

Vita: ALLISON RICHARD PALMER

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Degrees

Ph.D. Zoology 1980 University of Washington, Seattle (advisor, R.T. Paine)
B.Sc. Biology 1973 State University of New York, Stony Brook (advisor, J.S. Levinton)

Academic Positions

Professor Emeritus, Biological Sciences, University of Alberta 2018 – pres.
Professor of Biological Sciences, University of Alberta 1991- 2017
Visiting Professor, Leiden University & Netherlands Royal Academy of Sciences 2009-10
Director, Bamfield Marine Sciences Centre 2007-08
Associate Professor of Zoology, University of Alberta 1985-91
Assistant Professor of Zoology, University of Alberta 1980-85

Professional Honors & Recognition

Teaching Honor Roll- Student's Choice, Faculty of Science, Univ. of Alberta 2014, 2015
Killam Award for Excellence in Mentoring, Faculty of Graduate Studies, Univ. of Alberta 2014
Graduate Mentoring Award, Faculty of Science, University of Alberta 2014
Keynote Speaker, International Symposium *Symmetry and Asymmetry in Biology*
Muséum national d'Histoire naturelle, Paris, France 2014
Graduate Student Supervisor Award, Univ. of Alberta Graduate Student Association 2011
NSERC Canada Discovery Grant Review Committee,
EG1503 (Ecology & Evolution; co-chair 2012-13) 2010-13
Interviewed & quoted by Jonah Lehrer in the *New Yorker* (Dec. 13 *The Truth Wears Off*) 2010
Gordin Kaplan Award for Excellence in Research, Univ. of Alberta 2010
Keynote Speaker, International Symposium *Through the Looking Glass: A Symposium on*
Asymmetry and Mirror-Images in Nature Leiden University & Naturalis 2009
Invited Participant, International Workshop *Symmetry as a Modern Scientific Concept:*
Historical and Philosophical Perspectives Lorentz Center, Leiden University 2008
Elected Fellow, Royal Society of Canada 2007
Invited Plenary Lecture, Gordon Research Conference, Bryant University 2006
Co-Founder & Inaugural Chair, Comparative Morphology & Development section,
Canadian Society of Zoologists 2005-07
Invited Plenary Lecture, 100th Anniversary Univ. of Puerto Rico
Graduate Student Research Symposium: "Biology of the New Millennium" 2003
Elected Council Member, Int'l Organization for Systematics & Evolutionary Biology 2002-07
Invited Plenary Lecture, International Chirality Conference, Orlando, FL 2001
Faculty of Science Award for Excellent Teaching, Univ. of Alberta 2001
Invited Plenary Lecture, German Zoological Society, Bonn, Germany 2000
McCalla Research Professorship, Univ. of Alberta 2000-01
Invited Participant, US National Academy of Sciences Colloquium,
Symmetries Throughout the Sciences, Irvine, CA 1996
76th President, Western Society of Naturalists 1995

<u>Research Grants Received</u> (total award unless stated otherwise)	<u>Period</u>	<u>Amount</u>
NSERC Canada, Accelerator Grant (<i>per year</i>)	2014-17	40,000
NSERC Canada, Discovery Grant (<i>per year</i>)	2014-19	62,000
	2006-14	66,900
	2001-06	58,000
	1998-2001	51,450
	1996-98	45,000

	1992-96	42,960
	1989-92	50,000
	1986-89	46,500
	1983-86	37,000
	1980-83	15,000
NSERC RTI Grant (BMSC* microscopy cameras; with 4 others)	2015	33,900
NSERC RTI Grant (microscope; Declan Ali PI, with 6 others)	2013	81,670
NSERC Major Resource Support Grant, BMSC* (Anholt (PI), 9 others)	2011-13	1,800,000
Alberta Ingenuity Fund M.Sc. Scholarship & grant (with T. Miyashita)	2010-11	49,000
Alberta Ingenuity Fund Ph.D. Scholarship & grant (with C. Neufeld)	2009-11	17,000
NSERC Major Resource Support Grant, BMSC* (PI, with 10 others)	2008-11	1,047,900
NSERC RTI Grant (BMSC* plate reader; PI, with 7 others)	2008	50,562
NSERC RTI Grant (BMSC* incubators; PI, with 7 others)	2008	19,987
NSERC RTI Grant (BMSC* autoclave; Greg Goss (PI) & 5 others)	2007	35,897
NSERC Major Facilities Access Grant, BMSC* (Jelinski (PI) & 8 others)	2005-08	1,158,000
Alberta Ingenuity Fund Ph.D. Scholarship & grant (with M.J. Boeckner)	2005-10	117,500
Alberta Ingenuity Fund Research Associateship (with C.A. Bergstrom)	2003-05	110,000
Alberta Ingenuity Fund Ph.D. Scholarship & grant (with A.A. Eaves)	2002-07	117,500
CFI + Alberta Innovation & Sci. + BC Knowledge Network (with A.N. Spencer (PI) & 8 others) "BMSC* Infrastructure for Studies in Biodiversity and Bioenvironmental Fluid Dynamics"	2001-02	2,737,402
CFI + Alberta Innovation & Sci. (with B. Hallgrimsson (PI) & 8 others) "Creation of a Multidisciplinary 3-D Morphometrics Center"	2001	412,808

* BMSC- Bamfield Marine Sciences Centre, Bamfield, BC

Editorial Contributions

Editorial Board, <i>Invertebrate Biology</i>	2013-18
Editorial Board, <i>Symmetry</i>	2009- pres.
Editorial Board, <i>Evolutionary Biology</i>	2006- pres.
Co-Editor, <i>Zoology</i>	2000-08
Associate Editor, <i>Evolution</i>	1992-97
Editorial Board, <i>American Malacological Bulletin</i>	1990-2003
Associate Editor, <i>Paleobiology</i>	1982-92
<i>Ad hoc</i> Editor, <i>Ecology</i>	1987-88

Administrative Contributions

Director, Digital Teaching Resources Laboratory, Dept. of Biological Sciences	2001-07
Co-Chair or Chair, Systematics & Evolution Group, University of Alberta	1995-2000, 2001-02
Associate Chair, Department of Zoology, University of Alberta	1991-94

Society Contributions

Auditor, Canadian Society of Zoologists (CSZ)	2007-pres.
Secretary-General, Comparative Morphology & Development section, CSZ	2007-pres.
Reviewed applicants for the CSZ Boutilier New Investigator Award	2010
Inaugural Chair, Comparative Morphology & Development section, CSZ	2005-07
Council Member, Int'l. Organization for Systematic & Evolutionary Biology	2006-09
Member of Local Organizing Committee for Edmonton CSZ meeting	2006
Hoar Award Committee, Canadian Society of Zoologists	2005
Chair, Nominating Committee, Western Society of Naturalists	1997
President, Western Society of Naturalists	1995

Current Society Memberships

American Microscopical Society	Royal Society of Canada
American Society of Naturalists	Society for Integrative & Comparative Biology
Canadian Society of Zoologists	Society for the Study of Evolution
Crustacean Society	

Teaching ExperienceUndergraduate courses

Survey of Invertebrates	Lecture, lab & WWW support	1997-2017**
Marine Biology/Science	Lecture & WWW support	1984-86, 91-2007**
Honors Invertebrate Zoology	Protostomia, lecture and lab	1980-92, 1995
Introductory Biology	Lecture; Ecology & Evolution	1982, 1983
Mechanisms of Evolution	Lecture	1982-89, 1992

Graduate courses

Evolutionary Genetics	Graduate Seminar	1985-91
Graduate Student Core Course	Required of new students	1988-89
Topics in Systematics & Evolution	Graduate Seminar	1998-2017**

Courses at field stations

Animal Structure & Function	Bamfield Marine Sciences Centre	1996-pres.**
Functional Morphology & Evolution	Friday Harbor Laboratories	1986
Marine Ecology	Bamfield Marine Station	1980

** Excluding years on leave

Departmental Committees

Postdoctoral Fellow Awards Committee	2015-17
Advisor, Animal Biology Major (invertebrates stream)	2010-11
Learning Initiatives Committee	1997-2009. (chaired 1999-2002, 2003-07)
Curator, Marine Invertebrates & Malacology Collection, Univ. of Alberta	1993-pres.
Curriculum & Calendar Committee	1988-89, 1994-95, 1997-2000
Graduate Students Committee	1980, 84-86, 91-95, 1997-2000
Graduate Awards Committee	2014-15
Seminar Committee	1980-83 (chaired 81-82), 1991-93, 95
Scholarships Committee	1991-94
Priorities & Planning Committee	1983-84
Space Committee	2001-02, 2003-06

Post-Doctoral Research Associates (** current; Funding: * Alberta Ingenuity Fund; † FCAR- Quebec; § JSPS- Japan)

Kaji, Tomonari §	2013-**	The process of segment addition / deletion in barnacle legs
Kerr, Kecia	2014-17	Effect of handed behavior on male fiddler crab claw asymmetry
Edgell, Tim	2007-08	Learning, handedness and induced asymmetry in crab claws
Bergstrom, Carolyn *	2003-07	Biogeography & genetics of flounder eye-side polymorphism
Anker, Arthur	2002-05	Systematics & evolution of snapping shrimp (Alpheidae)
Arsenault, Dave †	1998-01	Phenotypic plasticity in barnacles & <i>Nucella</i>
Klingenberg, Chris	1996	Landmark-morphometric analyses of asymmetry variation
Rawlings, Tim	1995-96	Intra- & inter-specific variation in <i>Nucella</i> egg capsule form
Dalby, James	1994-95	Geographic variation & plasticity in <i>Nucella lima</i> shell form
Smith, L. David	1992-93	Phenotypic plasticity in claw form of brachyuran crabs
Ash, Vivian	1988	Adaptive significance of shell color & banding variation in <i>Nucella</i>

Graduate Students Supervised (** current; Funding sources: @ Vanier CGS, @@ NSERC CGS, * NSERC PGS, † Alberta Ingenuity Scholarship, †† Killam Predoctoral Fellowship, § U of A PhD Scholarship, §§ DAAD Scholarship, # Province of Alberta Scholarship)

Ph.D.	Subject of thesis
Luque, Javier@@††	2013-** Evolutionary history of brachyuran crabs
Miyashita,Tetsuto@††	2012-17 Hagfish development & anatomy: Insights into vertebrate origins
Webster, Nicole#*	2011-17 Development and evolution of gastropod shell sculpture

Barazنده, Marjan	2008-14	Molecular tests of mating behavior in barnacles
Neufeld, Chris*†	2005-11	Adaptive phenotypic plasticity in barnacle legs & penises
Boeckner, Matthew J.†	2003-09	Ecology and diversity of marine meiofauna
Eaves, Alexandra A.†	2002-08	Developmental plasticity & cloning of echinoderm larvae
Macdonald, Tara A.*	2000-06	Systematics & evolution of spirorbid polychaetes (Annelida)
Penney, Brian K.§	1996-02	Feeding & defensive adaptations in dorid nudibranchs
Zaklan, Stephanie§	1995-00	Systematics & carcinization in lithodid crabs (Anomura)
Cameron, Christopher	1994-00	Hemichordates functional morphology, ecology & systematics
Taylor, Graeme M.	1991-99	Functional morphology & evolution of brachyuran crab claws
Rawlings, Timothy L.	1989-95	Costs & benefits of variation in <i>Nucella emarginata</i> capsule form
Padilla, Dianna K.	1981-87	Effects of algal calcification & form on herbivore feeding success
Lowell, Richard B.††	1980-86	Safety factors & the functional properties of intertidal limpet shells

