-Schmelzer K, Grossart H-P (2009) Effects of food on bacterial community composition associated with the copepod *Acartia tonsa* Dana. *Biology Letters* 5:549-553
42. Bickel SL\*, **Tang KW**, Grossart HP (2009) Use of aniline blue to distinguish live and dead crustacean zooplankton composition in freshwaters. *Freshwater Biology* 54:971-981
41. Grossart HP, Dziallas C, **Tang KW** (2009) Bacterial diversity associated with freshwater zooplankton. *Environmental Microbiology Reports* 1:50-55
40. **Tang KW**, Smith WO Jr, Shields AR, Elliott DT\* (2009) Survival and recovery of *Phaeocystis antarctica* (Prymnesiophyceae) from prolonged darkness and freezing. *Proceedings of the Royal Society B* 276:81-90

**2008**

39. **Tang KW**, Smith WO Jr, Elliott DT\*, Shields AR (2008) Colony size of *Phaeocystis antarctica* (Prymnesiophyceae) as influenced by zooplankton grazers. *Journal of Phycology* 44:1372-1378
38. Elliott DT\*, **Tang KW**, Shields AR (2008) Mesozooplankton beneath the summer sea ice in McMurdo Sound, Antarctica: Abundance, species composition, and DMSP content. *Polar Biology* 32:113-122

**2007**

37. **Tang KW**, Grossart HP (2007) Iron effects on colonization behavior, motility and enzymatic activity of marine bacteria. *Canadian Journal of Microbiology* 53:968-974
36. Yam EM\*, **Tang KW** (2007) Starvation effects on aggregate colonization and motility of marine bacteria. *Aquatic Microbial Ecology* 48:207-215
35. Nejstgaard JC, **Tang KW**, Steinke M, Dutz J, Koski M, Antajan E, Long J (2007) Zooplankton grazing on *Phaeocystis*: a quantitative review and future challenges. *Biogeochemistry* 83:147-172
34. Thor P, Koski M, **Tang KW**, Jónasdóttir SH (2007) Supplemental effects of diet mixing on absorption of ingested organic carbon in the marine copepod *Acartia tonsa*. *Marine Ecology Progress Series* 331:131-138
33. Grossart HP, **Tang KW**, Kiørboe T, Ploug H (2007) Comparison of cell-specific activity between free-living and attached bacteria using isolates and natural assemblages. *FEMS Microbiology Letters* 266:194-200

**2006**

32. **Tang KW**, Hutalle KML, Grossart HP (2006) Microbial abundance, composition and enzymatic activity during decomposition of copepod carcasses. *Aquatic Microbial Ecology* 45:219-227
31. **Tang KW**, Grossart HP, Yam EM\*, Jackson GA, Ducklow HW, Kiørboe T (2006) Mesocosm study of particle dynamics and control of particle-associated bacteria by flagellate grazing. *Marine Ecology Progress Series* 325:15-27
30. **Tang KW**, Freund CS\*, Schweitzer CL\* (2006) Occurrence of copepod carcasses in the lower Chesapeake Bay and their decomposition by ambient microbes. *Estuarine, Coastal and Shelf Science* 68:499-508
29. Grossart HP, Kiørboe T, **Tang KW**, Allgaier M, Yam EM\*, Ploug H (2006) Interactions between marine snow and heterotrophic bacteria: Aggregate formation and microbial dynamics. *Aquatic Microbial Ecology* 42: 19-26
28. Veloza AJ\*, Chu F-L, **Tang KW** (2006) Trophic modification of essential fatty acids by heterotrophic protists and its effects on the fatty acid composition of the copepod *Acartia tonsa*. *Marine Biology* 148:779-788

**2005**

27. **Tang KW**, Taal M\* (2005) Trophic modification of food quality by heterotrophic protists: Species-specific effects on copepod egg production and egg hatching. *Journal of Experimental Marine Biology and Ecology* 318:85-98
26. **Tang KW** (2005) Copepods as microbial hotspots in the ocean: Effects of host feeding activities on attached bacteria. *Aquatic Microbial Ecology* 38:31-40

