Name: Joseph Aizen **Date: July 2025**

CURRICULUM VITAE

1. Personal Details

Home Address: Kibbutz Ein-Shemer, M.P Hefer 38816, Israel.

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2. Higher Education

A. Undergraduate and Graduate Studies

Period of Study	Name of Institution and Department	Degree	Year of Approval of Degree
2005-2011	Hebrew University of Jerusalem, Department of Animal Sciences.	PhD	2011
2001-2005	Hebrew University of Jerusalem, Department of Animal Sciences and the National Center for Mariculture of Israel	MSc Agri	2005
1998-2001	Hebrew University of Jerusalem, Department of Animal Sciences.	BSc Agri	2001

B. Post-Doctoral Studies

Period of Study	Name of Institution, Department and Host	Degree	Year of Completion
2016	Weizmann Institute of Science, Israel. Department of Biological regulation, Prof. Karina Yaniv	PhD	2016
2013-2015	University of the Sunshine Coast, Australia. Faculty of Science, Health and Education. Dr. Tomer Ventura.	PhD	2015
2011-2013	The University of Texas at Austin, Marine Science Institute. Prof. Peter Thomas	PhD	2013

3. Academic Ranks and Tenure in Institutes of Higher Education

Dates	Name of Institution and Department	Rank/Position
2018- Present	Ruppin Academic Center, Michmoret	**Senior Lecturer**
2017-2018	Ruppin Academic Center, Michmoret	**Adjunct Lecturer**
2015- Present	University of the Sunshine Coast, Australia. Faculty of Science, Health and Education.	**Adjunct Research Fellow**

4. Offices in Academic Administration

Years	Name of Institution and Department	Role
2023-2025	Ruppin Academic Center, Faculty of Marine Sciences	Substitute acting Dean
2022 - Present	Ruppin Academic Center, Faculty of Marine Sciences	Head of the MSc Program in Marine Sciences
2021 – Present	Ruppin Academic Center, Faculty of Marine Sciences	Head of the BSc 3rd year Program in Marine Aquaculture
2020-2022	Ruppin Academic Center	Member of Discipline Committee - Prosecutor
2020-2022	Ruppin Academic Center	Member of Excellence Award Committee

5. Scholarly Positions and Activities outside the Institution

a. Membership in Academic Professional Associations Role:

2022 to Present - International Committee member of International Symposium on Fish Endocrinology (ISFE).

b. Reviewer for Refereed Journals:

2024 to Present - Reviewer for Discover Animals
2023 to Present - Reviewer for Biology of Reproduction
2022 to Present - Reviewer for Frontiers in Physiology Journal
2022 to Present - Reviewer for Endangered Species Research Journal
2022 to Present - Reviewer for Aquaculture Journal
2019 to Present - Reviewer for Molecular Reproduction and Development Journal
2019 to Present - Reviewer for Functional Genomics Journal
2017 to Present - Reviewer for Hydrobiologia Journal
2015 to present - Reviewer for Reproduction Journal

2015 to present - Reviewer for Journal of Endocrinology
2012 to present - Reviewer for General and Comparative Endocrinology Journal

c. Guest Editor/ Editor for Refereed Journal:

2023 to Present Review Editor on Editorial Board for Frontiers in Marine Sciences, Marine Fisheries, Aquaculture and Living Resources.
2021 to Present Reviewer and Editor for Frontiers in Cell and Developmental Biology Journal

d. Reviewer of Proposals for Grants:

2022 to Present Reviewer for Grant Proposals – ISF
2021 to Present Reviewer for Grant Proposals - BARD
2019 to Present Reviewer for Grant Proposals, Office of the Chief Scientist Ministry of Agriculture and Rural Development Israel

e. <u>Membership in Professional Associations</u>

2019- Present International Sea Turtle Society (ISTS)
2014- Present Crustacean Society
2011- Present SSR - Society for the Study of Reproduction
2008 - Present International Society for Fish Endocrinology (ISFE)

6. Participation in Scholarly Conferences

a. <u>Active Participation in Conferences Overseas</u>

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2025	Frontiers in Reproduction (FIR)	USA	Gonadotropins in fish, reptiles, and crustaceans what do we know?	**Lecture** (Invited)
2024	10th International Symposium on Fish Endocrinology (ISFE)	USA	Enhancement of sub-optimal reproductive performance of male Flounder broodstock using recombinant flounder EGF	**Lecture**
2024	10th International Symposium on Fish Endocrinology (ISFE)	USA	Development of tools for early sex change in the Australian Barramundi for establishing a reliable broodstock	Poster
2024	Frontiers in Reproduction (FIR)	USA	Gonadotropins in fish, reptiles, and crustaceans, Lessons from Recombinant Hormones	**Lecture** (Invited)
2023	46th Larval Fish Conference	Portugal	First steps in exploring deep-sea fish larval development in the eastern Mediterranean Sea	Poster

