IN THE HIGH COURT OF SOUTH AFRICA
(WESTERN CAPE DIVISION, CAPE TOWN)

CASE NO:

In the matter between:

WWF SOUTH AFRICA	**Applicant**
and	
MINISTER OF AGRICULTURE, FORESTRY AND FISHERIES	**First Respondent**
DEPUTY DIRECTOR GENERAL: FISHERIES MANAGEMENT BRANCH OF THE DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES	**Second Respondent**

AFFIDAVIT

I, the undersigned,

ANDRE ERIC PUNT

do hereby testify as follows:

1. I am a Professor in and Director of the School of Aquatic and Fishery Sciences at the University Washington, Seattle, United States of America. I have been involved in stock assessment and fisheries

management for over 30 years and have been recognized for my contributions in this area with awards from the CSIRO Division of Marine and Atmospheric Research in Australia, the University of Washington, the Australian Society for Fish Biology, and the American Fisheries Society. My research relates broadly to the development and application of fisheries stock assessment techniques, bioeconomic modelling, and the evaluation of the performance of stock assessment methods and harvest control rules using the Management Strategy Evaluation approach. A copy of my curriculum vitae is attached marked "AP 1".

2. The facts stated in this affidavit are within my personal knowledge, unless the contrary is stated or indicated by the context. To the best of my knowledge and belief they are true and correct.

3. I have been a regular member of the international panel of fisheries assessment scientists which over more than the last decade has annually critically reviewed aspects of South African renewable marine assessments and projections. Through that experience I am familiar with the assessments and projections that have underpinned the scientific advice (especially for catch limits) provided by the West Coast Rock Lobster Scientific Working Group (WCRL SWG) in 2016 and 2017.

4. I was a member of the 2017 review panel that made some recommendations regarding possible improvements to those assessments. Nevertheless, I would not consider that implementing those improvements would result in any major changes to the current

conclusions regarding trends in biomass and biomass relative to the pre-exploitation level reached by the WCRL SWG on the basis of their assessment analyses.

5. It is of particular concern that over the most recent five years of the assessment, the abundance of WCRL fell from about 2.5% of the pre-exploitation level in 2010, to 1. 9% in 2015, i.e. declined by some 20% of the 2010 level. This is serious, and indicates that urgent remedial action is needed. At a minimum, measures should be implemented to prevent any further decline and to restore the WCRL resource to at least its 2010 level in the short to medium term, as would be standard practice worldwide to start to address this extreme level of population reduction.

6. I have extensive experience in the assessment and management of renewable marine resources, including lobster resources, in the USA and Australia, as well as involvement in fisheries in other countries and in fisheries managed by Regional Fishery Management Organisations.

7. In the United States, legislation (the Magnuson-Stevens Fisheries Conservation and Management Act and the Sustainable Fisheries Act, or "The Sustainable Fisheries Act") requires that marine resources under federal management are managed on the basis that that they will produce Optimum Yield, with a target biomass corresponding to that associated with Maximum Sustainable Yield ("MSY"). For fisheries with which I am familiar, this biomass is taken to be approximately 40% of the pre-exploitation level. The Sustainable Fisheries Act requires that a rebuilding plan must be implemented for any resource below the

Minimum Stock Size Threshold, which cannot be less than half of the biomass associated with MSY, i.e. 20% of its pre-exploitable biomass for many resources. A rebuilding plan could, for example, require the closure of targeted fishing or setting a total allowable catch limit ("TAC") low enough to be able to reach a target recovery level within a certain period. Were that approach to be applied to the WCRL resource n South Africa, it is likely that the fishery would be closed for a period, even if poaching was demonstrably substantially reduced, given that this is essentially a single-species targeted fishery.

8. In Australia, the position is similar. Australian Commonwealth-managed fisheries are legislatively required to have TACs based on Recommended Biological Catches ("RBCs"). The RBC for data-rich stocks, of which WCRL would be one if it were an Australian resource, is zero for resources which quantitative assessments indicate to be depleted below 20% of their pre-exploitation level, with only by-catch in fisheries directed at other species permitted.

9. The Marine Stewardship Council ("MSC") is the "eco-labelling" organisation with the widest international acceptance. The MSC certifies fisheries that are well and sustainably managed. Management decisions for resources that are below 2% of their pre-exploitation level and have TACs that are additionally projected to decrease that abundance further, or indeed that do not aim for relatively rapid increase in the abundance of those resources, would certainly preclude the MSC from certifying this

fishery as well and sustainably managed under its internationally widely applied criteria.

10. The accepted international principle for the responsible management of a marine resource is that the TAC (or overall catch limits) should be set at a level that will not result in the decrease of the abundance of a resource if the resource is below the target biomass level, which is generally specified on bases such as I have indicated above to apply in the USA and Australia. Given its status, the sustainability of a marine resource such as WCRL requires a TAC for which projections do not indicate any decline.

11. From my review of the 2016 and 2017 scientific analyses of the WCRL SWG, I consider that a decision not to decrease the current WCRL TAC is not consistent with sustainable utilisation of this resource.

12. I declare under penalty of perjury that the foregoing is true and correct.

Executed on 9 June 2018

SHERRI L. VANSICKLE NOTARY PUBLIC STATE OF WASHINGTON COMMISSION EXPIRES 10-14-18

Sworn to before me this 9 June 2018

ANDRE ERIC PUNT

NOTARY PUBLIC

Curriculum Vitae: André Eric Punt
DECEMBER 2017

EDUCATION AND EMPLOYMENT

1982	Matriculated Bergvliet High School ('A' aggregate).
1983 - 1985	B.Sc. UCT (Distinctions in Applied Mathematics, Computer Science, and Mathematics, and Degree with Distinction).
1986	B.Sc. (Hons) UCT (Computer Science - 1st class).
1987 - 1988	M.Sc. UCT (Applied Mathematics - Degree with Distinction) Thesis title: Model selection for the dynamics of Southern African hake resources.
1989 - 1991	Ph.D. UCT (Applied Mathematics) Thesis title: Management procedures for Cape hake and baleen whale resources.
1987 - 1992	Research Officer in the Benguela Resources Population Modeling project of the Benguela Ecology Programme, FRD based in the Department of Applied Mathematics, UCT.
1992 - 1994	Research Associate at the School of Fisheries, University of Washington.
1994 -	Resource Modeller, Division of Marine Research, CSIRO.
2001 - 2005	Research Associate Professor, School of Aquatic and Fishery Sciences, University of Washington.
2005 - 2007	Associate Professor, School of Aquatic and Fishery Sciences, University of Washington.
2007 -	Professor, School of Aquatic and Fishery Sciences, University of Washington.
2012 -	Director, School of Aquatic and Fishery Sciences, University of Washington.