**2004**

25. Besiktepe S, **Tang KW**, Vila M, Simó R (2004) Dimethylated sulfur compounds in seawater, seston and mesozooplankton in the seas around Turkey. *Deep-Sea Research I* 51:1179-1197
24. Kiørboe T, Grossart H-P, Ploug H, **Tang K**, Auer B (2004) Particle associated flagellates: swimming patterns, colonization rates, and grazing on attached bacteria. *Aquatic Microbial Ecology* 35:141-152

**2003**

23. **Tang KW** (2003) Grazing and colony size development in *Phaeocystis globosa* (Prymnesiophyceae): the role of a chemical signal. *Journal of Plankton Research* 25:831-842
22. Kiørboe T, **Tang K**, Grossart H-P, Ploug H (2003) Dynamics of microbial communities on marine snow aggregates: colonization, growth, detachment and grazing mortality of attached bacteria. *Applied and Environmental Microbiology* 69:3036-3047
21. Grossart H-P, Kiørboe T, **Tang K**, Ploug H (2003) Bacterial colonization of marine particles: growth and inter-specific interactions. *Applied and Environmental Microbiology* 69:3500-3509
20. **Tang KW**, Simó R (2003) Trophic uptake and transfer of dimethylsulfoniopropionate in simple planktonic food chains. *Aquatic Microbial Ecology* 31: 193-202

**2002**

19. Kiørboe T, Grossart H-P, Ploug H, **Tang K** (2002) Mechanisms and rates of bacterial colonization of sinking aggregates. *Applied and Environmental Microbiology* 68:3996-4006
18. Thor P, Cervetto G, Besiktepe S, Ribera E, **Tang KW**, Dam HG (2002) Influence of two different green algal diets on specific dynamic action and incorporation of carbon into biochemical fractions in the copepod *Acartia tonsa*. *Journal of Plankton Research* 24:293-300
17. Jakobsen HH, **Tang KW** (2002) Effects of protozoan grazing on colony formation in *Phaeocystis globosa* (Prymnesiophyceae) and the potential costs and benefits. *Aquatic Microbial Ecology* 27:261-273

#### 2001

16. **Tang KW**, Jakobsen HH, Visser AW (2001) *Phaeocystis globosa* (Prymnesiophyceae) and the planktonic food web: Feeding, growth and trophic interactions among grazers. *Limnology and Oceanography* 46:1860-1870
15. Dam HG, **Tang KW** (2001) Affordable egg mortality: constraining copepod egg mortality with life history traits. *Journal of Plankton Research* 23:633-640
14. **Tang KW** (2001) Defecation of dimethylsulfoniopropionate (DMSP) by the copepod *Acartia tonsa* as functions of ambient food concentration and body DMSP content. *Journal of Plankton Research* 23:549-553
13. **Tang KW**, Visscher PT, Dam HG (2001) DMSP-consuming bacteria associated with the calanoid copepod *Acartia tonsa* (Dana). *Journal of Experimental Marine Biology and Ecology* 256:185-198
12. **Tang KW**, Dam HG (2001) Phytoplankton inhibition of copepod egg hatching: test of an exudate hypothesis. *Marine Ecology Progress Series* 209:197-202

#### 2000

11. **Tang KW**, Rogers DR, Dam HG, Visscher PT (2000) Seasonal distribution of DMSP among seston, dissolved matter and zooplankton along a transect in the Long Island Sound estuary. *Marine Ecology Progress Series* 206:1-11
10. **Tang KW**, Fenn TD, Visscher PT, Dam HG (2000) Regulation of body dimethylsulfoniopropionate (DMSP) content by the copepod *Temora longicornis*: a test of four mechanisms. *Marine Biology* 136:749-757
9. **Tang KW** (2000) Dynamics of dimethylsulfoniopropionate (DMSP) in a migratory grazer: a laboratory simulation study. *Journal of Experimental Marine Biology and Ecology* 243:283-293