M.Sc.	Subject of thesis
Anthony, Susan#*	2012-14 Nematocyst uptake, storage & use by aeolid nudibranchs
Montgomery, Emy#	2011-13 Scaling and mechanics of sea star locomotion
Miyashita, Tetsuto	2010-12 Hagfish cranial anatomy and basal craniate phylogeny
Hayne, Kurtis J.*	2008-11 Developmental plasticity of sea star tube feet and body form
Krause-Nehring, §§ Jacqueline	2007-08 Ontogeny & function of juvenile <i>Cancer</i> crab color polymorphism
Gillespie, Jayson M.*	2000-03 Systematics & development of sea spiders (Pycnogonida)
Marchinko, Kerry B.*	2000-02 Adaptive phenotypic plasticity in barnacle feeding legs
Cook, Kathryn A.	1988-92 Alarm response in northern abalone <i>Haliotis kamtschatkana</i>
Gratto, Cindy J.	1985-88 Effect of environment on shell form in <i>Thais lamellosa</i>
Boulding, Elizabeth G.	1980-83 Ecology & biomechanics of crab predation on infaunal bivalves

Membership on Supervisory Committees (** = current)

<u>M.Sc.</u>		<u>Ph.D.</u>	
Bird, N.	2014-**	Arkett, Stuart	1980-85
Cuervo, A.	2003-05; U. Puerto Rico	Braimah, Aki	1982-85; UA-Entomol.
Elliott, J.	1983-86	Durante, Kathy	1989-94
Eisenhower, Andrew	1987-91	Durkin, Emily	2014-**
Everson, P.	1980-81	Elliott, Glenn	2002-09
Harvell, C. Drew	1980-81	Eymann, Marcus	1986-91; UA-Entomol.
Harvey, Helene	1990-94; SFU-Biol. Sci.	Larson, Karl	1987-92
LeBlanc, Yves	1982-85	Lewis, Rick	1980-83
Ludeman, Danielle	2012-14	Liu, H.	1987-89
McCorquodale, Dave	1980-83	Martel, Andre	1985-88
Ogilvie, Gail	1983-86	McEuen, Scott	1983-85
Perry, Jonathan	1998-01	McIntyre, Grant	1995-00
Polzheim, Renee	1991-93	Molinerio, Darrin	2012-15 UA-EAS
Pohl, Greg	1988-92; UA-Entomol.	Pennington, Tim	1981-86
Riley, Ed	1981-83	Rumrill, Steve	1982-87
Stafford, Emily	2009-10; UA-EAS	Stafford, Emily	2010-14 UA-EAS
Vitek, Rob	1991-95	Stinson, Elizabeth	1982-85
		Straszynski, E.	1990-92; UA-Entomol.
		Wrubleski, Dale	1985-91; UA-Entomol.
		Young, Craig	1980-81

Undergraduate Honors Theses Supervised

Simard, Christine	2017	Coordination of sea-star podia during locomotion
Dornstauder, Janessa	2015	Abambulacral pedicellaria in the sea star, <i>Evasterias</i>
Gil, Kelsey	2013	Light response of a shallow water brittle star
McKenzie, Christina	2012	Shore-height variation in barnacle leg length
Montgomery, Emy	2011	Scaling of locomotion rate and body shape in sea stars

Hinchliffe, Rob	2006	Chiral tube-building behavior by caddisfly larvae
Peterson, Rhett	2005	Effect of claw handedness on aggressive interactions in crayfish
Rubeling, Daniella	2004	Symbionts of Barkley Sound sea urchins
Dearborn, Gregg	2003	Complete development of the sea spider <i>Achelua</i> (Pycnogonida)
Kelly, Jenn	2002	Adaptive significance of shell color polymorphism in <i>Nucella</i>
Rypien, Krystal	2000	Effect of size, density & habitat on claw injury in <i>Petrolisthes</i>
Mirth, Christen	1997	Size & shape allometry of fiddler crab claws (<i>Uca</i>)
Barton, Anise	1996	Comparative study of failure mechanics in brachyuran crab claws
Diane Wong	1994	Effect of heterozygosity on FA in tse-tse flies (w/ Dr. R. Gooding)
Harrison, Michelle	1994	Effect of risk stimuli on claw size and shape of a xanthid crab
Marko, Peter K.	1992	Geographic variation in shell plasticity of <i>Nucella emarginata</i>
Neufield, Michael J.	1992	Effect of water-borne predator stimuli on behavior of <i>Nucella</i>

Undergraduate Research Assistants Supervised, NSERC USRA(†) & Other

Appleton, Robert D.	1982-84	Labadie, Linda	1995
Barton, Anise	1996	Leroi, Armand	1986
Bein, Magnus†	2008	Man in't Veld, Naomi	2004-05
Bogen, Adrian†	1992	Marchinko, Kerry†	1999
Chippindale, Adam K.†	1987, 88	Marko, Peter K.†	1991, 92
Convey, Laurie E.	1987	Marks, Dawn	2006
Gale, Katie	2010	Miyashita, Tetsuto	2008-09
Gillespie, Jayson	1998, 99	Montgomery, Emaline†	2009-10 (summer, fall)
Gruman, Christine	2006-07	Rankine, Cassidy	2009 (fall)
Harrison, Michelle†	1993-95	Rypien, Krystal†	1999
Hart, Michael W.†	1984, 85	Simard, Christine†	2016, 2017
Hibbert, Jennifer	1992	Smith, Anna	2014, 2015, 2016
Hitchcock, Jesse	2011-12	Sykes, Jared	2012
Koch, Sophie (B398)	2014	Schneider, Murray	1981-82
Keates, Carisa	2013	Witkowska, Kate	2002-04

External Examiner of Ph.D. Theses from Other Universities

Willmore, Kathy	2006	University of Calgary, Calgary, Alberta
Dempster, Yvonne	1995	University of Cape Town, Cape Town, South Africa

Reviews of Faculty Members for Promotion, Tenure or CRC Renewal

Biology	2014	University of Alaska, Juneau, AK, USA
Biology	2014	McGill University, PQ
Biology	2014	Mount St. Vincent University, ON
Integrative Biology	2013	Guelph University, Guelph, ON
Ecology & Evolution	2013	University of California, Davis, USA
Biological Sciences	2012	University of Cincinnati, Cincinnati, OH, USA
Ecology & Evolutionary Biology	2010	University of Toronto, Toronto, ON
Biology	2010	American University, Washington, DC, USA
Biology	2009	McGill University, Montreal, PQ
Biology	2008	McMaster University, Hamilton, ON
Biology	2000	University of Victoria, Victoria, BC
Ecology & Evolutionary Biology	1997	Cornell University, Ithaca, NY, USA
Organismal Biology & Anatomy	1993	University of Chicago, Chicago, IL USA
Ecology & Evolutionary Biology	1991	Brown University, Providence, RI, USA
Ecology & Evolutionary Biology	1991	Cornell University, Ithaca, NY, USA

Reviewing for Scientific Journals (Jan. 1980 - June 2017; total= 346 reviews)

<i>Acta Oecologica</i>	1	<i>Genetics</i>	1
<i>Adaptive Behavior</i>	1	<i>Heredity</i>	2
<i>American J. of Physical Anthropology</i>	6	<i>Invertebrate Biology</i>	3
<i>American J. of Primatology</i>	2	<i>J. of Animal Ecology</i>	1
<i>American Malacological Union Bull.</i>	4	<i>J. of Evolutionary Biology</i>	2
<i>American Naturalist</i>	28	<i>J. of Experimental Biology</i>	1
<i>Animal Behaviour</i>	3	<i>J. of Exper. Marine Biology & Ecology</i>	6
<i>Avian Biology</i>	2	<i>Journal of Field Ornithology</i>	1
<i>Behavioral Ecology and Sociobiology</i>	1	<i>J. of Molluscan Studies</i>	3
<i>Biological Bulletin</i>	7	<i>J. of Morphology</i>	2
<i>Biological J. of the Linnean Society</i>	3	<i>J. of Zoology (London)</i>	5
<i>Biological Reviews</i>	3	<i>Laterality</i>	3
<i>Biology Letters (Royal Society)</i>	4	<i>Lethaia</i>	1
<i>BioScience</i>	2	<i>Limnology & Oceanography</i>	2
<i>Bulletin of Marine Science</i>	1	<i>Malacologia</i>	4
<i>Canadian Entomologist</i>	1	<i>Marine Ecology Progress Series</i>	3
<i>Canadian J. of Botany</i>	1	<i>Mathematical BioSciences</i>	3
<i>Canadian J. of Zoology</i>	18	<i>Nature Reviews- Genetics</i>	1
<i>Coloquios de Paleontología</i>	1	<i>Naturwissenschaften</i>	3
<i>Condor</i>	1	<i>Oikos</i>	1
<i>Current Biology</i>	2	<i>Paleobiology</i>	10
<i>Development, Genes & Evolution</i>	1	<i>PLOSI</i>	3
<i>Developmental Biology</i>	1	<i>PNAS</i>	4
<i>Ecology</i>	24	<i>Proc. Royal Society of London, Ser. B</i>	12
<i>Entomologia</i>	1	<i>Royal Society Open</i>	1
<i>Estuarine Research</i>	1	<i>Quarterly Review of Biology</i>	1
<i>Evolution</i>	104	<i>Science</i>	5
<i>Evolution & Development</i>	3	<i>Symmetry</i>	3
<i>Evolutionary Biology</i>	1	<i>Trans. of the American Fisheries Society</i>	4
<i>Fragmenta Faunistica</i>	1	<i>Trends in Ecology & Evolution</i>	3
<i>Functional Ecology</i>	2	<i>Veliger</i>	13
<i>Genesis</i>	1	<i>Zoology</i>	13
<i>Genetica</i>	3	various Symposia proceedings	3

Reviewing for Funding Agencies (Jan. 1980 - June 2017; total= 92 reviews)

Agence Nationale de la Recherche, France	1
Australian Research Council	3
Austrian Academy of Sciences	2
Boreal Institute/CBAR, University of Alberta, Research Grant	5
British Columbia Science Council Research Grant	1
Canada Foundation for Innovation	2
Canada Research Chairs Council	3
FQRNT, Quebec	1
Leverhulme Trust	1
Marie Curie Zukunftskolleg Incoming Fellowship Prog., Universität Konstanz, Germany	4
National Science Foundation (USA) Grants	18
Natural Environment Research Council (UK) Grants	3
NSERC (Canada): Discovery Grants, URF, Steacie Award nominees	47
Special Research Fund - University of Antwerp	1

National / International Scientific Advisor

International Recruitment Advisor, Swedish Research Council (two files)	Feb. 2014
Scientific advisor; <i>Human Language, Asymmetry in Nature and Computation</i> (SSHRC grant to A.M. DiSciullo, Univ. Quebec à Montréal)	2010-16
Review of Ruppert et al textbook <i>Invertebrate Zoology</i> (7th ed; 4 chapters)	June 2002
Site visit and evaluator of FONDAP program, Santiago, Chile (Oceanografía y Biología Marina, subprog. Invertebrates)	Aug. 1998, Apr. 1999, Jan. 2001