TEACHING EXPERIENCE

1987 - 1991	Lectured parts of AMA 218S (Introduction to Biological Modeling).
1988 & 1991	Lectured parts of SMS 201F (Calculus of Several Variables and Vector Analysis).
2001	Planned and lectured FISH 512 (Age Structured Models) with Ray Hilborn.
2002, 2004-5	Planned and lectured FISH 458 (Fisheries Stock Assessment).
2003	Planned and lectured workshops on Visual Basic and AD Model Builder.
2003, 5, 7, 8	Planned and lectured FISH 507 (Numerical Computing for Fisheries Assessment and Management).
2004	Planned and lectured FISH 507 (Age Structured Models) with Ray Hilborn.
2004	Acted as faculty mentor for Lucy Flynn who taught FISH 497 (Visual Basic Programming with Excel).
2005-12	Planned and lectured QSCI 381B (Introduction to Probability and Statistics).
2006-17	Planned and lectured FISH 558 (Advanced Fisheries Stock Assessment).
2008	Planned and lectured FISH 497E (Advanced R programming).

2009-10 Acted as faculty mentor for FISH 507F/552 (Introduction to R programming).
2009-12 Planned and lectured FISH 507G/553 (Advanced R programming).
2010-16 Planned and lectured FISH 559 (Numerical Computing for Fisheries Assessment and Management).

During 2001-2012, I have also given guest lectures / participated in the following courses: FISH 210, 323, 444, 458, 475, 512, 522, 558, 578, BIOL 562, SMEA 537, and QERM 597.

STUDENTS SUPERVISED

I currently chair the Committees of the following students:

1. Kelli Johnson: (Ph.D.) "Predator-prey dynamics and ecosystem-based reference points."[Started Fall 2011]
2. Lee Cronin-Fine: (Ph.D) "" [Started Summer 2015]
3. Kristin Privitera-Johnson ""[Started Fall 2015]
4. Caitlin Allen: (Ph.D) "" [Started Summer 2017]
5. John Best: (Ph.D) "" [Started Summer 2017]
6. Grant Adams (Ph.D) "" [Started Fall 2017]
7. Madi Shipley (MS) "" [Started Fall 2017]

I also am a member of the committee of John Feenstra (Ph.D. student, University of Adelaide). I am a member of the Committees of the following UW students:

1. Jeremy Harris (PhD) [2012 –
2. Jeff Rutter (Ph.D) [2013 –
3. John Trochta (MS) [2014 –
4. Thomas Buehrens [2016 –
5. Luka DeFilippo [2017 –

Students with completed degrees

Chaired

1. Gavin Fay: "A Bayesian stochastic metapopulation model for Steller's sea lions in Alaska" (MS; SAFS, 2004).
2. Teresa A'Mar: "Quantifying Error and Uncertainty in Fishery Stock Assessment Models" (MS; QERM, 2004).
3. Stephani Zador: "Management implications of factors influencing seabird populations" (Ph.D.; SAFS, 2007) [co-chair with Julia Parrish]
4. Rod Towell: "Population dynamics of Northern fur seal population (*Callorhinus Ursinus*) on the Pribilof Islands, Alaska" (MS; QERM, 2008).
5. Jason Cope: "Issues and advances in data-limited stock assessment: Experimentation through simulation" (Ph.D.; SAFS, 2008)
6. Melissa A Haltuch: "Modeling human and climate impacts on the management of the Pacific north west groundfish fishery" (Ph.D.; SAFS, 2008)
7. John Brandon: "Quantifying Uncertainty and Incorporating Environmental Stochasticity in Stock Assessments of Marine Mammals". (Ph.D.; SAFS, 2009)
8. Teresa A'Mar: "A Management Strategy Evaluation exploring the National Standards of the Magnusson-Stevens Fisheries Conservation and Management

Acts with respect to the robustness of decision rules used for North Pacific groundfish, with applications for the U.S. Gulf of Alaska walleye pollock (*Theragra chalcogramma*) fishery" (Ph.D.; QERM 2009)

8. Doug Kinzey: "Multispecies stock assessment with predator-prey interactions" (Ph.D.; SAFS 2010)
9. Tommy Garrison: "The Value of Marine Protected Areas for Improving Stock Assessments" (MS; QERM 2010)
10. Chantel Wetzell: "Challenges of data-Limited Stock Assessments: Simple vs. Complex Stock Assessment Techniques and the Influence of Data" (MS; SAFS 2011)
11. James Thorson: " Improved estimation of behaviors, ecological processes, and abundance trends in marine species using multi-species mixture distribution models, autonomous underwater vehicles, and multi-state tag-resighting models" (Ph.D.; SAFS 2011)
12. Charlotte Boyd: "The predator's dilemma: Investigating the response of seabirds to changes in the availability and distribution of small pelagic prey resources" (Ph.D.; SAFS 2012) [co-supervisor with Glenn Van Blaricom]
13. Gavin Fay: "Spatial modelling for monitoring and management of marine metapopulations" (Ph.D.; SAFS 2012)
14. Dusanka Poljak: "Impact of Ocean Acidification on Recruitment and Yield of Bristol Bay Red King Crab" (MS; SAFS 2013)
15. Cody Szuwalski: "Reaching management objectives given uncertainty: A management strategy evaluation of the eastern Bering Sea snow crab (*chionocetes opilio*) fishery?" (Ph.D; SAFS 2014)
16. Ingrid Spies: "Building a bridge between genetics and fisheries management" (Ph.D.; QERM 2014)
17. Stan Kotwicki: "Combining bottom trawl and acoustic data to improve survey derived abundance estimates of semipelagic species." (Ph.D.; SAFS 2014) [co-chair with John Horne]
18. Chantel Wetzell: "Management strategy evaluation for the determination of annual catch limits using probability based methods for West Coast groundfish" (Ph.D; SAFS 2016).
19. Caitlin Allen: "Stock assessment for commercial Alaskan species, accounting for age-size-structured population dynamics (MS; SAFS 2017).
20. Lee Qi: "Incorporating an otolith-derived environmental index into growth for stock assessment models" (MS; SAFS 2017).
21.

Committees

1. Gakushi Ishimura (MS) [2001–2003] (thesis title: "Bioeconomic model approach for a fluctuating fish stock: Bioeconomic assessment of harvest strategies for the Pacific whiting fishery").
2. Brandon Chasco (MS) [2002–2004] (thesis title: "Run Reconstruction and in-season forecasting of sockeye salmon in Chignik, Alaska").
3. Carolina Minte-Vera (Ph.D.) [2001–2004] (thesis title: "Meta-Analysis of Density-dependent Somatic Growth").
4. Trevor A. Branch (Ph.D.) [2001–2004] (thesis title: "Individual quotas as a management tool for multispecies fisheries").
5. Lucy Flynn (MS) [2003–2005] (thesis title: "Quantification and Prediction of Bristol Bay, Alaska, Sockeye Salmon (*Oncorhynchus nerka*) Run Timing").