#### 1999

8. **Tang KW**, Dam HG, Visscher PT, Fenn TD (1999) Dimethylsulfoniopropionate (DMSP) in marine copepods and its relation with diets and salinity. *Marine Ecology Progress Series* 179:71-79
7. **Tang KW**, Dam HG (1999) Limitation of zooplankton production: beyond stoichiometry. *Oikos* 84:537-542

#### 1998

6. **Tang KW**, Dam HG, Feinberg LR (1998) The relative importance of egg production rate, hatching success, hatching duration and egg sinking in population recruitment of two species of marine copepods. *Journal of Plankton Research* 20:1971-1987
5. Jónasdóttir SH, Kiørboe T, **Tang KW**, St John M, Visser AW, Saiz E, Dam HG (1998) Role of diatoms in copepod production: good, harmless or toxic? *Marine Ecology Progress Series* 172:305-308

#### 1995

4. **Tang KW**, Chen QC, Wong CK (1995) Distribution and biology of marine cladocerans in the coastal waters of southern China. *Hydrobiologia* 307:99-107

#### 1994

3. **Tang KW**, Chen QC, Wong CK (1994) Diel vertical migration and gut pigment rhythm of *Paracalanus parvus*, *P. crassirostris*, *Acartia erythraea* and *Eucalanus subcrassus* (Copepoda, Calanoida) in Tolo Harbour, Hong Kong. *Hydrobiologia* 292/293:389-396

#### 1993

2. Wong CK, Chu KH, **Tang KW**, Tam TW, Wong LJ (1993) Effects of chromium, copper and nickel on survival and feeding behaviour of *Metapenaeus ensis* larvae and postlarvae (Decapoda: Penaeidae). *Marine Environmental Research* 36:63-78

#### 1992

1. Wong CK, Chan ALC, **Tang KW** (1992) Natural ingestion rates and grazing impact of the marine cladoceran *Penilia avirostris* Dana in Tolo Harbour, Hong Kong. *Journal of Plankton Research* 14:1757-1765

**BOOK REVIEW**

**Tang KW** (2004) Ever since Hutchinson: the bottom-up vs. top-down discussion continues. *Ecology* 85:2913-2914

**EXTERNAL APPOINTMENTS**

- Meeting co-chair, Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography (ASLO), New Orleans, 2013
- Research topic co-editor, Molecular and functional ecology of aquatic microbial symbionts, *Frontiers in Aquatic Microbiology*
- Editorial Board, *ISRN Ecology* (since 2011)
- Editorial Board, *Journal of Ocean University of China (English edition)* (since 2011)
- Editorial Board, *Journal of Marine Science: Research & Development* (since 2010)
- Review Editor, *Frontiers in Aquatic Microbiology* (since 2010)
- Review Editor, *Marine Ecology Progress Series* (2010-2014)
- Member, Diversity Committee, American Society of Limnology and Oceanography (2010-2013)

**OTHER PROFESSIONAL ACTIVITIES**

- Presently serve on W&M Marine Science Undergraduate Minor Advisory Committee, W&M Equal Opportunity Committee, VIMS Best Student Paper Award Committee, and VIMS Student Research Grant Committee.
- Frequently review proposals for NSF, NOAA, NASA, SeaGrant, UK-NERC and US-Israel Binational Science Foundation
- Served on 2 NSF proposal panels.
- Frequently review manuscripts for journals such as *Limnol. Oceanogr.*, *Mar. Ecol. Prog. Ser.*, *Aquat. Microb. Ecol.*, *J. Plankton Res.* and many others.
- Co-chaired a special session in 3 conferences.
- Frequently volunteer as judge in middle and high school science fairs.