External assessment of nominee for Australian Academy of Science
 Review of film about Bamfield for Karvonen Films Ltd., Edmonton

Feb. 1999
 Nov. 1998

Citations per year, *Web of Science* (in parens: cites per year / total papers before that year)

1980-84: 101 (7.8)	1994: 83 (2.4)	2000: 304 (6.8)	2006: 287 (4.9)	2012: 360 (4.9)
1985-89: 232 (2.4)	1995: 114 (3.1)	2001: 244 (5.1)	2007: 322 (5.3)	2013: 289 (3.8)
1990: 88 (3.7)	1996: 155 (4.2)	2002: 262 (5.3)	2008: 314 (4.9)	2014: 314 (4.0)
1991: 59 (2.1)	1997: 234 (5.7)	2003: 261 (5.2)	2009: 306 (4.7)	2015: 308 (3.9)
1992: 64 (2.2)	1998: 271 (6.3)	2004: 294 (5.3)	2010: 328 (4.8)	2016: 300 (3.6)
1993: 112 (3.5)	1999: 274 (6.4)	2005: 281 (5.0)	2011: 325 (4.5)	

Hirsch's *h* index (ISI): 39 in 2016

Presentations (*- invited; § - also chaired a session)

- 2018 * Plenary Speaker, Int'l Crustacean Congress, Smithsonian, Washington, DC (May)
- 2016 Molecules, Cells and Systems, Dept. BioSciences, Univ. Alberta (Apr)
- 2015 * Pan Am Society for Evolutionary Developmental Biology, Berkeley, CA (Aug)
 Bamfield Marine Sciences Centre, WCUMSS† (Aug)
 § Canadian Society of Zoologists, Calgary, AB, Canada (May)
 * Bambi Seminar, Smithsonian Tropical Research Institute (BCI), Panama (May)
 * Tupper Seminar, Smithsonian Tropical Research Institute, Panama (May)
- 2014 * Theory Lunch, Dept. of Systems Biology, Harvard Univ., Cambridge, MA USA (June)
 * Keynote Speaker for "*Symmetry and Asymmetry in Biology*",
 Muséum national d'Histoire naturelle, Paris, France (April)
 * Closing Plenary Speaker, RE Peter Biology Conference, Univ. of Alberta (Feb)
- 2013 * Depts. of Biology & Mathematics, Washington State Univ. Vancouver (Oct)
 * Dept. of Biology, University of Calgary (Oct)
 § Canadian Society of Zoologists, Guelph, ON, Canada (May)
 * Smith College, Northampton, MA (April 2013)
- 2012 Bamfield Marine Sciences Centre, WCUMSS† (Jul.)
 § Canadian Society of Zoologists, Sackville, NB, Canada (May)
 § Society for Integrative and Comparative Biology, Charleston, SC, USA (Jan.)
- 2011 * European Society for Evolutionary Biology, Tübingen, Germany (Aug.)
- 2010 * Evolutionary Novelty and Evo-Devo, McGill University, Montreal (Nov.)
 * The Language Design Conference, Université du Québec à Montréal (May)
 * Western Washington University, Bellingham (May)
 * Centre for Evolutionary and Ecological Studies, Groningen Univ., Netherlands (April)
 * Institute of Biology (Seminar & Master Class), Leiden University, Netherlands (April)
 * Evolution & Ecology (Seminar & Master Class), Wageningen Univ., Netherlands (April)
 * Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam (April)
 * Evolutionary Morphology Series, University of Chicago (Apr.)
 * Society for Integrative and Comparative Biology, Seattle (Jan.)
- 2009 * Keynote speaker for "*Through the Looking Glass: A Symposium on Asymmetry and Mirror-Images in Nature*", Netherlands Centre for Biodiversity, Leiden (Nov.)
 * Institute of Biology, Leiden University, Netherlands (Nov.)
 * Evolutionary Novelty and Evo-Devo, University of Alberta, Edmonton (Nov.)
 * The Crustacean Society, Tokyo, Japan (Sept.)
 European Society for Evolutionary Biology, Turin, Italy (Aug.)
 * Canadian Society of Zoologists, Toronto, Ontario (May)
 * Dept of Biological Sciences, Darwin Day Celebration, Univ. of Alberta (Feb)
- 2008 * Department of Biology, Memorial University, St. Johns (Oct.)
 * Department of Biology, St. Francis Xavier University, Antigonish (Oct.)
 * School of Science & Technology, Cape Breton University, Sydney (Oct.)
 * Invited Plenary Lecture, Lorentz Center, Leiden University, Netherlands, in "*Symmetry as a Modern Scientific Concept: Historical and Philosophical Perspectives*" (March)
- 2007 Canadian Society for Ecology and Evolution, Toronto, Ontario (May)

- 2006 § Canadian Society of Zoologists, Montreal, Quebec (May)
 * Department of Biology, Dalhousie University (Sept.)
 * Biology Department, Acadia University (Sept.)
 * Gordon Research Conference, Organic Reactions & Processes, Bryant Univ. (July)
- 2005 § Canadian Society of Zoologists, Edmonton, Alberta (May)
 Dept of Biological Sciences- Systematics & Evolution series, Univ. of Alberta (April)
 * Department of Biology, University of Munich (Sept.)
 Dept of Biological Sciences- Systematics & Evolution series, Univ. of Alberta (April)
- 2004 § Canadian Society of Zoologists, Kingston, Ontario (May)
 * Department of Zoology, University of Toronto, Toronto (Nov.)
 * Department of Biology, McMaster University, Hamilton (Nov.)
 * Department of Biology, University of Puerto Rico (Sept.)
 Centennial Symposium, Friday Harbor Laboratories, Washington (June)
- 2003 § Canadian Society of Zoologists, Wolfville, Nova Scotia (May)
 Evolution of Developmental Diversity, Cold Spring Harbor Laboratories, New York (April)
 * Department of Biology, University of Victoria (Dec.)
 Bamfield Marine Station, WCUMBS† (Aug.)
 * Invited Plenary Lecture, 100th Anniversary University of Puerto Rico Graduate Student
 Research Symposium: “*Biology of the New Millennium*” (March)
 * Evolutionary Morphology Series, University of Chicago (Jan.)
- 2002 International Congress of Systematics and Evolutionary Biology, Patras, Greece (Sept.)
- 2001 * International Chirality Conference, Orlando, FL (July)
 International Workshop on Left/Right Asymmetry, Madrid, Spain (June)
 * International Conference on Ecosystem Health, Moscow, Russia (May)
- 2000 * Clemson University, Clemson (Oct.)
 Bamfield Marine Station, WCUMBS† (July)
 * German Zoological Society, Bonn, Germany (Invited Plenary Lecture, June)
 * Alberta Paleontological Association, Calgary (April)
 Department of Biological Sciences, University of Alberta, Edmonton (Jan.)
- 1999 * University of Colorado, Boulder (Dec.)
 Bamfield Marine Station, WCUMBS† (July)
- 1998 * Cornell University, Ithaca (Dec.)
 * Department of Ecology & Evolution, Yale University, New Haven (Dec.)
 * Department of Zoology, University of Toronto, Toronto (Nov.)
 * Department of Biology, Queen's University, Kingston (Nov.)
 Society for the Study of Evolution, University of British Columbia, Vancouver (June)
- 1997 * Entomological Society of Canada, University of Alberta, Edmonton (Oct.)
 Department of Biological Sciences, University of Alberta, Edmonton (Sept.)
 § Society for the Study of Evolution, University of Colorado, Boulder (June)
- 1996 University of Texas, Austin (Nov.)
 * Florida State University, Tallahassee (Nov.)
 Bamfield Marine Station, WCUMBS† (Aug.)
 * National Academy of Sciences (USA), Irvine, CA (Invited colloquium speaker, May)
 Harbor Branch Oceanographic Institution, Fort Pierce, FL (March)
 * Department of Biology, Florida International Univ., Miami, FL (March)
 * 76th Presidential Address, Western Society of Naturalists, Fort Worden, WA (Jan.)
- 1995 * SSE/Numerical Taxonomy Group (Invited Symposium Speaker), McGill Univ. (July)
 Society for the Study of Evolution, McGill University (July)
- 1994 Western Society of Naturalists, Monterey, CA (Dec.)
 Indiana Molec. Biol. Symp. “*Origin & Evolution of Animal Body Plans*”, Bloomington (Oct.)
 * Guest Lecturer, Molecular Approaches to Marine Ecology, Friday Harbor Labs (Aug.)
 * Evolutionary Morphology Series. University of Chicago (Apr.)
- 1993 Centenary Symposium, Malacological Society of London (Sept.)
 * Biotest: Current & Future Prospects (Biological Risk Assessment), Moscow, Russia (Aug.)
 * Developmental Instability: Its Origins and Evolutionary Implications, Tempe, AZ (June)
- 1992 * Chris Reed Memorial Symp.: Reproduction & Development of Marine Invertebrates (June)

- Canadian Soc. of Zoologists, St. Francis Xavier (May)
 * Department of Biology, University of Victoria (March)
 1991 * Department of Zoology, University of British Columbia (Nov.)
 * International Ecological Toxicology Conf., Special session on Biotest, Seattle WA (Nov.)
 1990 * Center for Population Biology (Short Course), University of California, Davis (Nov.)
 * Department of Zoology, University of California, Davis (Feb.)
 Department of Ecology and Evolutionary Biology, University of California, Irvine (Feb.)
 * Department of Biology, California State University, Los Angeles (Feb.)
 * Department of Biology, University of California, Los Angeles (March)
 * Canadian Soc. of Zoologists (Invited Symposium Speaker), Simon Fraser Univ. (May)
 1989 Fourth International Marine Biological Workshop, Hong Kong (April)
 * International Symposium on Population Phenogenetics, Moscow, USSR (May)
 Tvärminne Zoological Station, University of Helsinki, Tvärminne, Finland (May)
 1988 * Department of Zoology, University of Alberta (March)
 * Bamfield Marine Station, WCUMBS† (May)
 Society for the Study of Evolution, Asilomar, CA (June)
 * American Malacological Union, Charleston, SC (June)
 * International Symp. on Littorinid Biology, Tjärnö, Sweden, (1 invited, 1 contrib.; July)
 1986 * Gatty Marine Laboratory, The University, St. Andrews, Scotland (Oct.)
 * Animal Biology Group, University College of North Wales, Bangor (Oct.)
 Friday Harbor Laboratories, University of Washington (May)
 1985 * Western Society of Naturalists, Monterey, CA (Dec.)
 Society for the Study of Evolution, Chicago, IL. (June)
 * 6th Pacific Ecology Conference, Bamfield Marine Station (Feb.)
 1984 * Dept. of Biological Sciences, Simon Fraser University (Oct.)
 Bamfield Marine Station, WCUMBS† (July)
 Friday Harbor Laboratories, University of Washington (July)
 * Dept. of Zoology, Oregon State University (May)
 * Hopkins Marine Station, Stanford University (May)
 * Dept. of Biological Sciences, University of California, Santa Barbara (May)
 * Dept. of Zoology, University of California, Berkeley (April)
 1983 Western Society of Naturalists, Simon Fraser University (Dec.)
 * Glacier Bay Science Symposium, Gustavos, AK (Sept.)
 1982 * Dept. of Anatomy, University of Chicago (Sept.)
 * Dept. of Earth and Planetary Sciences, Johns Hopkins University (Sept.)
 * Dept. of Zoology, University of Maryland (Sept.)
 * Dept. of Zoology, Duke University (Sept.)
 Bamfield Marine Station, WCUMBS† (Aug.)
 International Symposium on Molluscan Genetics, New Orleans, LA (July)
 * Benthic Ecology Meeting, Harvard University (March)
 1981 * Dept. of Biology, University of Calgary (Dec.)
 * Institute of Animal Resource Ecology, University of British Columbia (Sept.)
 Bamfield Marine Station, WCUMBS† (July)
 Benthic Ecology Meeting, Yale University (March)
 1980 Benthic Ecology Meeting, Williamsburg, Virginia (March)
- † Western Canadian Universities Marine Biological Society