6. Tim Miller (Ph.D.) [2003– 2005] (thesis title: "Estimation of Catch Parameters from a Fishery Observer Program with Multiple Objectives").
7. Ian Stewart (Ph.D.) [2002–2006] (thesis title: "Stock assessment with an evaluation of structural uncertainty, and model performance applied to English sole").
8. Eric Ward (Ph.D.) [2003–2006] (thesis title: "Incorporating model selection and decision analysis into population dynamics modeling").
9. Carey McGillaird (MS) [2005 –2006] (thesis title: "The importance of space and the state of the fishery in models of no-take marine reserves")
10. Jordan Watson (MS) [2006–2007] (thesis title: "Trade-offs in the design of fishery closures: silky shark bycatch management in the Eastern Pacific Ocean tuna purse seine fishery")
11. Kristen Broms (MS) [2007–2008] (thesis title: "Small game population reconstruction: Model development and applications")
12. Alex da Silva (Ph.D.) [2001– 2008] (thesis title: "Population dynamics of the blue shark, *Prionace glauca*, in the North Atlantic Ocean")
13. Ian Taylor (Ph.D.) [2002–2008] (thesis title: "Modeling spiny dogfish population dynamics in the Northeast Pacific")
14. Robin Thomson (Ph.D.) [2004–2008] (thesis title: "Statistical inference for movement behaviour using animal tracking data")
15. Judith Little (Ph.D.) [2003-2009] (thesis title: "Evaluating linkages in the social-ecological system of U.S. West Coast fisheries from ecological and spatial perspectives")
16. Dawn Dougherty (MS) [2007-2009] (thesis title: "The effects of management scale: A simulation study for U.S. Pacific coast groundfish")
6. Teresa Mongillo (MS) [2007-2009] (thesis title: "Estimated polychlorinated biphenyl (PCB) and polybrominated diphenyl ether (PBDE) accumulation in Southern Resident killer whales")
7. Hans Nesse (MS) [2007-2009] (thesis title: "Correlates of the decline of the Steller sea lion in the North Pacific")
8. Gaku Ishimura (Ph.D.) [2007-2010] (thesis title: "Transboundary management of a fish stock under climate variability: The case of Pacific sardine in the California current ecosystem")
9. Tony Jaecks (MS) [2009-2010] (thesis title: "Population dynamics and trophic ecology of Dolly Varden in the Iliamna River, Alaska: Life history of freshwater fish relying on marine food subsidies")
10. Suresh Sethi (Ph.D.) [2009-2010] (thesis title: "Fisheries Management with People in Mind: Assessing and Managing Risk")
11. Juan Valero (Ph.D.) [2004-2011] (thesis title: "Spatial dynamics, recruitment trends and sustainability of Pacific NW geoduck clams (Panopea generosa)")
12. Amanda Bradford (Ph.D.) [2007-2011] (thesis title: "Population characteristics and dynamics of the critically endangered western gray whale")
13. Rebecca Jablonski-Diehl (MS) [2009-2011] (thesis title: "Facing the Future of the International Whaling Commission: Addressing Environmental Threats through Organizational Learning")
14. Chad Wilsey (Ph.D.) [2009-2011] (thesis title: "Cumulative effects of military training, cowbird management, and climate-induced changes in fire regimes on the Fort Hood Black-capped Vireo population")

15. Steven Barbeaux (Ph.D.) [2006-2011] (thesis title: "Scientific acoustic data from commercial fishing vessels: Eastern Bering Sea walleye pollock (*Theragra chalcogramma*")
16. Kevin See (Ph.D.) [2009-2011] (thesis title: "State-space population dynamics models with applications to population viability analysis, the conservation of sagebrush birds in the Great Basin and estimating fisheries CPUE indices")
17. Nicolas Guiérrez (Ph.D) [2006-2011] (thesis title: "Managing Invertebrate Fisheries: Biology, Spatial Structure and Community-based Governance")
18. Neala Kendall (Ph.D.) [2009-2011] (thesis title: "Fishery selection and Pacific salmon life histories: patterns and processes")
19. Eva Dusek (Ph.D.) [2005-2012] (thesis title: "Modeling impacts of harmful algal blooms on shellfish: can we predict shellfish harvest closures using oceanographic and food web models? ")
20. Carey McGilliard (Ph.D.) [2008-2012] (thesis title: "Utility and implications of no–take marine reserves in fishery management strategies")
21. Kresmir Williams (Ph.D.) [2008-2013] (thesis title: "Evaluation of Midwater Trawl Selectivity and Its I nfluence on Acoustic-Based Fish Population Surveys")
22. Allan Hicks (Ph.D.) [2006-2013] (thesis title: "The utility of catch-per-unit-effort when assessing and managing long-lived fish stocks")
23. Cole Monnahan (MS) [2011-2013] (thesis title: "Population Trends of the Eastern North Pacific Blue Whale")
24. Kotaro Ono (Ph.D.) [2011 –2014] (thesis title: "The spatial dimensions of fisheries: improved use of spatial information in fisheries management and information for assessments")
25. Melissa Muradian (MS) [2013-2015] (thesis title: "Modeling the population dynamics of herring in the Prince William Sound, Alaska")
26. Joe Bizzaro (Ph.D.) [2010 – 2015] (thesis title: "Comparative resource utilization of eastern North Pacific skates (Rajiformes: Rajidae) with applications for ecosystem-based fisheries management")
27. Kiva Oken (Ph.D.) [2012 – 2016] (thesis title: "Controls on the productivity of exploited ecosystems: Linking ecology and resource management")
28. Sarah Valencia (Ph.D.) [2010-2017] (thesis title: "Integrating Marine Reserves into Data-poor Fisheries Management: Challenges and Opportunities")

POSTDOCTORAL FELLOWS SUPERVISED

Current: Jie Cao (2017-present), Christine Stawitz (2017-present), Kate Richerson (2017-present), Eiren Jacobson (2017-present), Alathea Letaw (2017-present), Amanda Faig (2016-present)

Past: Catherine Holt (2006-2008), Bob Lessard (2008), Ian Taylor (2008-2010), Teresa A'mar (2009-2010), James Murphy (2009-2010) Mathieu Woillez (2011-2012); Ivonne Oritz (2008-2013), Elizabeth Moffit (2009-2014), Carey McGilliard (2012-2014), Pamela Woods (2012-2014), Athol Whitten (2013-2014), Elizabeth Councill (2014-2015), Kotaro Ono (2014-2017), Charlotte Boyd (2015-2017),

ACADEMIC ADMINISTRATION EXPERIENCE

2001 - present Planned and co-ordinated the UW-NMFS mini-workshop series
2001 - 2003 University of Washington Faculty Senator
2002 - present Quantitative Committee, SAFS

