

**CURRICULUM VITAE****CV KES**

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 Business: Cand. Scient. Biology, CEO Fishlab ([www.fishlab.dk](http://www.fishlab.dk)) and  
 Hestelaboratoriet ([www.hestelab.dk](http://www.hestelab.dk)), co-owner of MicroWise Aps,  
 BOD Venøsund Fisk og Skaldyr Aps.  
 Languages: English, German and French

**Key areas of qualification:**

- Plankton dynamics
- Marine fry production
- Taxonomic identification of mesozooplankton
- Taxonomic identification of fish eggs and fish larvae
- Environmental Monitoring
- Environmental Impact Assessment in relation to impact on spawning fish
- General knowledge on marine bottom dwelling animals
- General knowledge on marine ecology and fish biology
- Project management and coordination, administration

**Scientific career and positions held:**

YEAR (FROM/TO)	INSTITUTION	TASKS
<b>2004/ONGOING</b>	Fishlab	Director and project leader. Environmental monitoring (mesozooplankton, ichthyoplankton and bottom dwelling animals). Impact Assessment (LI. Torup Gas Deposit, Fehmarn Belt Link, Offshore Wind Farms). Marine fry production and participation in several aquaculture research projects. Development of ballast water control systems. <a href="http://www.fishlab.dk">www.fishlab.dk</a> .
<b>2005/2007</b>	National Institute for Food and Veterinary Research, DTU	Administrative coordinator EU projects, fund raising
<b>1996/2004</b>	Bio/consult as	Project leader. Environmental monitoring and Impact Assessment, marine fry production
<b>1994/1996</b>	Engell-Sørensen Consult	Aquaculture Consultancy. Environmental monitoring and marine fry production
<b>1993/1994</b>	Marselisborg Gymnasium	High school teacher of Biology
<b>1993</b>	AOF	Employed as a teacher of Nature, Environment and Computer Sciences
<b>1990/1992</b>	Maximus A/S	Biologist in the department of development of breeding of marine juvenile fish

## Education and intercalibration:

YEAR (FROM/TO)	INSTITUTION	DIPLOMA
2019, 2020	NMBAQC (NE Atlantic Marine Biological Analytical Quality Control Scheme), APEM Ltd., Att. David Hall	NMBAQC Scheme Ring Test. Ring Test Module – RT 57 and RT58 Benthic Invertebrate Component
2019	Institute of Bioscience, University of Aarhus, Denmark (AU), att. Thomas Cedhagen	Marine Fauna – collection and species determination
2018/2019	NMBAQC (NE Atlantic Marine Biological Analytical Quality Control Scheme), Marine Biological Association, The Laboratory, Citadel Hill, Plymouth, UK, att. Marianne Wootton.	Zooplankton Ring Test - zooplankton from the North Atlantic Ocean and adjacent waters.
2019	Hestelaboratoriet	Ringtest tapeworms 2019
2017, 2018, 2019	DTU - Technical University of Denmark	Ringtest in horse parasites 2017, 2018, 2019
2018	DTU Vet - Technical University of Denmark	Ring Test in horse parasites, May 2017, January 2018 and October 2018
2017	Institute of Bioscience, Aarhus University (DCE)	Intercalibration sediment sampling
2013/2014	Institute for Bioscience, Aarhus University (DCE)	Interkalibration soft bottom fauna 2013/14
2012	HELCOM.Department of Applied Environmental Science & Department of Systems Ecology, Stockholm University	HELCOM Intercalibration mesozooplankton
2010	IOC Science and Communication Centre on Harmful Algae, University of Copenhagen,	IOC Certificate of Proficiency in Identification of Harmful Marine Microalgae
2009	Switzer Safety services A/S, Esbjerg	STCW - Standards of Training, Certification and Watchkeeping for seafarers
1981/1990	University of Aarhus and Bergen University	Cand. Scient. Marine Biology and Aquaculture