Media Coverage (date aired or published; only original pieces based on direct interviews)

Radio

- 2013 **National Public Radio (USA) *Academic Minute***- Barnacle reproduction (Mar. 27)
CBC Radio *Quirks & Quarks*- Barnacles sow their seed in the sea (Jan. 19)
 2008 **CBC Radio *Quirks & Quarks***- The barnacle's penis (Feb. 9)

Print

- 2017 *Natural History Magazine*- Gynandromorph lobster, Carol Butler (May)
- 2016 *BC Magazine*- On Bamfield Marine Sciences Centre, Marianne Scott (June)
Smithsonian.com- Genetics of snail coiling, Maya Wei-Haas (Feb.)
- 2015 *Bionieuws* (Netherlands, in Dutch)- Animal asymmetries, Willy van Strien (Oct.)
Smithsonian Magazine- Kangaroo handedness, Devin Powell (June)
Live Science- Barnacle reproduction, Joseph Castro (Feb.)
New Scientist- Genetic assimilation, Colin Barras (Jan.)
- 2013 *New Scientist*- Unconventional evolution, Bob Holmes (Oct.)
Science Magazine- ScienceShot: Why most snails coil to the right (May 20)
EchinoBlog- Biophysics meets old school taxonomy! Ochre star *Pisaster ochraceus* can adapt body shape to wave action! (May 14)
Inside JEB- Slimming down key to surviving waves (May 1)
Bionieuws (Netherlands, in Dutch)- Barnacles leak sperm in the ocean (Feb. 2)
The Gateway (Univ. Alberta)- Spunky scientists expose barnacle sperm secrets (Jan. 23)
Postmedia News (Montreal Gazette, Ottawa Citizen, The Province-Vancouver, Vancouver Sun, Edmonton Journal)- Old beliefs on barnacle sex scraped away (Jan. 18)
Science Magazine- Rethinking barnacle reproduction (Jan. 18)
Smithsonian.com- Researchers discover new method of barnacle sex (Jan. 17)
Nature News- Barnacles trust their sperm to the waves (Jan. 15)
Science Now- Sloppy barnacle sex shocks scientists (Jan. 15)
Nat'l Geographic News- Barnacles leak sperm into ocean, upending mating theory (Jan. 15)
Science News- Finally, the truth about barnacle sex is revealed (Jan. 15)
- 2012 *EchinoBlog*- What are the fastest known starfish? (July 25)
- 2008 *CanWest News Service (Times Colonist (Victoria); Edmonton Journal)*- Barnacles: The big studs of the sea (Feb. 8)
Science Daily- Barnacles go to great lengths to mate (Feb. 7)
LiveScience- For barnacles, sex is a real stretch (Feb. 6)
- 2006 *Pharyngula Blog*- Symmetry breaking and genetic assimilation (Aug. 30)

Publications: (please see attached list)

Publications: A. RICHARD PALMER

Refereed papers (** order of authorship alphabetical; co-authors in bold are ARP students)

- 1) **Kaji, T.**, A. Anker, C.S. Wirkner & **A.R. Palmer** 2017. Parallel saltational evolution of ultrafast movements in snapping shrimp claws. *Current Biology* (accepted Oct. 7. 2017).
- 2) **Luque, J.**, J.H. Christy, A.J.W. Hendy, M.S. Rosenberg, **K.A. Kerr**, R.W. Portell & **A.R. Palmer** 2017. Quaternary intertidal and supratidal crabs (Decapoda, Brachyura) from tropical America and the systematic affinities of fossil fiddler crabs. *Journal of Systematic Palaeontology* (in press, accepted 2017-06-27). DOI: 10.1080/14772019.2017.1362599.
- 3) **Kaji, T.** & **A.R. Palmer** 2017. How reversible is development? Contrast between developmentally plastic gain and loss of segments in barnacle feeding legs. *Evolution* 71:756–765. (****Highlighted on Cover****)
- 4) **Palmer, A.R.** 2016. What determines direction of asymmetry: Genes, environment or chance? *Philosophical Transactions of the Royal Society of London*. 371:20150417.
- 5) **Kaji, T.**, K. Kakui, N. Miyazaki, K. Murata & **A.R. Palmer** 2016. Mesoscale morphology at nanoscale resolution: Serial block-face scanning electron microscopy reveals fine 3D detail of a novel silk spinneret system in a tube-building tanaid crustacean. *Frontiers in Zoology* (2016) 13:14.
- 6) **Webster, N.** & **A.R. Palmer** 2016. Shaving a shell: Effect of manipulated sculpture and feeding on shell growth and sculpture development in *Nucella lamellosa* (Muricidae: Ocenebrinae). *Biological Bulletin* 230:1-14.
- 7) **Barzandeh, M.** & **A.R. Palmer** 2015. Novel mating modes on wave-swept shores: Aerial copulation and sperm release in an intertidal stalked barnacle. *Marine Biology* 162:881-888.
- 8) **Palmer, A.R.** 2015. Barnacle reproduction. *McGraw Hill Yearbook of Science & Technology 2015* p. 37-38.
- 9) **Miyashita, T.** & **A.R. Palmer** 2014. Handed behavior in hagfish - an ancient vertebrate lineage - and a survey of lateralized behaviors in other invertebrate chordates and elongate vertebrates. *Biological Bulletin* 226: 111-120. (****Highlighted on Cover****)
- 10) **Barzandeh, M.**, C. Davis & **A.R. Palmer** 2014. Where even a long penis can't help: Evidence of long-distance spermcast mating in two acorn barnacles. *Journal of Experimental Marine Biology and Ecology* 454: 49-54.
- 11) **Hayne, K.** & **A.R. Palmer** 2013. Intertidal sea stars (*Pisaster ochraceus* (Brandt)) alter body shape in response to wave action. *Journal of Experimental Biology* 216: 1717-1725. (****Highlighted in Inside JEB****)
- 12) **Barzandeh M.**, C.S. Davis, **C.J. Neufeld**, D.W. Coltman & **A.R. Palmer** 2013. Something Darwin didn't know about barnacles: Spermcast mating in a common stalked species. *Proceedings of the Royal Society of London. Biological Sciences* 280(1754): 20122919. (****Extensive media coverage****), see <http://www.biology.ualberta.ca/palmer.hp/pubs/13PRSL/13PRSL.htm>
- 13) **Palmer, A.R.** 2012. Developmental plasticity and the origin of novel forms: Unveiling of cryptic genetic variation via “use and disuse”. *Journal of Experimental Zoology (Molecular and Developmental Evolution)* 318B: 466-479.
- 14) **Palmer, A.R.** 2012. Developmental origins of normal and anomalous random right-left asymmetry: Lateral inhibition versus developmental error in a threshold trait. *Contributions to Zoology* 81(2): 111-124.
- 15) **Montgomery, E.** & **A.R. Palmer** 2012. Effects of body size and shape on locomotion in the bat star (*Patiria miniata*). *Biological Bulletin* 222: 222-232.

Publications: A. R. Palmer (cont.)

- 16) **Neufeld, C. & A.R. Palmer** 2011.** Learning, developmental plasticity, and the rate of morphological evolution. p. 337-356. In: *Epigenetics* (B. Hallgrímsson & B.K. Hall, eds.). Elsevier.
- 17) **Hinchliffe, R. & A.R. Palmer** 2010.** Curious chiral cases of caddisfly larvae: Handed behavior, asymmetric forms, evolutionary history. *Integrative and Comparative Biology* 50(4): 606-618.
- 18) **Krause-Nehring, J., J.M. Starck & A.R. Palmer** 2010. Juvenile colour polymorphism in the red rock crab, *Cancer productus*: Patterns, causes, and possible adaptive significance. *Zoology* 113: 131-139. (****Highlighted on Cover****)
- 19) Nienhuis, S.** , **A.R. Palmer**** & C. Harley 2010. Elevated CO₂ affects shell dissolution rate but not calcification rate in a marine snail. *Proceedings of the Royal Society of London. Biological Sciences* 277: 2553-2558.
- 20) **Palmer, A.R.** 2010. Scale-eating cichlids: From hand(ed) to mouth. *Journal of Biology* 9(2-11): 1-4.
- 21) Rosen, E., B. Schwarz & **A.R. Palmer** 2009. Smelling the difference: Hermit crab responses to predatory and non-predatory crabs. *Animal Behaviour* 78: 691–695.
- 22) **Palmer, A.R.** 2009. Animal asymmetry. *Current Biology* 19 (12): R473-R477. (****Highlighted in New Scientist****)
- 23) **Edgell, T.C., B.R. Lynch, G.C. Trussell & A.R. Palmer** 2009. Experimental evidence for the rapid evolution of behavioral canalization in natural populations. *American Naturalist* 174(2): 434-440. (****Highlighted in Faculty of 1000****)
- 24) **Neufeld, C. & A.R. Palmer** 2008. Precisely proportioned: Intertidal barnacles alter penis form to suit coastal wave action. *Proceedings of the Royal Society of London. Biological Sciences* 275: 1081-1087. (****Highlighted in Faculty of 1000****)
- 25) **Bergstrom, C.A. & A.R. Palmer** 2007. Which way to turn? Effect of direction of body asymmetry on turning and prey strike orientation in starry flounder (*Platichthys stellatus*, Pleuronectidae). *Journal of Fish Biology* 71: 737–748.
- 26) **Rypien, K.L. & A.R. Palmer** 2007. The effect of sex, size and habitat on the incidence of puncture wounds in the claws of the porcelain crab *Petrolisthes cinctipes* (Anomura: Porcellanidae). *Journal of Crustacean Biology* 27: 59–64.
- 27) Levin, M. & **A.R. Palmer** 2007.** Left-right patterning from the inside out: Widespread evidence for intracellular control. *BioEssays* 29: 271–287.
- 28) **Palmer, A.R.** 2006. Caught right-handed. *Nature* 444: 689-691.
- 29) **Anker, A., S.T. Ahyong, P.Y. Noël & A.R. Palmer** 2006. Morphological phylogeny of alpheid shrimps: Parallel preadaptation and the origin of a key morphological innovation – the snapping claw. *Evolution* 60: 2507–2528.
- 30) Marin, I.N., **A. Anker**, T.A. Britayev & **A.R. Palmer** 2005. Symbiosis between the alpheid shrimp *Athanas ornithorhynchus* Banner and Banner, 1973 (Crustacea: Decapoda), and the brittle star *Macrophiothrix longipeda* (Lamarck, 1816) (Echinodermata: Ophiuroidea). *Zoological Studies* 44: 234-241.
- 31) **Anker, A., G.-V. Murina, C. Lira, J.A. Vera Caripe, A.R. Palmer & M.-S. Jeng** 2005. Macrofauna associated with echiuran burrows: A review with new observations on the innkeeper worm *Ochetostoma erythrogrammon* Leuckart and Rüppel, in Venezuela. *Zoological Studies* 44: 157-192.
- 32) **Palmer, A.R.** 2005. Antisymmetry. p. 359-397 (+1 color plate). In: *Variation* (B. Hallgrímsson & B.K. Hall, eds.). Elsevier.