2003	Chair: Marine Ecology Position Search Committee
2005 – 2007	Member: Recruitment, Admissions, and Scholarship Committee
2006	Member: JISAO Director Search Committee
2007 – 2013	Member: JISAO Council
2007 – present	Member: SAFS School Council
2007 – 2012	Chair: Recruitment, Admissions, and Scholarship Committee
2008	Member: SMA Search Committee
2011 – 2012	Associate Director, SAFS
2012 – present	member: CAPAM Advisory Board
2012 – present	Director, SAFS
2014	Chair: Friday Harbor Director Search Committee
2014	Member: JISAO Executive Advisory Committee
2017 – 2018	Chair: Oceanography Director Search Committee

PROFESSIONAL ACTIVITY

Appointments (major committees)

1. Member: Scientific Committee of the International Whaling Commission, 1990 – present
2. Chair: Southern Shark Fishery Assessment Group (Australia), 1995 – 2001.
3. Member: Northern Prawn Fishery Assessment Group, Australia (Australia), 1996 – 2000.
4. Scientific Member: Southern Shark Fishery Management Committee (Australia), 1997 – 2001
5. Member: IUCN Standards and Petitions Working Group, 1998 - present
6. Member: Pacific Fishery Management Council Scientific and Statistical Committee, 2001 – present (Chair Coastal Pelagic Subcommittee)
7. Participant: Working Group on Integration of Marine Protected Areas and Fishery Science and Management, 2004 – 2006.
8. Member: PSMFC Panel on "Strengthening Scientific Input and Ecosystem-Based Fishery Management for the Pacific and North Pacific Fishery Management Councils", 2005.
9. Member: North Pacific Research Board Science Panel, 2005 – 2014
10. Member: North Pacific Research Board Ecosystem Modeling Committee, 2006
11. Member: North Pacific Fishery Management Council Crab PLAN Team, 2007 – present
12. Member: Evaluating the Effectiveness of Stock Rebuilding Plans of the 2006 Fishery Conservation and Management Reauthorization Act, 2012 – 2014.
13. Honorary Associate, Center for Marine Science, University of Tasmania, 2005 – 2009
14. External Advisory Committee; MareFrame project, 2014 – 2017
15. External Advisory Committee; CLIMEFISH project, 2016 – Present
16. Editorial Boards: *Population Ecology, The Open Source Fish Science Journal, African Journal of Marine Science*
17. Associate Editor: *Journal of Applied Ecology, Fisheries Research*
18. Guest Editor: *Fisheries Research* - Special Issue on GLMs, GAMs and GLMMs in fisheries
19. Guest Editor: *Fisheries Research* – Special Issue on Harvest strategies
20. Guest Editor: *Fish & Fisheries* – Special Issue on Ecosystem Based Fisheries Management
21. Guest Editor: *Fisheries Research* – Special Issue on Stock Synthesis
22. Guest Editor: *Fisheries Research* – Special Issue on 5th International Billfish Symposium
23. Guest Editor: *Fisheries Research* – Special Issue on Data-poor stock Assessment and Management
24. Guest Editor: *Fisheries Research* – Special Issue on Selectivity
25. Guest Editor: *Fisheries Research* – Special Issue on Growth
26. Guest Editor: *Fisheries Research* – Special Issue on Data Weighting
27. Guest Editor: *Fisheries Research* – Special Issue on Recruitment

Awards

1. Jamieson Memorial Bursary - awarded on the basis of matriculation symbols (South Africa – 1983).
2. Jacob Burlank Scholarship - awarded to the top student in Mathematics II who intends progressing to Mathematics III (South Africa – 1984).

3. Roderick Noble Scholarship - awarded to the B.Sc graduate from UCT with the most outstanding academic record throughout his/her undergraduate career (South Africa – 1985).
4. Southern Life Book Prize - awarded to the top student in the B.Sc. (Hons) Computer Science class (South Africa – 1986).
5. Myer Levinson (EMDIN) Scholarship - awarded to the UCT student who is most successful in his/her B.Sc. (Hons) degree and who intends furthering his/her research in the year following the award of the scholarship (South Africa – 1986).
6. Croll Memorial Scholarship - awarded to the UCT student who is most successful in his/her B.Sc (Hons) degree and who intends furthering his/her research in the year following the award of the scholarship (South Africa – 1986).
7. South African College Croll Scholarship - awarded on the basis of examination results to a UCT student who intends furthering his/her research in the year following the award of the scholarship (South Africa – 1988).
8. S2A3 Medal - awarded by the South African Association for the Advancement of Science for the best M.Sc. dissertation in the Sciences at UCT (South Africa – 1988).
9. K. Radway Allen Award - awarded for an outstanding contribution in fish or fisheries science (Australia - 1999).
10. CSIRO Gold Medal (2009).
11. COFS Distinguished Teaching Awards (USA – 2003 & 2005).
12. COFS Distinguished Research Award (USA – 2008).
13. 2011 Best Paper Award: *Fishery Bulletin* (USA 2012).
14. Oscar Elton Sette Award – awarded to an outstanding marine fishery biologist by the Marine Fisheries Section of the American Fisheries Society (USA – 2012).
15. UW Distinguished Teaching Award (USA – 2013).
16. AFS Western Division Award of Excellence (USA – 2013).
17. Elected to the Washington Academy of Sciences (USA – 2014)
18. AFS Fisheries Management Section Award of Excellence (USA – 2016)

Recent (2001-2017) invited talks / keynotes addresses

1. Invited speaker: DFO Fisheries Management Studies Working Group, Dartmouth, 25-29 June 2001.
2. Invited speaker: Life Histories, Assessment and Management of Crustacean Fisheries, La Coruña, 8-14 October 2001.
3. Invited speaker: DFO Workshop on Implementing the Precautionary Approach in Assessment Advice, Ottawa, 10-14 December 2001.
4. Keynote speaker: Elasmobranch Fisheries: Managing for Sustainable Use and Biodiversity Conversation, 24th Annual NAFO meeting, Santiago de Compostela, 11-13 September 2002.
5. Invited speaker: Oregon Chapter American Fisheries Society, 39th Annual Meeting, Eugene, 26-28 February 2003.
6. Invited speaker: American Fisheries Society, 133rd Annual Meeting, Quebec, 11-13 August 2003.
7. Invited speaker: Pre-conference Workshop on Assessment and Management of Deepsea Fisheries, Dunedin, 27-29 November 2003.
8. Keynote speaker: Deep Sea 2003 Conference, Queenstown, 1-5 December 2003.
9. Invited speaker: World Fisheries Congress, Vancouver, 2-6 May 2004.
10. Keynote speaker: 2004 World Conference on Natural Resource Modelling, Melbourne, 12-15 December 2004.