## Selected projects:

YEAR (FROM/TO)	PROJECT
2012/ONGOING	Task for the national surveillance program for the aquatic environment and nature. Environmental surveillance of <b>mesozooplankton</b> from 9 different Danish waters (brackish water, coastal and open water marine locations). Sample processing (species, density and biomass determination). Data registration in Danmarks Miljøportal – STOQ. EU tender, Ministry of Environment. In collaboration with ZooplanktonID, Poul Seebach.
2018/ONGOING	<b>Production of worms containing protein and omega-3 fatty acids for fish feed.</b> Worms will be produced and tested by Fishlab as feed for fish in cooperation with Aller Aqua A/S, Venøsund Fisk og Skaldyr ApS, Maximus/Sashimi Royal and Aarhus University. The project is funded by the Danish Fisheries Agency.
2019/ONGOING	Restocking of turbot ( <i>Psetta maxima</i> ) as a tool to <b>combat the invasive round goby</b> ( <i>Neogobius melanostomus</i> ) in Guldborgsund with the purpose to restore local, coastal fisheries. Supported by Danish Fisheries Agencies. Project leader Copenhagen University.
2003/ONGOING	<b>Breeding of marine fish fry.</b> Various assignments for Nordvestjydsk Fritidsfiskerforening and Venøsund Fisk og Skaldyr ApS, DK regarding copepod production and fry production of European flounder ( <i>Platichthys flesus</i> ), turbot ( <i>Psetta maxima</i> ) and whitefish ( <i>Coregonus lavaretus</i> ).

2019-2020	Marine, bottom dwelling animals sample processing (sorting, biomass determination) for 31 samples from Mariagerfjord Vandværk A/S – Kattegat. The work was done for Orbicon/WSP.
2019	Marine, bottom dwelling animals sample processing (sorting, biomass determination) for 18 samples from Musholm A/S. The work was done for Orbicon/WSP.
2019	Task for the national surveillance program for the aquatic environment and nature. Environmental surveillance of lakes. <b>Vegetation analysis</b> of 14 lakes for Miljøstyrelsen Fyn and Miljøstyrelsen Sydjylland. EU tender, Ministry of Environment. In collaboration with Gaviadyk and Orbicon.
2019	Task for the national surveillance program for the aquatic environment and nature. <b>Eelgrass surveillance</b> of Danish coastal waters for Miljøstyrelsen Storstrøm and Miljøstyrelsen Midtjylland. EU tender, Ministry of Environment. In collaboration with Gaviadyk.
2019	Task for the national surveillance program for the aquatic environment and nature. Environmental surveillance of <b>marine, bottom dwelling animals</b> . Sample processing (sorting, biomass determination) and participation in data entry in Danmarks Miljøportal - WinRambi. Working with 14 marine stations for Miljøstyrelsen Fyn and Miljøstyrelsen Nordjylland. EU tender, Ministry of Environment. In collaboration with RUF Dykkerservice.
2018/2019	Task for the national surveillance program for the aquatic environment and nature. Environmental surveillance of <b>marine, bottom dwelling animals</b> . Sample processing (sorting, biomass determination) and participation in data entry in Danmarks Miljøportal - WinRambi. Working with 16 marine stations for Miljøstyrelsen Fyn, Miljøstyrelsen Midtjylland and Miljøstyrelsen Storstrøm. EU tender, Ministry of Environment. In collaboration with RUF Dykkerservice.
2018	Forming of the "Quality manual" (Kvalitetshåndbog) in accordance with DS/EN ISO/IEC 17025:2005 for the <b>accreditation of Fishlab/Hestelaboratoriet</b> .
2017	Environmental investigations of <b>macrophytes, epifauna, benthos</b> etc. at Disken in Øresund. 30 km of transects were investigated by divers. Fishlab for Rambøll Danmark A/S with the subcontractors RUF Dykkerservice and BioApp.
2017/ONGOING	BallastWISE. Automatic detection of live organisms, size fraction 10 - 50 µm and > 50 µm in <b>ballast water</b> samples. MicroWise Aps. Financed by Den Danske Maritime Fond and Markedsmodningsfonden. Coordinated by Bioras.
2014/2016	Project BallastWISE 10. Investigating analytic technology, easy to use and validated against current demands of analysis of treated <b>ballast water</b> for live organisms with a size from 10 to 50 micron. Financed by Programmet for Grøn teknologi 2013. Coordinated by Bioras. Fishlab administrative coordinator.
2013/2015	Project <b>Ballast Water Control System</b> (BallastWISE 50) - investigating analytic technology, easy to use and validated against current demands of analysis of treated ballast water for live organisms larger than 50 micron. Financed by Den Danske Maritime Fond. Coordinated by Bioras.
2016/2018	<b>Aquaculture of parasite free Oyster (<i>Ostrea edulis</i>)</b> from the Limfjord in closed cages. Financed by Ministry of Environment. Coordinated by Aquamind.
2013/2018	Project PROAQUA - <b>Reducing antibiotic use in marine larviculture</b> by a novel combinatory probiotic strategy. Financed by Danish Council for Strategic Research. Coordinated by DTU, Technical University.
2012/2016	GUDP project FISHGUARD on development of <b>software and video-based surveillance systems for aquaculture</b> . Naturerhvervstyrelsen, DK. Coordinated by Bioras
2012/2018	FP7 research project TARGETFISH involving novel antigens and expression systems for optimal vaccine presentation / uptake, analysis of protective immune mechanisms in efficient fish vaccines, <b>improvement of fish vaccines</b> , methods of mass delivery and field testing. Coordinated by Wageningen University.
2012/2017	Project HABFISH. <b>Harmful algae and Fish kills</b> . Financed by Danish Council for Strategic Research. Coordinated by Copenhagen University.
2011/2016	IMPAQ. "Improvement of Aquaculture High Quality Fish Fry Production. How to increase the reliability of <b>copepods as live prey</b> in Danish Fish Farms". Manipulation and surveillance of larvae productions, phyto- og mesozoo-plankton analysis (NOVANA standards). Danmarks Strategiske Forskningsråd. Coordinated by Roskilde University.

