

Jackson Wing Four Chu, Ph.D.

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POSITIONS

2016-pres. Postdoctoral Fellow, Fisheries and Oceans Canada, Ecosystem Sciences Division
Species distribution modeling of Vulnerable Marine Ecosystems in the Northeast Pacific Ocean

EDUCATION

2016 PhD, University of Victoria, Department of Biology
Thesis: Influence of seasonally variable hypoxia on epibenthic communities in a coastal ecosystem, British Columbia, Canada
Supervisor – Verena Tunnicliffe

2010 MSc, University of Alberta, Department of Biological Sciences
Thesis: Biological patterns and processes of glass sponge reefs
Supervisor – Sally Leys

2006 BSc, Simon Fraser University, Department of Biological Sciences

ADDITIONAL TRAINING AND RESEARCH EXPERIENCE

2016 NSF Antarctic Biology Training Course for Early Career Scientists
Palmer Station, Western Antarctic Peninsula

2009 Biomechanics, Ecological Physiology, and Genetics of Intertidal Communities
Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), Hopkins Marine Station

2008-2017 At-sea cruise experience: 19 cruises (119 at-sea days)

- 7 ships: *CCGS Vector, CCGS JP Tully, CCGS Neocaligus, RV Thompson, RV Falkor, RV Strickland, ASRV LM Gould, EV Nautilus*
- My research: 100+ dives with 5 deep submergence platforms: *ROV ROPOS, ROV Phantom HD2, ROV Oceanic Explorer, DFO 'BOOTS' tow-camera, ROV Hercules & ARGUS*
- Responsibilities included watch supervisor for ROV operations, tow-camera pilot, dive planning, specimen collection, water column sampling, benthic trawling, teaching ROV methods to students and other researchers

PUBLICATIONS: ^apeer-reviewed journal, ^bpublished dataset, ^ceditorial review

^aArcher SK, Halliday WD, Riera A, Mouy X, **Chu JWF**, Dunham A, Juanes F. 2018. The first description of a glass sponge reef soundscape reveals fish calls and elevated sound pressure levels. *Mar. Ecol. Prog. Ser.* doi: 10.3354/meps12572

^{ab}**Chu JWF** Curkan C, Tunnicliffe V. 2018. Drivers of temporal beta diversity of a benthic community in a seasonally hypoxic fjord. *Royal Society Open Science* doi: 10.1098/rsos.172284. (data doi: <https://doi.org/10.5061/dryad.4p9v048>)

^{ab}Kahn AS, **Chu JWF**, Leys SP. 2018. Trophic ecology of glass sponge reefs in the Strait of Georgia. *Scientific Reports*. 8(756). (data doi: <https://doi.org/10.7939/R3NS0MB2K>)

- ^{ab}**Chu JWF**, Gale KSP. 2017. Ecophysiological limits to aerobic metabolism in hypoxia determine epibenthic distributions and energy sequestration in the northeast Pacific. *Limnol. Oceanogr.* 62: 59-74. (dryad doi:10.5061/dryad.d28j8.2)
- ^{ab}**Chu JWF**, Tunnicliffe V. 2015. Oxygen limitations on marine animal distributions and the collapse of epibenthic community structure during shoaling hypoxia. *Global Change Biol.* 21: 2989-3004. (dryad doi:10.5061/dryad.1p55v)
- ^aKahn AS, Yahel G, **Chu JWF**, Tunnicliffe V, Leys SP. 2015. Benthic grazing and carbon sequestration by deep-water glass sponge reefs. *Limnol. Oceanogr.* 60:78-88.
- ^a**Chu JWF**, Reiswig HM. 2014. Mechanisms of propagule release in the carnivorous sponge *Asbestopluma occidentalis*. *Invertebr. Biol.* 133: 109-120.
- ^{ab}**Chu JWF**, Leys SP. 2012. The dorid nudibranchs *Peltodoris lentiginosa* and *Archidoris odhneri* as predators of glass sponges. *Invertebr. Biol.* 131: 75-81. (dryad doi:10.5061/dryad.3tc7s)
- ^{ab}**Chu JWF**, Maldonado M, Yahel G, Leys SP. 2011. Glass sponge reefs as a silicon sink. *Mar. Ecol. Prog. Ser.* 441: 1-14 (dryad doi: 10.5061/dryad.5j5r0)
- ^{ab}**Chu JWF**, Leys SP. 2010. High resolution mapping of community structure in three glass sponge reefs (Porifera, Hexactinellida). *Mar. Ecol. Prog. Ser.* 417: 97-113. (dryad doi:10.5061/dryad.j5925)
- ^cLeys SP, **Chu JWF**. 2012. Glass sponge reefs. *Architectural Glass Concepts* 5:4-13.