11. Keynote speaker: ICES Symposium on Fisheries Management Strategies, Galway, 27-30 June 2006.
12. Keynote speaker: 10th National Stock Assessment Workshop, Port Townsend, 5-8 June 2008.
13. Keynote speaker. 5th World Fisheries Congress, Yokohama, 20-24 October 2008.
14. Keynote speaker. National Ecosystem Modelling Workshop II, Annapolis, 25-27 August 2009.
15. Keynote speaker. International Statistical Ecology Conference 2012, 3-6 July 2012
16. Keynote speaker. Selectivity: theory, estimation, and application in fishery stock assessment models, La Jolla, 13 March 2013.
17. Invited speaker. Managing Our Nation's Fisheries, Washington DC, 6-9 May 2013.
18. Keynote speaker. Assessment of billfishes: Current status and some future directions. 5th International Billfish Symposium, Taipei, 4-8 November 2013.
19. Keynote speaker. Estimating growth within size-structured fisher stock assessments: What is the State of the Art and what does the future look like? Growth: theory, estimation, and application in fishery stock assessment models, La Jolla, 3-7 November 2014
20. Keynote speaker. Stock Assessment and Fisheries Management (What is the State of the Art and What does the Future Look Like?). 9th International Flatfish Symposium, Cle Elem, 9-14 November 2014.
21. Keynote speaker. Use of Management Strategy Evaluation to assess the performance of Harvest Control Rules, 5th National SSC Meeting, Honolulu, 23-25 February 2015.
22. Keynote speaker. How to Implement an MSE. ISC management Strategy Evaluation Workshop, Yokohama, 16-17 April 2015.
23. Keynote speaker. Strategic Management Decision Making in a Complex World: Quantifying, Understanding and Using Tradeoffs. MyFish Targets and Limits for Long Term Fisheries Management Symposium, Athens, 27-30 October 2015.
24. Invited speaker. An Honest Appraisal of Stock Assessment. 7th World Fisheries Congress, Busan, 23-27 May 2016.
25. Invited speaker. Rebuilding Plans for USA fisheries: Progress and Challenges. Shanghai Ocean University, Shanghai, 11 April 2017.
26. Invited speaker. Management Strategy Evaluation: A Panacea or Yet Another Overused Tool? Shanghai Ocean University, Shanghai, 13 April 2017.
27. Keynote speaker. Management Strategy Evaluation (the Current State and Challenges). IMBIZO 5. 2 October 2017.
28. Keynote speaker. Modelling recruitment in a spatial context: A review of current approaches and suggestions for best practices. CAPAM workshop on Recruitment: theory, estimation, and application in fishery stock assessment models. 2 November 2017.

INTERNATIONAL SCIENTIFIC MEETINGS ATTENDED

1. IWC Comprehensive Assessment Workshop on Management Procedures, Lowestoft, February 1989 (Invited participant).
2. ICSEAF Ad hoc Working Group on Stock Assessment Methodology, Madrid, June 1989 (South African delegate).
3. ICSEAF Ad hoc Working Group on Revision of Statistical Standards, Madrid, June 1989 (South African delegate).

4. IWC Comprehensive Assessment Workshop on Management Procedures, Oslo, February 1990 (Invited participant).
5. IWC Scientific Committee meeting, Noordwijk, June 1990 (Invited participant).
6. IWC Comprehensive Assessment Workshop on Management Procedures, Tokyo, December 1990 (Invited participant).
7. Benguela Tropic Functioning Symposium, Cape Town, September 1991.
8. Benguela Ecology Programme Workshop on Seal-fishery Biological Interactions, Cape Town, September 1991.
9. ICCAT SCRS meeting, Madrid, November 1991 (US delegate).
10. Workshop on Risk Evaluation and Biological Reference Points for Fisheries Management, Halifax, November 1991.
11. Conference - "Hake: Fisheries; Products and Markets", Bremerhaven, November 1991.
12. IWC Comprehensive Assessment Workshop on Management Procedures, Copenhagen, March 1992 (Invited participant).
13. IWC Scientific Committee meeting, Glasgow, June 1992 (Invited participant).
14. Marine Linefish Symposium, Durban, October 1992.
15. IWC Scientific Committee meeting, Kyoto, April-May 1993 (Invited participant).
16. ICCAT Bluefin Stock Assessment Session, Madrid, September 1993 (US delegate).
17. Modelling of Fisheries Management Strategies, Dublin, February 1994.
18. IWC Scientific Committee meeting, Puerto Vallarta, May 1994 (Invited participant).
19. ICCAT Albacore Research Program Final Meeting, Sukarrieta, May 1994 (South African participant).
20. Global Trends in Fisheries Management Conference, Seattle, June 1994.
21. ICCAT Bluefin Stock Assessment Session, Fuengirola, September 1994 (US delegate).
22. ICCAT SCRS meeting, Madrid, November 1994 (US delegate).
23. North Pacific Symposium on Invertebrate Stock Assessment and Management, Nanaimo, March 1995.
24. IWC Scientific Committee meeting, Dublin, May 1995 (Invited participant).
25. IUCN / WWF Threatened Species Meeting, London, May 1996 (Invited participant).
26. NRC Stock Assessment Workshop, Los Angeles, May 1996 (Invited participant).
27. IWC Scientific Committee meeting, Aberdeen, June 1995 (Invited participant).
28. ICCAT albacore species meeting, Taipei, August 1996 (South African delegate).
29. 5th International Conference and Workshop on Lobster Biology and Management, February 1997.
30. Workshop on Harp Seal - Fishery Interactions in the Northwest Atlantic, February, 1997 (Invited participant).
31. Review of Japanese Research Programme in the Antarctic, Tokyo, May 1997 (Invited participant).
32. Workshop on Research and Management of the Namibian Fur Seal Population, Swakopmund, June 1997.
33. American Fisheries Society Annual Meeting, Monterey, August 1997.
34. IWC Scientific Committee meeting, Bournemouth, September 1997 (Invited participant).
35. Workshop on Research and Management of the Stocks of Cape hake off Namibia, Swakopmund, October 1997 (Invited participant).