Publications: A. R. Palmer (cont.)

- 33) **Palmer, A.R.** 2004. Symmetry-breaking and the evolution of development. *Science* 306: 828-833. (***Highlighted in New Scientist, Faculty of 1000***)
- 34) **Eaves, A.A. & A.R. Palmer**** 2003. Widespread cloning in echinoderm larvae. *Nature* 425: 126.
- 35) **Marchinko, K.B. & A.R. Palmer** 2003. Feeding in flow extremes: Dependence of cirrus form on wave-exposure in four barnacle species. *Zoology* 106: 127-141. (***Highlighted on Cover***)
- 36) **Marko, P.B., A.R. Palmer & G.J. Vermeij** 2003. Resurrection of *Nucella ostrina* (Gould, 1952), lectotype designation for *N. emarginata* (Deshayes, 1839), and molecular genetic evidence for Pleistocene speciation. *Veliger* 46: 77-85.
- 37) **Palmer, A.R.** 2003. Chimpanzee right-handedness reconsidered: Sampling issues and data presentation. *American Journal of Physical Anthropology* 121: 382-384.
- 38) **Palmer, A.R. & C. Strobeck** 2003. Fluctuating asymmetry analyses revisited. p. 279-319. In: *Developmental Instability (DI): Causes and Consequences* (M. Polak, ed). Oxford University Press.
- 39) **Palmer, A.R.** 2002. Chimpanzee right-handedness reconsidered: Evaluating the evidence with funnel plots. *American Journal of Physical Anthropology* 118: 191-199.
- 40) **Arsenault, D.J., K.B. Marchinko & A.R. Palmer**** 2001. Precise tuning of barnacle leg length to coastal wave action. *Proceedings of the Royal Society of London. Biological Sciences* 268: 2149-2154.
- 41) **Palmer, A.R.** 2000. Quasireplication and the contract of error: Lessons from sex ratios, heritabilities and fluctuating asymmetry. *Annual Review of Ecology and Systematics* 31: 441-480.
- 42) **Palmer, A.R. & L.M. Hammond** 2000. The emperor's codpiece: A postmodern perspective on biological asymmetries. *International Society for Behavioral Ecology, Newsletter* 12: 13-20.
- 43) **Taylor, G.M., A.R. Palmer & A.C. Barton** 2000. Variation in safety factors of claws within and among six species of *Cancer* crabs (Decapoda: Brachyura). *Biological Journal of the Linnean Society* 70: 37-62.
- 44) **Palmer, A.R., G.M. Taylor & A.C. Barton** 1999. Cuticle strength and the size-dependence of safety factors in *Cancer* crab claws. *Biological Bulletin* 196: 281-294.
- 45) **Palmer, A.R.** 1999. Detecting publication bias in meta-analyses: A case study of fluctuating asymmetry and sexual selection. *American Naturalist* 154: 220-233.
- 46) **Rowe, L., R.R. Repasky & A.R. Palmer** 1997. Condition-dependent symmetry in sexually selected traits: Fluctuating asymmetry or antisymmetry? *Evolution* 51: 1401-1408.
- 47) **Palmer, A.R. & C. Strobeck** 1997. Fluctuating asymmetry and developmental stability: Heritability of observable variation vs. heritability of inferred cause. *Journal of Evolutionary Biology* 10: 39-49.
- 48) **Collins, T., K. Frazer, A.R. Palmer, G.J. Vermeij & W.M. Brown** 1996. Evolutionary history of Northern Hemisphere *Nucella* (Gastropoda: Muricacea): Molecular, morphological, ecological and paleontological evidence. *Evolution* 50: 2287-2304.
- 49) **Palmer, A.R.** 1996. From symmetry to asymmetry: Phylogenetic patterns of asymmetry variation in animals and their evolutionary significance. *Proceedings of the National Academy of Sciences (USA)* 93: 14279-14286.

Publications: A. R. Palmer (cont.)

- 50) **Labadie, L.V. & A.R. Palmer**** 1996. Pronounced heterochely in the ghost shrimp, *Neotrypaea californiensis* (Decapoda: Thalassinidea: Callinassidae): Allometry, inferred function and development. *Journal of Zoology (London)* 204(1): 659-675.
- 51) **Palmer, A.R.** 1996. Waltzing with asymmetry. *BioScience* 46: 518-532.
- 52) **Smith, L.D. & A.R. Palmer** 1994. Effects of manipulated diet on size and performance of brachyuran crab claws. *Science* 264: 710-712. (****Highlighted on Cover****)
- 53) **Palmer, A.R.** 1994. Temperature sensitivity, rate of development and generation time: Geographic variation in laboratory-reared *Nucella* and a cross-phyletic overview. p. 177-194. In: *Reproduction and Development of Marine Invertebrates* (W.H. Wilson, S.A. Stricker, G.L. Shinn, Eds.). Johns Hopkins University Press, Baltimore.
- 54) **Palmer, A.R.** 1994. Fluctuating asymmetry analyses: A primer. p. 335-364. In: *Developmental Instability: Its Origins and Evolutionary Implications* (T. Markow, Ed.). Kluwer Academic Publishers, Dordrecht.
- 55) **Palmer, A.R., C. Strobeck & A.K. Chippindale** 1993. Bilateral variation and the evolutionary origin of macroscopic asymmetries. *Genetica* 89: 201-218.
- 56) **Chippindale, A.K. & A.R. Palmer** 1993. Persistence of statistical departures from symmetry over multiple molts in individual brachyuran crabs: Relevance to developmental stability. *Genetica* 89: 185-199.
- 57) **Palmer, A.R.** 1992. Intraspecific variation in three species of rocky shore gastropods from Hong Kong: Correlations among habitats and a comparison with temperate species. p. 649-691. In: *Proceedings of the Fourth International Marine Biological Workshop: The Marine Flora & Fauna of Hong Kong and Southern China. Vol. I. General Proceedings* (B. Morton, Ed.). Hong Kong University Press.
- 58) **Palmer, A.R. & C. Strobeck** 1992. Fluctuating asymmetry as a measure of developmental stability: Implications of non-normal distributions and power of statistical tests. *Acta Zoologica Fennica* 191: 55-70.
- 59) **Palmer, A.R.** 1992. Calcification in marine molluscs: How costly is it? *Proceedings of the National Academy of Sciences (USA)* 89: 1379-1382.
- 60) **Marko, P.B. & A.R. Palmer** 1991. Responses of a rocky shore gastropod to the effluents of predatory and non-predatory crabs: Avoidance and attraction. *Biological Bulletin* 181: 363-370.
- 61) **Palmer, A.R., S.D. Gayron & D.S. Woodruff** 1990. Reproductive, morphological, and genetic evidence for two cryptic species of Northeastern Pacific *Nucella*. *Veliger* 33(4): 325-338.
- 62) Vermeij, G.J., **A.R. Palmer** & D.R. Lindberg 1990. Range limits and dispersal of molluscs in the Aleutian Islands, Alaska. *Veliger* 33(4): 346-354.
- 63) **Palmer, A.R.** 1990. Predator size, prey size, and the scaling of vulnerability: Hatchling gastropods vs. barnacles. *Ecology* 71: 759-775.
- 64) **Palmer, A.R.** 1990. Effect of crab effluent and scent of damaged conspecifics on feeding, growth, and shell morphology of the Atlantic dogwhelk *Nucella lapillus* (L.). *Hydrobiologia* 193: 155-182.
- 65) **Palmer, A.R.** 1988. Feeding biology of *Ocenebra lurida* (Prosobranchia: Muricacea): Diet, predator-prey size relations, and attack behavior. *Veliger* 31: 192-203.
- 66) **Appleton, R.D. & A.R. Palmer**** 1988. Water-borne stimuli released by predatory crabs and damaged prey induce more predator-resistant shells in a marine gastropod. *Proceedings of the National Academy of Sciences (USA)* 85: 4387-4391.

Publications: A. R. Palmer (cont.)

- 67) **Hart, M.W. & A.R. Palmer**** 1987. Stereotypy, ontogeny and heritability of drill site selection in thaidid gastropods. *Journal of Experimental Marine Biology and Ecology* 107: 101-120.
- 68) **Palmer, A.R. & C. Strobeck** 1986. Fluctuating asymmetry: Measurement, analysis, patterns. *Annual Review of Ecology and Systematics* 17: 391-421.
- 69) **Palmer, A.R.** 1986. Inferring relative levels of genetic variability in fossils: The link between heterozygosity and fluctuating asymmetry. *Paleobiology* 12: 1-5.
- 70) **Palmer, A.R.** 1985. Genetic basis of shell variation in *Thais emarginata* (Prosobranchia, Muricacea) I. Banding in populations from Vancouver Island. *Biological Bulletin* 169: 638-651.
- 71) **Mercurio, K.S.****, **A.R. Palmer**** & **R.B. Lowell** 1985. Predator-mediated microhabitat partitioning by two species of visually cryptic, intertidal limpets. *Ecology* 66: 1417-1425.
- 72) **Palmer, A.R.** 1985. Quantum changes in gastropod shell morphology need not reflect speciation. *Evolution* 39(3): 699-705.
- 73) **Palmer, A.R.** 1985. Adaptive value of shell variation in *Thais* (or *Nucella*) *lamellosa*: Effect of thick shells on vulnerability to and preference by crabs. *Veliger* 27(4): 349-356.
- 74) **Palmer, A.R.** 1984. Prey selection by thaidid gastropods: Some field tests of foraging models. *Oecologia* 62: 162-172.
- 75) **Palmer, A.R.** 1984. Species cohesiveness and genetic control of shell color and form in *Thais emarginata* (Prosobranchia, Muricacea): Preliminary results. *Malacologia* 25: 477-491.
- 76) **Palmer, A.R.** 1983. Growth rate as a measure of food value in thaidid gastropods: Assumptions and implications for prey morphology and distribution. *Journal of Experimental Marine Biology and Ecology* 73: 95-124.
- 77) **Palmer, A.R.** 1983. Relative cost of producing skeletal organic matrix versus calcification: Evidence from marine gastropods. *Marine Biology* 75: 287-292.
- 78) **Palmer, A.R.** 1982. Growth in marine gastropods: A non-destructive technique for independently measuring shell and body weight. *Malacologia* 23:63-73.
- 79) **Palmer, A.R.**, J. Szymanska & L. Thomas 1982. Prolonged withdrawal: A possible predator evasion behavior in *Balanus glandula* (Crustacea, Cirripedia). *Marine Biology* 67: 51-55.
- 80) **Palmer, A.R.** 1982. Predation and parallel evolution: Recurrent parietal plate reduction in balanomorph barnacles. *Paleobiology* 8: 31-44.
- 81) **Palmer, A.R.** 1981. Predator errors, foraging in unpredictable environments and risk: The consequences of prey variation in handling time versus net energy. *American Naturalist* 118: 908-915.
- 82) **Palmer, A.R.** 1981. Do carbonate skeletons limit the rate of body growth? *Nature* 292: 150-152.
- 83) **Palmer, A.R. & R.R. Strathmann** 1981. Scale of dispersal in varying environments and its implications for life histories of marine invertebrates. *Oecologia* 48: 308-318.
- 84) **Palmer, A.R.** 1980. Locomotion rates and shell form in the Gastropoda: A re-evaluation. *Malacologia* 19: 289-296.
- 85) **Palmer, A.R.** 1979. Fish predation and the evolution of gastropod shell sculpture: Experimental and geographic evidence. *Evolution* 33: 697-713.