DFO REPORTS

- Chu JWF**, Gasbarro R, Tunnicliffe V. 2018. The Saanich Inlet ROV Transect 2017: Delayed recovery of the epibenthic community after a sustained period of hypoxia. In: *State of the physical, biological and selected fishery resources of Pacific Canadian marine ecosystems in 2017* (eds. PC Chandler, SA King, RI Perry). Canadian Technical Report of Fisheries and Aquatic Sciences.
- ^bGasbarro R, **Chu JWF**, Tunnicliffe V. 2017. Epibenthic community structure along a dissolved oxygen gradient. In: *State of the physical, biological and selected fishery resources of Pacific Canadian marine ecosystems in 2016* (eds. PC Chandler, SA King, RI Perry). Canadian Technical Report of Fisheries and Aquatic Sciences 3225. 243pp.

SELECT PRESENTATIONS

- 2018: State of the Pacific Ocean Meeting. Sidney, BC. *Contributed talk.*
- 2017: State of the Pacific Ocean Meeting. Sidney, BC. *Contributing co-author on poster.*
- 2016: Institute of Ocean Sciences Seminar Series. Sidney, BC. *Invited seminar.*
- 2016: PICES Annual Meeting. San Diego, CA, USA. *Contributing co-author on poster.*
- 2016: Saanich Inlet Symposium. Victoria, BC. *Contributed talk & poster.*
- 2015: 14th Deep-sea Biology Symposium. Aveiro, Portugal. *Contributed talk & 2 posters.*
- 2014: Ocean Sciences Meeting. Honolulu, Hawaii, USA. *Contributed poster.*
- 2014: 18th Western Groundfish Conference. Victoria, BC. *Contributed talk.*
- 2013: Canadian Parks and Wilderness Committee sponge reef campaign. *Invited talk.*
- 2012: CHONe 4th Annual Conference. Ottawa, ON. *Contributed poster.*
- 2012: Time-series Analysis in Marine Science. Brest, France. *Contributed poster.*
- 2012: Saanich Inlet Symposium. Sidney, BC. *Contributed poster.*
- 2012: Ocean Sciences Meeting. Salt Lake City, Utah, USA. *Contributed poster.*
- 2011-2016: UVic Biology Graduate Student Symposium. *Contributed annual talk.*
- 2011: Pacific Ecology and Evolution Conference. Bamfield, BC. *Contributed poster.*

- 2010: 8th World Sponge Conference. Girona, Spain. *Contributed talk & 2 posters.*
 2010: Canadian Society of Zoologists Meeting. Vancouver, BC. *Contributed talk.*
 2010: Pacific Ecology and Evolution Conference. Bamfield, BC. *Contributed talk.*
 2009: Pacific Ecology and Evolution Conference. Bamfield, BC. *Contributed poster.*
 2008: Canadian Society for Ecology & Evolution. Vancouver, BC. *Contributed poster.*

SELECT AWARDS & SCHOLARSHIPS

2018: NSERC Postdoctoral Fellowship (2-yr) – NSERC	\$90,000
2016: NSERC Visiting Fellowship in Can. Gov. Labs (3-yr) – NSERC	\$159,231
2015: Bob Wright Graduate Scholarship – University of Victoria (UVic)	\$12,500
2015: Marine Technology Society Student Scholarship	\$2,000
2014: Dr. Arne H. Land Graduate Fellowship in Marine Science – UVic	\$18,000
2014: Commander Peters Chance MASC Graduate Fellowship – UVic	\$7,600
2011, 2013: W. Gordon Fields Memorial Fellowship – UVic	\$1,900
2011-2013: President's Research Scholarship – UVic	\$12,000
2012: Program for Excellence in Science – AAAS / Science	NA
2011: NSERC Postgraduate Scholarship-D (3-yr) – NSERC	\$63,000
2010: ESRI Canada Scholarship Award & ArcGIS Software Suite – ESRI	\$2,000
2009: Bamfield Marine Science Centre Graduate Scholarship – BMSC	\$1,500
2009: Province of Alberta Graduate Student Scholarship – Province of Alberta	\$3,000
2008: Queen Elizabeth II Graduate Scholarship – University of Alberta	\$10,000
2008: Teaching commendation – Biological Sciences, University of Alberta	NA