2015	Surveillance of <b>bottom dwelling animals</b> from 11 marine locations for the Ministry of Environment. Dataregistration: Naturdatabasen – WinRambi. Sample processing in corporation with RUF Dykkerservice.
2012/2014	Participation in national Environmental Surveillance Programmes for the Danish Ministry of Environment. EU tender. Surveillance of fish populations in 11 lakes. Dataregistration: Naturdatabasen – FiskSys Surveillance of freshwater vegetation of 5 lakes. Dataregistration: Naturdatabasen. Sampling of sediment for toxic substances and nutrients in 16 lakes. Analysis of bottom dwelling animal samples from Danish marine waters. Dataregistration: Naturdatabasen – WinRambi. Marine vegetation analysis. Registered in Naturdatabasen. In corporation with RUF Dykkerservice, Naturfocus, Fiskeøkologisk Laboratorium Fishlab project leader.
2011	EU tender 2011-047082. Surveillance of <b>marine bottomfauna</b> . In corporation with Naturfocus og RUF Dykkerservice. Naturstyrelsen Aarhus.Data and Quality Insurance of data, WinRambi, Danmarks Miljøportal.
2008/2013	<b>Baseline and EIA Fehmarnbelt tunnel</b> . Task manager on "Fish egg and fish larvae" in the scoping and baseline investigations of Fish and Fishery regarding the Fehmarnbelt Fixed Link project. Evaluation of fish spawning, spawning grounds and egg and larvae transport. Client: FeBEC/Orbicon, subcontractor for Fehmarn A/S.
2009/2017	<b>Baseline and pilot investigations LI. Torup Gasdeposit</b> . Subcontractor of EIA field investigations including hydrographic data, mesozooplankton and ichthyoplankton monitoring (NOVANA standards) in connection with expansion of LI. Torup Gasdeposit, Limfjorden, Denmark. Client: Rambøll Oil and Gas. Quality Insurance of data, STOQ, Danmarks Miljøportal. For reports see <a href="http://miljo-overvaagning-limfjorden.ramboll.dk/">http://miljo-overvaagning-limfjorden.ramboll.dk/</a>
2010/2012	Partner of a national project (Marine Vac) regarding vaccination strategies in marine aquaculture, Fishlab is involved in the <b>impact of toxic algae on fish</b> . Coordinated by DTU
2009/2015	Partner of Danish Fish Immunology Research Center & Network (DAFINET), Fishlab is involved in performing <b>trials on early vaccination of fish fry</b> . <a href="http://www.dafinet.dk/DAFINET/Home.html">http://www.dafinet.dk/DAFINET/Home.html</a> . Coordinated by Copenhagen University.
2005/2009	Administrative coordination of the European Commission Integrated Project "IMAQANIM", <b>Improved immunity of aquacultured animals</b> . Client and employer: National Institute for Food and Veterinary Research, DTU
2003/2008	Scientific and administrative coordinator of EC CRAFT project POCEFF ( <b>Production of copepods for Fish Farming</b> ).
2004/2008	<b>Turbot fry farming</b> . Extensive production of larvae of turbot ( <i>Psetta maxima</i> ), cod ( <i>Gadus morhua</i> ) and European flounder ( <i>Platichthys flesus</i> ). Client: Maximus A/S, DK
2005/2006	J/V Biofarming/Chuangheng Food Co., China. <b>Breeding of turbot larvae/turbot juveniles in Shandong Province</b> . Manuals, setup and training. Client: Biofarming.
2003/2004	Registration of Fish Stocks, <b>Eggs and Larvae around the Halldan-Oilfield</b> . Evaluation of fish spawning and spawning grounds. Expert (labwork and reporting) fish egg and larvae for Bio/consult as. Client: Maersk
2003/2004	Registration of Fish Stocks, <b>Eggs and Larvae around the Siri-Oilfield</b> . Evaluation of fish spawning and spawning grounds. Expert (labwork and reporting) fish egg and larvae for Bio/consult as. Client: DONG
2000/2003	<b>EIA Nysted Offshore Wind Farm and Omø Stålgunde</b> . Baseline and EIA studies of fish and fishery for an offshore wind farm. Evaluation of effect of noise from off-shore piledriving, sediment spill and electromagnetic fields on marine fish for Bio/consult as. Client: SEAS, DK.
1996/2001	Planktondynamics - fish eggs and larvae of Danish Fjords. Presence and terms of survival of marine fish eggs and larvae in 5 Danish fjords. Client: Various Danish Counties