36. IUCN Criteria and Categories Review Scoping Workshop, London, March 1998 (Invited participant).
37. IWC Scientific Committee meeting, Muscat, April 1998 (Invited participant).
38. Conference - "Confronting Uncertainty in the Evaluation and Implementation of Fisheries Management Systems", November 1998.
39. Workshop - EU Concerted Action "Evaluation and comparison of methods for estimating uncertainty in harvesting fish from natural populations", Key Largo, January 1999.
40. IUCN Criteria and Categories Review: Marine Workshop, Tokyo, January 1999.
41. American Fisheries Society Endangered Marine Fishes Workshop, Gloucester, March 1999.
42. IWC Scientific Committee meeting, Grenada, May 1999 (Invited participant).
43. Workshop - EU Concerted Action "Evaluation and comparison of methods for estimating uncertainty in harvesting fish from natural populations", Nantes, May 1999.
44. IUCN Criteria and Categories Review Workshop, Cambridge, June 1999.
45. 17th Lowell Wakefield Fisheries Symposium, Anchorage, November 1999.
46. IWC Workshop on the Development of an Aboriginal Subsistence Whaling Management Procedure, Seattle, November 1999 (Invited participant).
47. Workshop - EU Concerted Action "Evaluation and comparison of methods for estimating uncertainty in harvesting fish from natural populations", Madrid, January 2000.
48. Review of Japanese Research Programme in the North Pacific, Tokyo, February 2000 (Invited participant).
49. IWC Scientific Committee meeting, Adeliade, June 2000 (Invited participant).
50. Workshop - EU Concerted Action "Evaluation and comparison of methods for estimating uncertainty in harvesting fish from natural populations", Reyjavik, August 2000.
51. Pacific Management Council, September 2000.
52. Workshop – Stock assessment techniques for hermaphroditic marine fisheries, St Petersburg, September 2000 (Invited participant).
53. Workshop – Review of assessments for Cape hake and rock lobster (BENEFIT programme), November 2000 (Invited participant).
54. IWC Workshop on the Development of an Aboriginal Subsistence Whaling Management Procedure, Seattle, December 2000 (Invited participant).
55. Review of NZ rock lobster assessment, Wellington, June 2001.
56. DFO workshop on Intensive Fishery Evaluations, Halifax, June 2001 (Invited Speaker).
57. IWC Scientific Committee meeting, London, July 2001 (Invited participant).
58. ICCAT workshop on bluefin tuna mixing, Madrid, September 2001 (US delegate).
59. Ecological Modelling Workshop, Hobart, August 2001 (Invited participant).
60. Conference - Life Histories, Assessment and Management of Crustacean Fisheries, La Coruña,, October 2001 (Invited speaker).
61. 2001 BENEFIT workshop, Cape Town, November 2001 (Invited participant).
62. DFO Workshop on Implementing the Precautionary Approach in Assessment Advice, Ottawa, December 2001 (Keynote speaker).
63. January 2002 Workshop on North Pacific minke Implementation Simulation Trials, Seattle, January 2002 (Invited participant).
64. Fourth Workshop on the Development of an Aboriginal Subsistence Whaling Management Procedure (AWMP), 23-26 January 2002, Invited Participant.

65. IWC Scientific Committee, Shimonoseki, April–May 2002 (Invited participant).
66. IWC Modelling Workshop on Cetacean-Fishery Competition, La Jolla, June 2002 (Invited participant).
67. ICCAT bluefin tuna assessment session, Madrid, July 2002 (US delegate).
68. Conference - Elasmobranch Fisheries: Managing for Sustainable Use and Biodiversity Conversation, 24th Annual NAFO meeting, Santiago de Compostela, September 2002 (Keynote speaker).
69. Workshop - An Ecosystem Approach to Fisheries Management in the Southern Benguela: Introducing the Concept and Looking at Our Options, Cape Town, December 2002 (Invited speaker).
70. BENEFIT Stock Assessment Workshop 2002, Cape Town, December 2002, (Invited participant).
71. IWC Workshop of North Pacific Implementation Simulation Trials, Seattle, January 2003 (Invited participant).
72. Testing of Spatial Structure Models Workshop, Scripps Institution of Oceanography, San Diego, January 2003 (Invited participant).
73. Workshop to Develop Improved Methods for Providing Harp and Hooded Seal Harvest Advice, Woods Hole, February 2003 (Invited participant).
74. Oregon Chapter American Fisheries Society, 39th Annual Meeting, Eugene, 26-28 February 2003 (Invited Speaker).
75. American Fisheries Society, 133rd Annual Meeting, Quebec, 11-13 August 2003 (Invited Speaker).
76. 21st Lowell Wakefield Fisheries Symposium, Anchorage, 22–25 October 2003.
77. Pre-conference Workshop on Assessment and Management of Deepsea Fisheries, Dunedin, 27-29 November 2003 (Invited Speaker).
78. Deep Sea 2003 Conference, Queenstown, 1-5 December 2003 (Keynote speaker).
79. BENEFIT Stock Assessment Workshop 2003, Cape Town, January 2003 (Invited participant).
80. World Fisheries Congress, 2-6 May 2004, Vancouver, Canada.
81. Fifth Workshop on the Development of an Aboriginal Subsistence Whaling Management Procedure, 21-24 March 2004, Seattle (Invited participant).
82. IWC Scientific Committee, Sorrento, June-July 2004 (Invited participant).
83. Working Group on Integration of Marine Protected Areas and Fishery Science and Management, Santa Cruz, 6-8 October 2004 (Invited participant).
84. BENEFIT Stock Assessment Workshop 2004, Cape Town, 6-11 December 2004 (Invited participant).
85. 2004 World Conference on Natural Resource Modelling, Melbourne, 12-15 December 2004 (Keynote Speaker).
86. Intersessional Workshop on the *pre-Implementation Assessment* of western North Pacific Bryde's Whales, Tokyo, 21-25 March 2005 (Invited Participant).
87. Scientific Committee of the International Whaling Commission, 30 May – 10 June, 2005, Ulsan, Korea (Invited Participant).
88. Working Group on Integration of Marine Protected Areas and Fishery Science and Management, Santa Cruz, 27-29 June 2005 (Invited Participant).
89. Working Group on Integration of Marine Protected Areas and Fishery Science and Management, Santa Cruz, 17-19 October 2005 (Invited participant).
90. First Intersessional Workshop on the Western North Pacific Bryde's Whales Implementation, Shizuoka, 25-29 October 2005 (Invited Participant).
91. MCM/NRF/Industry SA Rock Lobster International Stock Assessment Workshop, Cape Town, 29 November–3 December 2005 (Invited Participant).