GRANTS

2015: Student Travel Award – Ocean Networks Canada	\$1,000
2015: Graduate Student Travel Award – University of Victoria	\$600
2014: Student Travel Grant – Canadian Healthy Oceans Network	\$2,200
2009: Course Grant – Partnership for Interdisciplinary Studies of Coastal Oceans	\$3,200

TEACHING

- 2015-2016: University of Victoria, Department of Biology
- BIOL470: Frontiers in Marine Biological Science – *guest lecturer*
 - BIOL311: Biological Oceanography – *lab instructor*
- 2008-2009: Bamfield Marine Sciences Centre, Bamfield, BC
- MASC403: Directed Studies – *teaching assistant*
 - MASC410: Marine Invertebrate Zoology – *teaching assistant*
- 2007-2010: University of Alberta, Biological Sciences
- BIOL107: Intro to Cell Biology – *teaching assistant*

STUDENTS MENTORED

- 2015: Jessica Qualley (BSc, NSERC USRA Award) – *mentor*
 2014: Nicole Soderberg (BSc, Honors student) – *mentor*
 2013: Curtis Curkan (BSc, NSERC USRA Award) – *supervisor*
 2009: Jennifer Matal Sol (BSc, NSERC USRA Award, Honors) – *co-supervisor*
 2008: Danielle Ludeman (BSc, Undergraduate volunteer) – *co-supervisor*

PUBLIC OUTREACH

- 2017: Fisheries and Oceans Canada – Pacific Offshore Seamounts social media [campaign](#)

- 2017: Ocean Networks Canada – [planned live dive](#) (blogpost, science)
- 2016: Ocean Networks Canada – [blogpost](#)
- 2016: Ocean Networks Canada – [blogpost](#)
- 2016: Ocean Networks Canada – *monthly newsletter contribution*
- 2015: University of Victoria Donor Impact Report – *featured interview, media content*
- 2015: Ocean Networks Canada – Wiring the Abyss 2015 – *online videos*
- 2015: Ocean Networks Canada – *interview & [YouTube video](#)*
- 2015: Ocean Networks Canada – *outreach interview, online media content, blog, visuals*
- 2015: EarthTouch News Network – [online blog content & multimedia](#)
- 2015: CBC Quirks and Quarks – *provided web content*
- 2014: Oceans Network Canada – Wiring the Abyss 2014 – [blogpost & multimedia](#)
- 2014: Oceans Network Canada Lecture Series, Brentwood Bay, BC, Sep 12 – *public lecture*
- 2013: Schmidt Ocean Institute outreach - <https://vimeo.com/74259638> – *content & science*
- 2013: CPAWS sponge reef outreach campaign – *consultant, media contributions*
- 2012: Canadian Healthy Oceans Network outreach – *podcast*
- 2012: Daily Planet Nov 21 – *contributed video segment*
- 2012: New Scientist Oct 22 – *contributed [viral video](#) to article*
- 2012: Vancouver Sun newspaper Oct 05 – *contributions to imagery and online article content*
- 2012: Ocean Networks Canada – [viral video](#)
- 2011-2015: Vancouver Island Regional Science Fair – *volunteer judge*
- 2011: “Secrets of the Emerald Sea”, Parks Canada film – *video consultant*
- 2011: Highland Secondary School, Comox, BC – *invited high school lecture via teleconference*
- 2009: Bamfield Marine Station Waves & Current Newsletter – *writer & photographer*
- 2008: Bamfield Marine Station Public Education Program Youth Forum – *invited lecturer*

OTHER PROFESSIONAL ACTIVITIES

- Invited peer reviewer for:
 - Journals:
Estuaries & Coasts, Deep-sea Research I, Marine Ecology Progress Series, Marine Environmental Research, Nature Climate Change, PLoS ONE, Aquatic Conservation
 - Funding Agencies:
NOAA CSOR
- Consultations on deep-water science with scientists and educators across Canada (Ocean Networks Canada, University of Victoria, University of Alberta, Memorial University), government (Fisheries and Oceans Canada), and non-profit organizations (CPAWS)