## Selected publications:

- Embregts CWE, Reyes-Lopez F, Pall AC, Stratmann A, Tort L, Lorenzen N, Engell-Sorensen K, Wiegertjes GF, Forlenza M, Sunyer O, Parra D., 2019. *Pichia pastoris* yeast as a vehicle for oral vaccination of larval and adult teleosts. *Fish Shellfish Immunol.* 2019, vol. 85, p 52-60.
- Rørbo N, Rønneseth A, Kalatzis PG, Rasmussen BB, Engell-Sørensen K, Kleppen HP, Wergeland HI, Gram L, Middelboe M. Exploring the effect of phage therapy in preventing *Vibrio anguillarum* infections in cod and turbot larvae. *Antibiotics*, 2018 May 16;7(2). pii: E42. doi: 10.3390/antibiotics7020042.
- Engell-Sørensen K, Pall A, Damgaard C, Holmstrup M. Seasonal variation in the prevalence of equine tapeworms using coprological diagnosis during a seven-year period in Denmark. *VPRSR (Veterinary Parasitology: Regional Studies and Reports)* 2018, doi:10.1016/j.vprsr.2018.01.002.
- Eckford-Soper L, Nørremark LH, Engell-Sørensen K and Daugbjerg N., 2018. Comparison by light microscopy and qPCR of potentially ichthyotoxic microalgae in Danish on-shore lagoons producing European flounder (*Platichthys flesus*): Pros and cons of microscopical and molecular methods. *Harmful Algae News. An IOC Newsletter on Toxic Algae and Algal Blooms* No. 59 - February 2018, p 24-28.
- Rønneseth A, Castillo D, Álvise P; Tønnesen Ø; Haugland G; Grotkjær T; Engell-Sørensen K; Nørremark L; Bergh Ø; Wergeland HI; Gram L, 2017. Comparative assessment of *Vibrio virulence* in marine fish Larvae. *Journal of Fish Diseases.* Volume 40, Issue 10, October 2017, pages 1373–1385.
- Jepsen PM, Jakobsen HH, Rayner TA, Blanda E, Novac A, Engell-Sørensen K and Hansen BW, 2017. A production season of turbot larvae *Scophthalmus maximus* (Linnaeus, 1758) reared on copepods in a Danish semi-intensive outdoor system *Aquaculture Research.* Volume 48, Issue 9, September 2017, Pages 4958–4974.
- Jakobsen, HH, Jepsen, PM; Blanda, E Jørgensen, NOG; Novac, A; Engell-Sørensen, K; Hansen, BW, 2016. Plankton composition and biomass development: a seasonal study of a semi-intensive outdoor system for rearing of turbot. *Aquaculture Nutrition*, Vol. 22, Nr.6, 06.12.2016, s. 1239-1250.
- Andersen, NG; Hansen, PJ; Engell-Sørensen, K; Nørremark, LH; Andersen, P; Lorenzen, E; Lorenzen, N, 2015. Ichthyotoxicity of the microalgae *Pseudochattonella farcimen* under laboratory and field conditions in Danish waters. *Diseases of aquatic organisms*, volume 116, Number 3, pages 165-172.
- Engell-Sørensen, K; Leonhard, SB and Holmstrup, M, 2010. Acidic Lugol's solution as an effective fixative for marine fish eggs. *J. Appl. Ichthyol.* 28 (2012), 261–263.
- Engell-Sørensen, K; Andersen, A and Holmstrup, M, 2009. Preservation of the invasive ctenophore *Mnemiopsis leidyi* using acidic Lugol's solution. *Journal of Plankton Research* 31, 917-920.
- Sørensen, TF, Drillet, G, Engell-Sørensen, K, Hansen, BW & Ramløv, H, 2006: Production and composition of eggs from neritic calanoid copepods reared in large outdoor tanks. *Aquaculture* 263, 84-96.