92. Second workshop on the Testing of Spatial Structure Models (TOSSM), Potsdam, 17-21 March 2006 (Invited Participant).
93. Working Group on Integration of Marine Protected Areas and Fishery Science and Management, Santa Cruz, 21-22 April 2006 (Invited participant).
94. IUCN Standards and Petition Sub-Committee, Charlottesville, 13-14 May 2006.
95. First Intersessional Workshop on Progress Towards a Bowhead Whale Implementation Review, Seattle, 24-27 April 2006 (Invited Participant).
96. Scientific Committee of the International Whaling Commission, St Kitts, 26 May – 6 June, 2006 (Invited Participant).
97. Western Pacific workshop on policy, enforcement and sustainable trade for the CITES Appendix II listed humphead/Napoleon wrasse, *Cheillnus undulates*, 5-7 June 2006, Hong Kong (FAO Participant).
98. ICES Symposium on Fisheries Management Strategies, Galway, 27-30 June 2006 (Keynote speaker).
99. Working Group on Integration of Marine Protected Areas and Fishery Science and Management, Santa Cruz, 17-19 July 2006 (Invited participant).
100. Second Intersessional Workshop on the Western North Pacific Bryde's Whales Implementation, Yokohama, 10-14 December 2006 (Invited Participant).
101. 2nd Intersessional Workshop to prepare for the 2007 Bowhead Whale *Implementation Review*, Seattle, 12-17 January 2007 (Invited Participant).
102. Marine Science in Alaska Conference, Anchorage, 20-24 January 2007 (Participant).
103. 3rd Intersessional Workshop to Prepare for the 2007 Bowhead Whale *Implementation Review* and to Consider Progress on the Greenland Research Programme, Copenhagen, 20-25 March 2007 (Invited Participant).
104. Scientific Committee of the International Whaling Commission, Anchorage, 5-18 May 2007 (Invited Participant).
105. Modelling Ecosystem Interactions for Informing an Ecosystem Approach to Fisheries: Best Practices in Ecosystem Modelling, Tivoli, 3-6 July 2007 (Invited Participant).
106. SA Sardine-Anchovy and Rock Lobster Resources International Assessment Workshop, Cape Town, 9-13 July 2007 (Invited Reviewer).
107. 137th Annual Meeting of the American Fisheries Society, San Francisco, 2-6 September 2007 (Invited Speaker).
108. National Workshop on Modelling Tools for Ecosystem Approaches to Management, Victoria, 22-25 October 2007 (Invited Speaker).
109. IWC MSYR Workshop, Seattle, 16-19 November 2007 (Invited Participant).
110. Expert Review Panel to Review MSY-related Reference Points in Use in New Zealand Fisheries, 28 January – 1 February 2008 (Invited Reviewer).
111. AWMP Workshop on Greenlandic Fisheries, Copenhagen, 26-29 March 2008 (Invited Participant).
112. First Intersessional RMP Workshop on the North Atlantic Fin Whales, Copenhagen, 31 March – 4 April 2008 (Invited Participant).
113. 10th National Stock Assessment Workshop, Port Townsend, 6-8 May 2008 (Keynote speaker).
114. Scientific Committee of the International Whaling Commission, Anchorage, 31 May – 13 June 2008 (Invited Participant).
115. IUCN Standards and Petitions Working Group, Geneva, 7-8 July 2008 (Invited Participant).

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116. CCAMLR Workshop to Review Input Data for Antarctic marine Ecosystem Models, Hobart, 11-15 August 2008 (Invited Participant).
117. Keynote speaker: 5th World Fisheries Congress, Yokohama, 20-24 October 2008 (Keynote speaker).
118. IWC Intersessional Meeting on Southern Hemisphere Humpback Whale Assessment Methodology, Seattle 3-6 February 2009 (Invited Participant).
119. IWC Intersessional Meeting on MSYR for Baleen Whales, Seattle, 6-8 February 2009 (Invited Participant).
120. IWC Workshop on Whales and Climate Change, Siena, 21-25 February 2009 (Invited Participant).
121. Second Intersessional Workshop of the North Atlantic Fin Whale *Implementation*, Copenhagen, 12-22 March 2009 (Invited Participant).
122. Second AWMP Workshop on Greenlandic Fisheries, Copenhagen, 24-27 March 2009 (Invited Participant).
123. Scientific Committee of the International Whaling Commission, Maderia, 31 May – 12 June 2009 (Invited Participant).
124. National Ecosystem Modelling Workshop II, Annapolis, 25-27 August 2009 (Keynote speaker).
125. NRF – MCM Stock Assessment Workshop, Cape Town, 30 November – 4 December 2009 (Invited Participant).
126. 3rd AWMP Workshop on Greenlandic Hunts, Copenhagen, 14-17 December 2009 (Invited Participant).
127. Scientific Assessment Group, Honolulu, 23-25 January 2010 (Invited Participant).
128. Scientific Committee of the International Whaling Commission, Agadir, 30 May – 11 June 2010 (Invited Participant).
129. NRF – MCM Stock Assessment Workshop, Cape Town, 29 November – 3 December 2010 (Invited Participant).
130. First RMP Intersessional Workshop for western North Pacific common minke whales, 14-17 December 2010 (Invited Participant).
131. International Fisheries Stock Assessment Workshop, Cape Town, 29 November – 3 December 2009 (Invited Participant).
132. 2011 AWMP Workshop with a focus on eastern gray whales, 28 March – 1 April, 2011 (Invited Participant)
133. Scientific Committee of the International Whaling Commission, Tromso, 30 May – 11 June 2011 (Invited Participant).
134. NRF – MCM Stock Assessment Workshop, Cape Town, 29 November – 3 December 2011 (Invited Participant).
135. First RMP Intersessional Workshop for western North Pacific common minke whales, 12-16 December 2011 (Invited Participant).
136. Scientific Committee of the International Whaling Commission, Panama City, 11-23 June 2012 (Invited Participant).
137. International Statistical Ecology Conference 2012, Sundvolden, 3-6 July 2012, (Keynote speaker).
138. 8th Regular Session of the Scientific Committee of the Western and Central Pacific Fisheries Commission, Busan, 7 August 2012 (Invited Speaker).
139. NRF – MCM Stock Assessment Workshop, Cape Town, 26 - 30 November 2012 (Invited Participant).
140. Fourth AWMP Workshop on the Development of SLAs for the Greenlandic Hunts, Copenhagen, 15-18 December 2012 (Invited Participant)