Publications: A. R. Palmer (cont.)

- 86) Paine, R.T. & **A.R. Palmer** 1978. *Sicyases sanguineus*: A unique trophic generalist from the Chilean intertidal zone. *Copeia* 1978: 75-81.
- 87) **Palmer, A.R.** 1977. Function of shell sculpture in marine gastropods: Hydrodynamic destabilization in *Ceratostoma foliatum*. *Science* 197: 1293-1295.

Submitted

- 88) **Newson, O.**, R. Basi & **A.R. Palmer**. Lamellose axial shell sculpture reduces gastropod vulnerability to sea star predation. *Biological Bulletin* (13 MS pages, 2 Figs. 1 Table; submitted Oct 10, 2017)
- 89) **Luque, J.**, R.M. Feldmann, H. Karasawa, C.E. Schweitzer, C.B. Cameron, **K.A. Kerr**, F.J. Vega, A. Duque, M. Strange, **A.R. Palmer** & C. Jaramillo Cretaceous 'chimaera' fossils reveal great versatility of form and rapid radiation in early crabs. *Proceedings of the National Academy of Science* (near submission)
- 90) **Kerr, K.A.** **A.R. Palmer**, **J. Luque** & J.H. Christy. Development of bilateral hypertrophy and asymmetry of chelipeds in *Uca burgersi* (near submission)
- 91) **Webster, N.B.** & **A.R. Palmer**. Connecting pattern to process: How snails grow spiral shell sculpture in *Nucella ostrina* (Muricidae: Ocenebrinae) (near submission)

Publications: A. R. Palmer (cont.)Translations

- 92) **Palmer, A.R.** 2011. History of a mussel bed. Observations on a phase of faunal disequilibrium (English translation of: Fischer-Piette, E. 1935. Histoire d'une Mouliere. Observations sur une phase de déséquilibre faunique. *Bulletin Biologique de la France et de la Belgique* 5: 153-177) p. 333-350. In: *The Essential Naturalist: Timeless Readings in Natural History* (Graham, M.H., J. Parker & P.K. Dayton eds.). University of Chicago Press, Chicago.

Book Reviews (** order of authorship alphabetical)

- 93) **Arsenault, D.J. & A.R. Palmer** 2000.** Book review of: "The Ecology and Evolution of Inducible Defenses". R. Tollrian & C. D. Harvell, Eds. *American Zoologist* 40(4):708.
- 94) Palmer, A.R. (Pete) & **A. Richard Palmer** 1993. "Darwin on Trial", by P.E. Johnson. Regnary Gateway, Washington, DC, 195pp. *American Journal of Science* 293:865-866.
- 95) **Palmer, A.R.** 1983. "The Shore Environment. Volume 1: Methods", by Price, J.H., D.E.G. Irvine and W.F. Farnham (eds), Academic Press, NY. 321 + XLI pp. *American Scientist* 71:84.

Letters to the Editor / Editorials

- 96) **Palmer, A.R.** 2005. Is the ID debate proof of an intelligent deceiver? *Nature* 438:422 (blogged within 24 hr of publication on *Panda's Thumb*-
http://www.pandasthumb.org/archives/2005/11/yest_another_co.html)
- 97) Starck, J.M., Bosch, T.C.G. **Palmer, A.R.**, Agata, K. 2005. *Zoology* 108: 1. (editorial)
- 98) **Palmer, A.R.** 2004. Selection for asymmetry? *Science* 306:812.
- 99) Starck, J.M., Bosch, T.C.G. **Palmer, A.R.**, Agata, K. 2004. *Zoology* 107: 1. (editorial)
- 100) **Palmer, A.R.** 2003. Was visionary Seaborg from far-sighted stock? *Nature* 421:473.
- 101) Starck, J.M., Bosch, T.C.G. **Palmer, A.R.**, Agata, K. 2003. *Zoology* 106: 1. (editorial)
- 102) Starck, J.M., Bosch, T.C.G. **Palmer, A.R.**, Agata, K. 2002. *Zoology* 105: 1. (editorial)
- 103) Starck, J.M., Bosch, T.C.G. **Palmer, A.R.**, Agata, K. 2001. Relaunching ZOOLOGY. *Zoology* 104: 1. (editorial)
- 104) **Palmer, A.R.** 1993. Whither Pentastomida? *Nature* 361: 214.
- 105) **Palmer, A.R.** 1990. Coiling hand. *Nature* 345:212.
- 106) **Palmer, A.R.** 1987. Mitochondrial DNA in sperm. *Science* 238:1217.

Publications on the internet

- 107) **Palmer, A.R.** *Biological Asymmetry* Home Page (major update, April. 2001)
(<http://www.biology.ualberta.ca/palmer.hp/asy/asymmetry.htm>)
- 108) *Survey of Invertebrates* Home Page (Zool 250; major update, Jan-Apr. 2013)
(<http://www.biology.ualberta.ca/courses.hp/zool250/Z250.html>)
- 109) *Marine Science* Home Page (Biol361; major update, Jan-Apr. 2007)
(<http://www.biology.ualberta.ca/courses.hp/biol361/B361.html>)

Computer programs

- 110) **Palmer, A.R.** 1991, 1995. *ExCaliper*: A Macintosh program for direct data entry from digital calipers.

Publications: A. R. Palmer (cont.)

- 111) Rasband, W. & **A.R. Palmer** 1992. *MacMeasureII*: A Macintosh program for morphometric data acquisition from digitizing tablets.
- 112) **Palmer, A.R.** 1988, 1996. *MacCoil*: A Macintosh program for visualizing the effects of manipulating any of five independent geometric coiling parameters on wire-frame images of coiled mollusc shells.

Computer animations

I wrote and directed the following computer animations for teaching invertebrate zoology. The animations were programmed by Heather Kroening & Gregg Dearborn. They may be viewed at: <http://www.biology.ualberta.ca/courses.hp/zool250/Z250.html>

- 113) **Palmer, A.R.** & G. Dearborn 2002. Identify the Invertebrate Quiz (identify one among 9 images chosen at random from all major animal groups).
- 114) **Palmer, A.R.** & H. Kroening 2000. Form and Feeding of Collar Flagellates.
- 115) **Palmer, A.R.** & H. Kroening 2000. Structure and Function of Simple Sponges.
- 116) **Palmer, A.R.** & H. Kroening 2000. Water Flow and Feeding in Filibranch Bivalves.
- 117) **Palmer, A.R.** & H. Kroening 2000. Water Flow and Feeding in Eulamellibranch Bivalves.
- 118) **Palmer, A.R.** & H. Kroening 2000. Squid Locomotion.
- 119) **Palmer, A.R.** & H. Kroening 2000. Form and Locomotion of an Earthworm.
- 120) **Palmer, A.R.** & H. Kroening 2000. Form and Locomotion of a Nereid Worm.
- 121) **Palmer, A.R.** & H. Kroening 2000. Decapod Claw Form and Function.
- 122) **Palmer, A.R.** & H. Kroening 2000. Form and Feeding of Sea Urchins.
- 123) **Palmer, A.R.** & H. Kroening 2000. Sea Squirt Anatomy and Feeding.
- 124) **Palmer, A.R.** & H. Kroening 2000. Ultrafiltration, Transport & Resorption in a Protonephridium and Metanephridium.

A. R. PALMER: Publications & Theses by Graduate Students

Rev. Oct. 9, 2017

A. RICHARD PALMER: Publications & Theses by Students

The following graduate and postdoctoral student publications are contributions from my research program. They resulted from research conducted under my supervision and were partly or completely funded by my NSERC Discovery Grant. In all papers derived from thesis chapters (** below) I provided extensive guidance on design and analysis, as well as detailed editorial comments on manuscripts. However, to ensure my students receive maximal recognition for their work, I elected not to be a co-author. My students are identified in bold font.

Refereed publications (ARP student names in bold; ** also chapters in theses)

- 1) **Luque, J.**, C.E. Schweitzer, W. Santana, R.W. Portell, F.J. Vega, & A.A. Klompmaker 2017. Checklist of fossil decapod crustaceans from tropical America, Part I: Anomura and Brachyura. *Nauplius* 25: e2017025: 1-85.
- 2) **Webster, N.B.** and G.J. Vermeij. 2017. The varix: Evolution, distribution, and phylogenetic clumping of a repeated gastropod innovation. *Zoological Journal of the Linnean Society*. 180: 732-754.
- 3) **Luque, J.** 2017. On some fossil hermit and land crabs (Anomura, Brachyura) from the Quaternary of Antigua and Bermuda. *Journal of Crustacean Biology* 37(2): 151-156.
- 4) **Miyashita, T.** 2016. Fishing for jaws in early vertebrate evolution: A novel hypothesis of mandibular confinement. *Biological Reviews* 91: 611-657.
- 5) **Kaji, T.** J. Keiler, T. Bourguignon & T. Miura (2016). Functional transformation series and the evolutionary origin of novel forms: Evidence from a remarkable termite defensive organ. *Evolution & Development* 18: 78-88.
- 6) **Miyashita, T.**, & R. Diogo. 2016. Evolution of serial patterns in the vertebrate pharyngeal apparatus and paired appendages via assimilation of dissimilar units. *Frontiers in Ecology and Evolution* 4: 71. 26 pp.
- 7) Clelland, E.S. & **N.B. Webster**. 2016. Drilling into hard substrate by Naticid and Muricid gastropods: A chemo-mechanical process involved in feeding. In: *Physiology of Molluscs*. Eds. A. Saber M. Saleuddin and Spencer T. Mukai. Apple Academic Press. 77-112.
- 8) **Miyashita, T.**, & M.I. Coates. 2015. Hagfish embryology: Staging table and relevance to the evolution and development of vertebrates. In: *Hagfish Biology*. S.L. Edwards and G.G. Goss (eds.) pp. 95-127. CRC Press.
- 9) **Luque, J.**, S. Hourdez & O. Vinn. 2015. A new fossil bristle worm (Annelida: Polychaeta: Aphroditiformia) from the Late Cretaceous of Tropical America. *Journal of Paleontology* 89(2): 257-261.
- 10) **Luque, J.** 2015. The oldest higher true crab (Crustacea: Decapoda: Eubrachyura) from the Early Cretaceous of Tropical America. *Palaeontology* 58(2): 251-263.
- 11) **Luque, J.** 2015. A puzzling frog crab (Crustacea: Decapoda: Brachyura) from the early Cretaceous Santana Group of Brazil: Frog first or crab first? *Journal of Systematic Palaeontology* 13(2): 153-166.
- 12) Ziermann, J.M., **T. Miyashita** & R. Diogo. 2014. Cephalic muscles of cyclostomes (hagfishes and lampreys) and chondrichthyans (elasmobranches and holocephalans): Comparative anatomy and early evolution. *Zoological Journal of the Linnean Society* 172: 771-802.