- Holmstrup, M; Overgaard, J; Sørensen, TF; Drillet, G; Hansen, BW; Ramløv, H & Engell-Sørensen, K, 2006. Influence of storage conditions on viability of quiescent copepod eggs (*Acartia tonsa* Dana): effects of temperature, salinity and anoxia. *Aquaculture Research* 37, 625-631.
- Engell-Sørensen, K & Støttrup, JG, Holmstrup, M, 2004. Rearing of flounder (*Platichthys flesus*) juveniles in semi-extensive systems. *Aquaculture* 230, 475-491.
- Engell-Sørensen, K, 2011-2017. Monthly data reports of water quality, mesozoo- and ichthyoplankton and heavy metals in sampled mussels during baseline, pilot investigations and surveillance for LI. Torup Gas Deposit Enlargement. Fishlab for Rambøll Oil & Gas. For data and project reports see <http://miljoovervaagning-limfjorden.ramboll.dk/>
- FeBEC consortium, 2013. Fish Ecology in Fehmarnbelt. Baseline Report. Report no. E4TR0038 – Volume I. Fish and Fisheries. Subcontractor of Orbicon for Fehmarn A/S. <http://vymdokumentation.femern.dk/19.%20E4TR0038%20Vol%20I09bc.pdf?filename=files/BR/19.%20E4TR0038%20Vol%20I.pdf>.
- Engell-Sørensen, K, Hansen, IS Arenas, JA and Pedersen, J, 2011. Anvendelse af backtracking til bestemmelse af gyde- og klækningssområder for fisk. Præsentation på Dansk Havforskermøde 2011.
- Brünner, L; Engell-Sørensen, K; Klausstrup, M and Knudsen, F, 2003: Registration of Fish Communities and fish eggs around the Halfdan-Oil Field. Data reports and final Report (in Danish). Bio/consult as for Maersk Olie og Gas.
- Brünner, L; Engell-Sørensen, K; Klausstrup, M and Knudsen, F, 2003: Registration of Fish Stocks, Eggs and Larvae around the Siri-Oilfield. Data reports and final report. Bioconsult as for DONG A/S.
- Hvidt, CB, Engell-Sørensen, K and Klausstrup, M, 2003. Baseline study 2001, Fish, fry and commercial fishery Nysted offshore Wind Farm at Rødsand. Status report prepared by Bio/consult as, Doc. no. 2149-03-001.rev2.doc. SEAS Distributions A.m.b.A.
- Engell-Sørensen, K., 2002. Possible effect of the offshore wind farm at Vindeby on the outcome of fishing. Possible effects of electromagnetic fields and noise. SEAS, February 2002.
- Engell-Sørensen, K & Skyt, PH, 2002. Evaluation of the Effect of Sediment Spill from the Offshore Wind Farm Construction on Marine Fish. SEAS, DK.
- Engell-Sørensen, K & Skyt, PH, 2002. Evaluation of the Effect of Noise from Offshore Pile-Driving on Marine Fish. SEAS, DK.
- Engell-Sørensen, K & Andersen, K, 2002. Fish eggs, fish larvae and medusae in the Bight of Aarhus. Report (in Danish). Bio/consult as, DK.
- Engell-Sørensen, K, 2001. Fish eggs and fish larvae in Ringkøbing Fjord. Report (in Danish). Bio/consult as, DK.
- Engell-Sørensen, K; Andersen, P and Pedersen, J. Fish larvae and medusas of the Limfjord, Denmark year 1996 to 1999. Report (in Danish). Bio/consult as, DK for Limfjord-comity, 2001.