141. Selectivity: theory, estimation, and application in fishery stock assessment models, La Jolla, 13 March 2013 (Keynote Speaker).
142. Second Intersessional Workshop on the *Implementation Review* for western North Pacific common minke whales, La Jolla, 19-23 March 2013 (Invited Participant).
143. Fourth Intersessional Workshop on the Review of MSYR, La Jolla, 26-28 March 2013 (Invited Participant).
144. Managing Our Nations Fisheries, Washington DC, 7-9 May 2013 (Invited speaker).
145. Scientific Committee of the International Whaling Commission, Jeju, 3-15 June 2013 (Invited Participant).
146. MARAM/DAFF Stock Assessment Workshop, Cape Town, 2 - 6 December 2013 (Invited Participant).
147. Intersessional Workshop on the *Implementation Review* for North Atlantic fin whales, Copenhagen, 6-8 January 2014 (Invited Participant).
148. AWMP Intersessional Workshop on Developing *SLA*s for the Greenland Hunts, Copenhagen, 8-11 January 2014 (Invited Participant).
149. Expert Workshop to Review the Japanese JARPA II Special Permit Research Programme, Tokyo, 24-28 February 2014(Invited Participant).
150. Goodman Memorial Symposium, Bozeman, 21-22 March 2014 (Invited speaker).
151. Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales, San Diego, 8-11 April 2014 (Invited Participant).
152. AWMP/RMP Joint Workshop on the stock structure of North Atlantic common minke whales, Copenhagen 14-17 April 2014 (Invited participant).
153. KBBE Symposium, Wellington, 28 April – 1 May 2014 (Invited speaker).
154. Scientific Committee of the International Whaling Commission, Bled, 12-24 May 2014 (Invited Participant).
155. Growth: theory, estimation, and application in fishery stock assessment models Workshop, San Diego, 3-7 November 2014 (Keynote speaker).
156. 9th International Flatfish Symposium, Cle Elem, 9-14 November 2014 (invited speaker)
157. MARAM/DAFF Stock Assessment Workshop, Cape Town, 1 - 5 December 2014 (Invited Participant).
158. AWMP Workshop on Developing *Strike Limit Algorithms (SLA*s) for the Greenland Hunts, Copenhagen, 3-5 February 2015 (Invited Participant).
159. Expert Panel to review the proposal by Japan for NEWREP-A, Tokyo, 7-10 February 2015 (Invited Participant)
160. Workshop on the *Implementation Review* for North Atlantic Common Minke Whales, Copenhagen, 16-20 February 2015 (Invited Participant).
161. Workshop on the *Implementation Review* for North Atlantic Fin Whales, Copenhagen, 16-20 February 2015 (Invited Participant).
162. 5th National SSC Meeting, Honolulu, 23-25 February 2015 (Invited speaker).
163. 2nd Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales, San Diego, 1-3 April 2015 (Invited Participant).
164. ISC management Strategy Evaluation Workshop, Yokohama, 16-17 April 2015 (Invited speaker).
165. Scientific Committee of the International Whaling Commission, San Diego, 22 May – 3 June 2015 (Invited Participant).
166. Data Weighting Workshop, San Diego, 19-23 October 2015 (Invited speaker).
167. Myfish Targets and limits for Long Term Fisheries Management Symposium, Athens, 27-30 October 2015 (Keynote speaker)

168. IUCN Standards and Petitions Sub-Committee meeting, Sydney, 17-20 November 2015 (Invited Participant)
169. MARAM/DAFF Stock Assessment Workshop, Cape Town, 30 November - 4 December 2015 (Invited Participant).
170. AWMP Intersessional Workshop, Copenhagen, 14-17 December 2015 (Invited Participant).
171. Expert Panel of the final review on the western North Pacific Japanese Special Permit programme (JARPN II), Tokyo, 22-26 February 2016 (Invited Participant).
172. RMP Intersessional Workshop on the *Implementation Reviews* of common minke whales and fin whales in the North Atlantic, Copenhagen, 19-23 March 2016 (Invited Participant).
173. 3rd Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales, San Diego, 18-20 April 2016 (Invited Participant; co-convenor).
174. 7th World Fisheries Congress, Busan, 23-27 May 2016 (Invited Speaker).
175. Scientific Committee of the International Whaling Commission, Bled, 7-19 June 2016 (Invited Participant).
176. Expert Consultation Workshop on Management Strategy Evaluation, New Caledonia, 28-30 June 2016 (Invited Participant).
177. MARAM/DAFF Stock Assessment Workshop, Cape Town, 28 November - 2 December 2016 (Invited Participant).
178. Third RMP Intersessional Workshop on the *Implementation Review* for North Atlantic common minke whales, Copenhagen, 16-18 December 2016 (Invited Participant).
179. 2016 AWMP Intersessional Workshop on Developing *SLAs* for the Greenland hunts and the AWS, Copenhagen, 17-22 December 2016 (Invited Participant).
180. Expert Panel Workshop on the Proposed Research Plan for New Scientific Whale Research Programme in the western North Pacific (NEWREP-NP), Tokyo, 30 January -3 February 2017 (Invited Participant).
181. Workshop on the *Implementation Review* of western North Pacific Bryde's whales, Tokyo, 21-24 March 2017 (Invited Participant).
182. 4th Workshop on the Rangewide Review of the Population Structure and Status of North Pacific Gray Whales, San Diego, 27-19 April 2017 (Invited Participant; co-convenor).
183. Scientific Committee of the International Whaling Commission, Bled, 9-21 May 2017 (Invited Participant).
184. IMBIZO 5, Woods Hole, 2-5 October 2017 (Keynote speaker).
185. 2017 AWMP Workshop on the Development of SLAs for the Greenlandic Hunts, Copenhagen, 18-21 October 2017 (Invited Participant).
186. CAPAM workshop on Recruitment: theory, estimation, and application in fishery stock assessment models, 30 October – 3 November 2017 (Keynote speaker).
187. MARAM/DAFF Stock Assessment Workshop, Cape Town, 27 November - 1 December 2017 (Invited Participant).
188. MAREFRAME Final Meeting, Brussels, 13-14 December 2017 (Invited External Panel Member).
189. Workshop on WNP common minke whale stock structure in preparation for the start of the *Implementation Review* in April 2018, Tokyo, 12-13 February 2018 (Invited Participant).
190. Second Implementation Review Workshop on western North Pacific Bryde's whales, Tokyo, 14-16 February 2018 (Invited Participant).

UNIVERSITY ACADEMIC RECORD (UCT)

	Subject	Class
1983	Accounting A	1 (75% - 100%)
	Applied Mathematics 104	1
	Computer Science Ia	1
	Mathematical Statistics Ia	1
	Mathematics I	1
1984	Applied Mathematics 210	1
	Applied Mathematics 221	1
	Computer Science IIa	1
	Mathematics IIc	1
1985	Applied Mathematics IIIB	1
	Computer Science IIIA	1
	Mathematics 3A0	1 (Top student)
1986	Computer Science (Honours)	1 (Top student)
1988	Applied Mathematics (Masters)	1
1991	Applied Mathematics (Ph.D.)	

STOCK ASSESSMENT COMMITTEES

1) Ad hoc Working Group on Stock Assessment Methodology, ICSEAF (1989).
2) Demersal Working Group, South Africa (1990 - 1992).
3) Linefish Working Group, South Africa (1990).
4) Pelagic Working Group, South Africa (1991 - 1992).
5) Bluefin Species Group, ICCAT (1991, 1993, 1994).
6) Albacore Species Group, ICCAT (1991, 1994).
7) Hoki Working Group, New Zealand (1993, 1994).
8) Orange Roughy Working Group, New Zealand (1993, 1994).
9) Southern Blue Whiting Working Group, New Zealand (1994).
10) Southern Shark Fishery Assessment Group, Australia (1995 - 2000).
11) Northern Prawn Fishery Assessment Group, Australia (1996 - 2000).
12) Eastern Gemfish Assessment Group, Australia (1996 – 2000).
13) Blue Grenadier Assessment Group, Australia (1997 – 2000).
14) Blue Warehou Assessment Group, Australia (1998 - 2000).
15) Tasmanian Rock Lobster Assessment Group, Australia (1999 - 2000).
16) PFMC Scientific and Statistical Committee (2001-present).
17) NPFMC Crab PLAN Team (2007-present).

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