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- 13) **Luque, J.** 2014. A new genus and species of raninoidian crab (Decapoda, Brachyura) from the Lower Cretaceous of Colombia, South America. *Scripta Geologica* 147: 27-34.
- 14) **Penney, B.K.** 2013.** How specialized are the diets of northeastern Pacific sponge-eating dorid nudibranchs? *Journal of Molluscan Studies* 79: 64-73.
- 15) **Neufeld, C.J.** & C. Rankine. 2012.** Cuticle and muscle variation underlying phenotypic plasticity in barnacle feeding leg and penis form. *Invertebrate Biology* 131(2): 96–109.
- 16) **Neufeld, C.J.** 2012.** Barnacle appendage plasticity: Asymmetrical response time-lags, developmental mechanics and seasonal variation. *Journal of Experimental Marine Biology and Ecology* 42: 20-27.
- 17) **Barzandeh, M.** & C.S. Davis. 2012.** Identification and characterization of 16 single nucleotide polymorphisms (SNPs) in the northeast Pacific intertidal gooseneck barnacle, *Pollicipes polymerus*. *Conservation Genetics Resources* 4: 217-219.
- 18) **Neufeld, C.J.** 2011.** Modular phenotypic plasticity: Divergent responses of barnacle penis and feeding leg form to variation in density and wave-exposure. *Journal of Experimental Zoology (Molecular and Developmental Evolution)* 316B(4): 254–262.
- 19) **Edgell, T.C.** 2010. Past predation risk induces an intertidal whelk (*Nucella lamellosa*) to respond to more dilute concentrations of its predator's scent. *Marine Biology* 157: 215-219.
- 20) **Edgell, T.C. & T. Miyashita.** 2009. Shell shape and tissue withdrawal depth in 14 species of temperate intertidal snail. *Journal of Molluscan Studies* 75: 235-240.
- 21) **Boeckner, M.J., J. Sharma & H.C. Proctor.** 2009.** Revisiting the meiofauna paradox: Dispersal and colonization of nematodes and other meiofaunal organisms in low- and high-energy environments. *Hydrobiologia* 624:91–106.
- 22) **Anker, A. & I.N. Marin.** 2009. The alpheid shrimp genus *Leptalpheus* Williams, 1965 in the tropical western Pacific, with description of two new species (Crustacea: Decapoda: Caridea). *Raffles Bulletin of Zoology* 57(1): 91-107.
- 23) **Edgell, T.C. & C.J. Neufeld.** 2008.** Experimental evidence for latent developmental plasticity: Intertidal whelks respond to a native but not an introduced predator. *Biology Letters* 4: 385-387.
- 24) **Penney, B.K.** 2008.** Phylogenetic comparison of spicule networks in cryptobranchiate dorid nudibranchs (Gastropoda, Euthyneura, Nudibranchia, Doridina). *Acta Zoologica* 89: 311–329.
- 25) **Anker, A.** 2007. New species and records of alpheid shrimps, genera *Salmoneus* Holthuis and *Parabetaeus* Coutière, from the tropical western Atlantic (Decapoda, Caridea). *Zootaxa* 1653: 21-39.
- 26) **Anker, A. & S.T. Ahyong.** 2007. Description of two species in the alpheid shrimp genus *Athanas* Leach, 1814, with remarks on *A. amazone* Holthuis, 1951 (Decapoda, Caridea). *Zootaxa* 1563: 17-30.
- 27) **Anker, A. & M.S. Jeng.** 2007. Establishment of a new genus for *Arete borradalei* Coutière, 1903 and *Athanas verrucosus* Banner and Banner, 1960, with redefinition of *Arete* Stimpson, 1860 and *Athanas* Leach, 1814 (Crustacea: Decapoda: Alpheidae). *Zoological Studies* 46: 454-472.

A. R. PALMER: Publications & Theses by Graduate Students

- 28) Felder, D.L. & **Anker, A.** 2007. Description of *Harperalpheus pequegnatae*, new genus, new species, from the Gulf of Mexico and Atlantic coast of the southeastern USA (Crustacea, Decapoda, Alpheidae). *Systematics and Biodiversity* 5(4): 455-463.
- 29) Lehrke, J., H.A. ten Hove, **T.A. Macdonald**, T. Bartolomaeus & C. Bleidorn. 2007. Phylogenetic relationships of the Serpulidae (Annelida, Polychaeta) based on 18s rDNA sequence data and implications for opercular evolution. *Organisms, Diversity and Evolution* 7: 195-206.
- 30) **Marchinko, K.B.** 2007.** Feeding behavior reveals the adaptive nature of plasticity in barnacle feeding limbs. *Biological Bulletin* 213: 12-15.
- 31) **Bergstrom, C.A.** 2007. Morphological evidence of correlational selection and ecological segregation between dextral and sinistral forms in a polymorphic flatfish, *Platichthys stellatus*. *Journal of Evolutionary Biology* 20: 1104-1114.
- 32) **Anker, A.** & S.T. Ahyong. 2007. A rediagnosis of *Athanopsis australis* Banner & Banner, 1982, a rare alpheid shrimp from southern Australia, with a phylogeny of *Athanopsis* Coutière, 1897 and remarks on antitropical distributions in the Alpheidae (Decapoda, Caridea). *Crustaceana* 80(6): 685-697.
- 33) **Anker, A.** & I.N. Marin. 2007. *Athanas anatidactylus*, n. sp., a new alpheid shrimp associated with crinoids in the tropical western Pacific (Crustacea: Decapoda). *Zoological Studies* 46(2): 162-167.
- 34) **Anker, A.** 2007. Stygobitic shrimps of the family Alpheidae (Crustacea, Decapoda, Caridea) - a review. In Juberthie, C. (ed.), *Encyclopaedia Biospeologica*.
- 35) **Anker, A.** & P.C. Dworschak. 2007. *Jengalpheops rufus*, gen. nov., sp. nov., a new commensal alpheid shrimp from the Philippines (Crustacea: Decapoda). *Zoological Studies* 46(3): 290-302.
- 36) **Anker, A.**, J.A. Vera Caripe & C. Lira. 2006. Description of a new species of commensal alpheid shrimp (Crustacea: Decapoda) from the southern Caribbean Sea. *Zoosystema*, 28(3): 683-702.
- 37) **Anker, A.**, D. Poddoubtchenko & I.N. Marin. 2006. On the presence of the alpheid shrimp genus *Bermudacaris* Anker and Iliffe, 2000 (Crustacea: Decapoda: Caridea) in the Pacific Ocean, with description of a new species from Vietnam. *Journal of Natural History* 40(27-28): 1675-1686.
- 38) Kupriyanova, E.K., **T.A. Macdonald** & G.W. Rouse. 2006. Phylogenetic relationships within Serpulidae (Sabellida, Annelida) inferred from molecular and morphological data. *Zoologica Scripta* 35: 421-439.
- 39) **Gillespie, J.M.** & B.A. Bain. 2006.** Postembryonic development of *Tanystylum bealensis* (Pycnogonida, Ammotheidae) from Barkley Sound, British Columbia, Canada. *Journal of Morphology* 267: 308-317.
- 40) **Penney, B.K.** 2006.** Morphology and biological roles of spicule networks in *Cadlina luteomarginata* (Nudibranchia, Doridina). *Invertebrate Biology* 125: 222-232.
- 41) **Anker, A.** & I.N. Marin. 2006. New records and species of Alpheidae (Crustacea, Decapoda) from Vietnam. Part I. Genus *Salmoneus* Holthuis, 1955. *Raffles Bulletin of Zoology* 54: 295-319.

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- 42) **Anker, A.**, D. Poddoubtchenko & M.-S. Jeng. 2006. *Acanthanas pusillus*, new genus, new species, a miniature alpheid shrimp with spiny eyes from the Philippines (Crustacea: Decapoda). *Raffles Bulletin of Zoology* 54: 341-348.
- 43) **Anker, A.** & M.-S. Jeng. 2006. *Richalpheus palmeri*, n. gen., n. sp., an infaunal alpheid shrimp from the Philippines, with redescription of *Amphibetaeus jousseaumei* (Coutière, 1896) (Decapoda: Caridea). *Journal of Crustacean Biology* 26: 379-391.
- 44) Nomura, K. & **A. Anker**. 2005. The taxonomic identity of *Alpheus gracilipes* Stimpson, 1860 (Decapoda: Caridea: Alpheidae), with description of five new cryptic species, from Japan. *Crustacean Research* 34: 104-139.
- 45) **Anker, A.** & D. L. Felder. 2005. Description of *Coutieralpheus setirostris*, new genus, new species, an infaunal alpheid shrimp (Crustacea: Decapoda) from Florida, U.S.A. *Crustacean Research* 34: 40-52.
- 46) **Anker, A.**, C. d'Udekem d'Acoz & D. Poddoubtchenko. 2005. Description of a new species of *Alpheopsis* from the Azores, with remarks on *A. africana* Holthuis, 1952 and other species of the *A. trispinosa* (Stimpson, 1860) group (Crustacea, Decapoda, Caridea, Alpheidae). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Biologie* 75: 97-110, figs. 1-7.
- 47) **Cameron, C.B.** 2005.** A phylogeny of the hemichordates based on morphological characters. *Canadian Journal of Zoology* 83: 196-215.
- 48) **Penney, B.K.** 2004.** Whole animal antipredator deterrence and post-attack survival for *Cadlina luteomarginata* (Nudibranchia: Doridacea). *Journal of Molluscan Studies* 70: 399-402.
- 49) **Anker, A.** & P.C. Dworschak. 2004. A new species of *Alpheus* from the tropical eastern Atlantic (Crustacea : Decapoda : Alpheidae). *Annales des naturhistorischen Museums Wien* 105B: 47-58.
- 50) **Anker, A.** & T. Komai. 2004. Descriptions of two new species of alpheid shrimps from Japan and Australia, with notes on taxonomy of *Automate* De Man, *Coronalpheus* Wicksten and *Bermudacaris* Anker & Iliffe (Crustacea: Decapoda : Caridea). *Journal of Natural History, London* 38: 1895-1914.
- 51) **Anker, A.** 2003. Alpheid shrimps from the mangroves and mudflats of Singapore. Part I. Genera *Salmoneus*, *Athanas* and *Potamalpheops*, with the description of two new species (Crustacea: Decapoda: Caridea). *Raffles Bulletin of Zoology* 51: 283-314.
- 52) **Anker, A.** 2003. New records of *Salmoneus* Holthuis, 1955 (Crustacea: Decapoda: Alpheidae) from northern Australia, with description of one new species and remarks on *S. serratidigitus* Coutière, (1896). *The Beagle* 19: 101-109.
- 53) **Macdonald, T.A.** 2003.** Phylogenetic relations among spirorbid subgenera and the evolution of opercular brooding. *Hydrobiologia* 496: 125-143.
- 54) **Marchinko, K.B.** 2003.** Dramatic phenotypic plasticity in barnacle legs (*Balanus glandula*): Magnitude, age dependence, and speed of response. *Evolution* 57: 1281-1290.
- 55) **Penney, B.K.** 2002.** Lowered nutritional quality supplements nudibranch chemical defense. *Oecologia* 132: 411-418.
- 56) Winchell, C.J., J. Sullivan, B.J. Swalla, **C.B. Cameron** & J. Mallatt (2002) Phylogeny of the deuterostome animals: Evaluating competing theories with new LSU and SSU ribosomal DNA data. *Molecular Biology and Evolution* 19(5): 762-776.