2023	10th International Crustaceans Conference	New Zealand	Male sexually biased expression of W- and Z-associated cytochrome P450-like gene in early sexual differentiation of the prawn Macrobrachium rosenbergii	**Lecture**
2022	Society for Integrative and Comparative (SICB)	USA	Genes encoding the glycoprotein hormone GPA2/GPB5 and its putative receptor LGR1 in a female prawn	**Lecture**
2022	7th Mediterranean Conference on Marine Turtles	Morocco	Plasma hormone levels and blood biochemistry in the green turtle *chelonia mydas* reared under captivity as a tool to predict mating and oviposition	**Lecture**
2022	7th Mediterranean Conference on Marine Turtles	Morocco	Development of specific enzyme-linked immunosorbent assay for determining FSH levels in green sea turtle (*chelonia mydas*), using recombinant gonadotropins.	Poster
2022	40th International Sea Turtle Symposium (ISTS)	Australia	Development of specific Enzyme-linked immunosorbent assay for determining FSH levels in green sea turtle (Chelonia mydas), using recombinant gonadotropin	Poster
2022	40th International Sea Turtle Symposium	Australia	Plasma Hormone levels in the Green Turtle Chelonia Mydas reared under captivity as a tool to predict mating and oviposition	**Lecture**
2022	25th Annual symposium of Frontiers in Reproduction (FIR)	USA	Genes encoding the glycoprotein hormone GPA2/GPB5 and its putative receptor LGR1 in a female prawn	**Lecture**
2022	14th International congress on biology of fish (ICBF)	France	Production of Precocious females via 17-estradiol Evac implants induction in the protandrous Barramundi (*Lates calcarifer*)	**Lecture**
2022	9th International Symposium on Fish Endocrinology (ISFE)	Portugal	Biotechnology in Aquaculture Lessons from Recombinant Hormones	**Lecture (State of the art) Invited**
2021	National virtual conference & Annual meet of Society for Biotechnologists	India	Catfish recombinant gonadotropin production to overcome future challenges of induced breeding	**Lecture**
2017	The Crustacean Society	Spain	Towards the identification of female gonad stimulating factor in crustaceans	**Lecture**
2017	The Crustacean Society	Spain	The evolution of insulin endocrinology: insights from the decapod crustacean Sagmariasus verreauxi	Poster

2017	20th Annual symposium of Frontiers in Reproduction (FIR)	USA	Biologically active recombinant carp LH as a spawning inducing agent for Carp the new age in fish ART	**Lecture**
2016	Society for Integrative and Comparative Biology (SICB)	USA	Understanding a crustacean's masculinity: Transcriptomics of the Eastern rock lobster	**Lecture**
2015	Foshee Faculty Day Symposium	Australia	Using membrane receptors to beat breast cancer	**Lecture**
2015	The Crustacean Society	Australia	Towards developing new techniques for monosex population culture in crustaceans	**Lecture**
2015	The Crustacean Society	Australia	Closing the gaps in the male sexual development pathway of the Eastern spiny lobster, Sagmariasus verreauxi	Poster
2014	WAS- World Aquaculture Society	Australia	Discovery of a novel Insulin-Like Peptide (Sv-ILP1) and Insulin binding proteins in the eastern rock lobster Sagmariasus verreauxi	Poster
2014	10th International Symposium on Reproductive Physiology of Fish	Portugal	Application of recombinant DNA and oral delivery technologies to manipulate fish reproduction in aquaculture	Poster
2014	Acquaculture Europe	Spain	Recombinant luteinizing hormone succeeded to induce spawning induction in carp	**Lecture**
2014	17th Annual symposium of Frontiers in Reproduction (FIR)	USA	Role of Progesterone Receptor Membrane Component 1 (PGRMC1) in Oocyte Maturation in Zebrafish, Danio rerio.	**Lecture**
2013	10th International Marine Biotechnology Conference	Australia	Characterization of recombinant gonadotropins activity and their receptors in the Common Carp	Poster
2013	WAS- World Aquaculture Society	USA	Mechanism of Progestin Upregulation of Sperm Motility and Fertility in Southern Flounder and Atlantic Croaker	**Lecture**
2013	40th SACNAS **s**ymposium	USA	Site of Insulin Growth Factor action to induce oocyte maturation in Zebrafish	Poster
2013	Perspectives in Endocrinology of Cichlids workshop	Israel	Tilapia Gonadotropins Past Experience and Prospective	**Lecture**
2012	15th Annual symposium of	USA	Experimental and computational study of inter- and intra- species specificity of	**Lecture**