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- 57) **Cameron, C.B.** 2002.** Particle retention and flow in the pharynx of the enteropneust worm *Harrimania planktophilus*: The filter-feeding pharynx may have evolved before the chordates. *Biological Bulletin* 202: 192-200.
- 58) **Cameron, C.B.** 2002.** The anatomy, life habits and later development of a new species of enteropneust, *Harrimania planktophilus* (Hemichordata: Harrimaniidae) from Barkley Sound. *Biological Bulletin* 202: 182-191.
- 59) **Taylor, G.M.** 2001.** The evolution of armament strength: Evidence for a constraint on the biting performance of claws of durophagous decapods. *Evolution* 55: 550560.
- 60) Ong, S. & **B.K. Penney.** 2001.** Non-polar components of prey sponge extract attract *Rostanga pulchra* (Nudibranchia: Doridacea). *Veliger* 44 (1): 99-100.
- 61) **Zaklan, S.** 2000. A case of reversed asymmetry in *Lithodes maja* (Linnaeus, 1758) (Decapoda, Anomura, Lithodidae). *Crustaceana* 73: 1019-1022.
- 62) **Klingenberg, C.P. & S. Zaklan.** 2000. Morphological integration between developmental compartments in the *Drosophila* wing. *Evolution* 54: 1273-1285.
- 63) **Cameron, C.B., J.R. Garey & B.J. Swalla.** 2000. Evolution of the chordate body plan: New insights from phylogenetic analyses of deuterostome phyla. *Proceedings of the National Academy of Sciences (USA)* 97: 4469-4474.
- 64) Swalla, B. J., **C.B. Cameron**, L.S. Corley & J.R. Garey. 2000. Urochordates are monophyletic within the deuterostomes. *Systematic Biology* 49: 52-64.
- 65) **Taylor, G.M.** 2000.** Maximum force production: Why are crabs so strong? *Proceedings of the Royal Society of London. Series B* 267: 1475-1480.
- 66) **Cameron, C.B., G.O. Mackie, J.F.F. Powell, D.W. Lescheid & N.M. Sherwood.** 1999. Gonadotropin-releasing hormone in Mulberry cells of *Saccoglossus* and *Ptychodera* (Hemichordata: Enteropneusta). *General and Comparative Endocrinology* 114: 2-10.
- 67) **Rawlings, T.A.** 1999. Adaptations to physical stress in the intertidal zone: The egg capsules of neogastropod molluscs. *American Zoologist* 39: 230-243.
- 68) Ruppert, E.E., **C.B. Cameron** & J.E. Frick. 1999. Endostyle-like features of the dorsal epibranchial ridge of an enteropneust and the hypothesis of dorsal-ventral axis inversion in chordates. *Invertebrate Biology* 118: 202-212.
- 69) **Klingenberg, C.P., G.S. McIntyre & S. Zaklan.** 1998. Left-right asymmetry of fly wings and the evolution of body axes. *Proceedings of the Royal Society of London: Biological Sciences* 265: 1255-1259.
- 70) **Klingenberg, C.P. & G.S. McIntyre.** 1998. Geometric morphometrics of developmental instability: Analyzing patterns of fluctuating asymmetry with Procrustes methods. *Evolution* 52: 1363-1375.
- 71) **Rawlings, T.A.** 1996.** Shields against ultraviolet radiation? An additional protective role for the egg capsules of benthic marine gastropods. *Marine Ecology Progress Series* 136: 81-95.
- 72) **Cameron, C.B. & G.M. Mackie.** 1996. Conduction pathways in the nervous system of *Saccoglossus* (Enteropneusta). *Canadian Journal of Zoology* 74: 15-19.
- 73) **Rawlings, T.A.** 1994.** Encapsulation of eggs by marine gastropods: Effect of variation in capsule form on the vulnerability of embryos to predation. *Evolution* 48: 1301-1313.

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- 74) **Rawlings, T.A.** 1994.** Effect of elevated predation risk on the metabolic rate and spawning intensity of a rocky shore marine gastropod. *Journal of Experimental Marine Biology and Ecology* 181: 67-79.
- 75) **Rawlings, T.A.** 1994.** Direct observation of encapsulated development in muricid gastropods. *Veliger* 38: 54-60.
- 76) Brook, H.J., **T.A. Rawlings** & R.W. Davies. 1994. Protogynous sex change in the intertidal isopod, *Gnorimosphaeroma oregonense* (Crustacea:Isopoda). *Biological Bulletin* 187:99-111.
- 77) **Padilla, D.K.** 1989.** Algal structural defenses: Form and calcification in resistance to tropical limpets. *Ecology* 70: 835-842.
- 78) **Lowell, R.B.** 1987.** Safety factors of tropical versus temperate limpet shells: multiple selection pressures on a single structure. *Evolution* 41: 638-650.
- 79) **Lowell, R.B.** 1986.** Crab predation on limpets: predator behavior and defensive features of the shell morphology of the prey. *Biological Bulletin* 171: 577-596.
- 80) **Boulding, E.G.** & M. LaBarbera. 1986.** Fatigue damage: repeated loading enables crabs to open larger bivalves. *Biological Bulletin* 171: 538-547.
- 81) **Padilla, D.K.** 1985.** Structural resistance of algae to herbivores: a biomechanical approach. *Marine Biology* 90: 103-109.
- 82) **Lowell, R.B.** 1984.** Selection for increased safety factors of biological structures as environmental unpredictability increases. *Science* 228:1009-1011.
- 83) **Boulding, E.G.** & T. K. Hay. 1984.** Crab response to prey density can result in density-dependent mortality of clams. *Canadian Journal of Fisheries and Aquatic Sciences* 41:521-525.
- 84) **Boulding, E.G.** 1984.** Crab-resistant features of shells of burrowing bivalves: decreasing vulnerability by increasing handling time. *Journal of Experimental Marine Biology and Ecology* 76: 201-223.

Manuscripts under review

- 85) **Macdonald, T.A.** & G.W. Rouse.** Molecular and morphological phylogeny of the Spirorbinae (Annelida, Polychaeta) and the evolution of brooding modes. *Molecular Phylogenetics and Evolution* (Submitted Oct. 2005; 24 MS pages, 2 tables, 5 figures).

Other publications

- 86) **Penney, B.K.** 1998. The context of molecular data. *Science* 282:1992. (letter to the editor)

Theses

- 87) **Anthony, S.E.** 2014. *Selective Cnida Sequestration in the Aeolid Nudibranch Hermissenda crassicornis: Ecology and Mechanism of Defense Acquisition*. M.Sc. thesis. 80 pp.
- 88) **Barazandeh, M.** 2014. *New Insights About Barnacle Reproduction: Spermcast Mating, Aerial Copulation and Population Genetic Consequences*. Ph.D. thesis. 148 pp.

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- 89) **Montgomery, E.** 2013. *The Size Dependence of Sea Star Locomotion: Does Bigger Mean Faster?* M.Sc. thesis. 76 pp.
- 90) **Miyashita, T.** 2012. *Comparative Analysis of the Anatomy of the Myxinoidea and the Ancestry of Early Vertebrate Lineages.* M.Sc. thesis 435 pp.
- 91) **Hayne, K.J.R.** 2011. *Plastic Phenotypic Responses of the Intertidal Sea Star *Pisaster ochraceus* to Spatial and Temporal Variation in Wave Exposure.* M.Sc. thesis. 106 pp.
- 92) **Neufeld, C.J.** 2011. *Morphological Plasticity of Barnacle Feeding Legs and Penises.* Ph.D. thesis. 136 pp.
- 93) **Boeckner, M.B.** 2009. *Factors Affecting Meiofaunal Colonization and Assemblage Structure in Marine Soft Sediments.* Ph.D. thesis. 194 pp.
- 94) **Eaves, A.E.** 2008. *Phenotypic Plasticity in Sea Urchin Larvae: Environmental Effects Reveal True Developmental Potential.* Ph.D. thesis. 135 pp.
- 95) **MacDonald, T.A.** 2006. *Systematics of the Spirorbinae (Annelida, Polychaeta, Serpulidae): Evolution of Miniaturization, Brooding Modes and Coiling Asymmetry.* Ph.D. thesis. 261 pp.
- 96) **Gillespie, J.M.** 2003. *Systematics and Development of Sea Spiders (Arthropoda: Pycnogonida) from the Northeastern Pacific.* M.Sc. thesis. 134 pp.
- 97) **Penney, B.K.** 2002. *Defense and Prey Use by Northeastern Pacific Cryptobranchiate *Dorid* Nudibranchs (Mollusca: Gastropoda).* Ph.D. thesis. 205 pp.
- 98) **Marchinko, K.B.** 2002. *Wave-Dependent Phenotypic Plasticity in Feeding Legs of Intertidal Barnacles.* M.Sc. thesis 117 pp.
- 99) **Cameron, C.B.** 2000. *The Phylogeny of the Hemichordata and Ecology of Two New Enteropneust Species from Barkley Sound.* Ph.D. thesis. 178 pp.
- 100) **Taylor, G.M.** 1999. *The Biomechanics and Evolution of Cancer Crab Claws.* Ph.D. thesis. 210 pp.
- 101) **Rawlings, T.A.** 1995. *Encapsulation of Eggs by the Rocky Shore Marine Gastropod *Nucella emarginata*: Costs and Benefits of Variation in Capsule Form.* Ph.D. Thesis. 325 pp.
- 102) **Gratto, C.J.** 1989. *Environmental Effects on Macro- and Microstructural Variation in Shell Features of Natural Populations of *Thais lamellosa* (Gastropoda: Thaididae).* M.Sc. thesis. 226 pp.
- 103) **Padilla, D.K.** 1987. *Relationships among Plant Calcification, Plant Form, and Herbivore Mode of Feeding in Plant-Herbivore Interactions.* Ph.D. thesis. 150 pp.
- 104) **Lowell, R.B.** 1986. *Safety Factors and the Functional Properties of Intertidal Limpet Shells.* Ph.D. thesis. 150 pp.
- 105) **Boulding, E.G.** 1983. *The Ecology and Biomechanics of Crab Predation on Infaunal Bivalves.* M.Sc. thesis. 104 pp.