	Frontiers in Reproduction (FIR)		gonadotropins for various gonadotropin receptors	
2012	45th SSR Annual Meeting and 18th Ovarian Workshop	USA	Southern Flounder Spawning Success Is Dependent on High Sperm Motility and Abundant Membrane Progestin Receptor-Alpha Expression on the Sperm Plasma Membrane	Poster
2008	6th International Symposium on Fish Endocrinology (ISFE)	Canada	Receptor Functional Specificity of Tilapia Gonadotropins	Poster
2007	8th International Symposium on Reproductive Physiology of Fish (ISRPF)	France	Effect of immunoneutralazation of FSH and LH on GnRH-stimulated tilapia	Poster
2007	8th International Marine Biotechnology Conference	Israel	Production and validation of biologically active tethered tilapia FSH, LH and GH	**Lecture**
2006	23rd Conference of European Comparative Endocrinologists (CECE)	UK	Production and validation of biologically active tethered tilapia FSH and LH	**Lecture**
2004	5th International Symposium on Fish Endocrinolgy (ISFE)	Spain	The Effect of Hormonal Treatment on Gonadal Development and Spawning in the grey mullet (*Mugil cephalus*)	**Lecture**
2003	7th International Symposium on Reproductive Physiology of Fish (ISRFP)	Japan	Cloning and pharmacological characterization of the inhibitory dopamine receptor from the pituitary of two perciform fish: tilapia and grey mullet	**Lecture**

a1. <u>Active Participation in Conferences In Israel</u>

Date	**Name of Conference**	**Place of Conference**	**Subject of Lecture/Discussion**	**Role**
2024	60th Israel Zoological conference	Israel	Nesting prediction of the green sea turtle (*Chelonia mydas*) in the years 2023-2024	Poster
2024	18th conference of the Israeli	Israel	First steps in exploring deep-sea fish larval development in the eastern Mediterranean Sea	Poster

	Association for Aquatic Sciences			
2024	18th conference of the Israeli Association for Aquatic Sciences	Israel	Assessing fish recruitment in the eastern mediterranean sea using Standard Monitoring Units for Recruitment of Fish (SMURF)	Poster
2022	50th Annual Conference on Science and Environment	Israel	The effect of marine lightning on fish stress responses in fish cages in the open sea	Poster
2022	The Israeli Geographical Association conference	Israel	The effect of lightning storms on the fish cages in the Michmoret	**Lecture**
2022	59th Israel Zoological conference	Israel	Development of specific enzyme-linked immunosorbent assay for determining FSH levels in green sea turtle (*chelonia mydas*), using recombinant gonadotropins.	Poster
2021	Establishment of a research development and innovation cluster in marine aquaculture	Israel	The Barramundi as a fish model for hermaphrodite fishes.	**Lecture**
2019	Trilateral Mariculture Workshop Israel - Greece - Cyprus	Israel	A panel member discussion on potential collaboration in Marine Aquaculture topics.	Panelist
2011	2nd Agricultural Faculty Day Symposium for Excellent Doctoral Students	Israel	From genes to spawning induction in carps	**Lecture**
2011	2nd Symposium on nutrigenomics and functional foods	Israel	Experimental and computational study of the functional specificity of gonadotropins to various gonadotropins receptors	Poster
2010	11th Dan Poper Annual Symposium	Israel	The functional specificity of recombinant gonadotropins to various gonadotropin receptors	**Lecture**
2006	10th Dan Poper Annual Symposium	Israel	Production and validation of biologically active tethered tilapia FSH and LH	Lecture
2004	8th Dan Poper Annual Symposium	Israel	Effect of hormonal treatment on gonadal development and spawning in the grey mullet (*Mugil cephalus*)	Lecture
2002	3rd International Symposium on Signal	Israel	Identification and characterization of two GnRH receptors and the inhibitory	Lecture

	Transduction in Health and Disease (STADY)		dopamine receptor from the pituitary of teleost fish	

b. Organization of Conferences or Sessions

None

7. Invited Lectures\ Colloquium Talks

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2022	9th International Symposium on Fish Endocrinology (ISFE)	Portugal	Biotechnology in Aquaculture Lessons from Recombinant Hormones	**Lecture (State of the art)**

8. Research Grants

a. Grants Awarded

Role in Research	Co-Researchers	Topic	Funded by/Amount	Year
PI	Prof. Rex Dunham (co-PI) Prof. Berta Levavi-Sivan (Collaborate)	Old and novel strategies for the improvement of induced spawning in catfish	BARD Pioneer/ $600,000*	2025
Academic Expert (co-PI)	Prof. Berta Levavi-Sivan (PI), Dr. Christoph Winkler (PI)	Singapore Aquaculture Solution Center SAS-C	Singapore/ $19,750,000*	2024
PI	Prof. Berta Levavi-Sivan	Development of tools for early sex change in the Australian Barramundi Lates calcarifer as a tool for establishing a reliable brood-stock	The Office of the Chief Scientist Ministry of Agriculture and Rural Development/ 570,000 NIS*	2022

PI	Prof. Yaron Tikochinski (PI)	Conservation of the Israeli Green Sea Turtle Population (Re-submission)	ISF/ 1,080,000 NIS*	2021
PI	Prof. Peter Thomas(co-PI)	EGF/EGFR signaling in the southern flounder male reproductive system and its role in regulating sperm motility and fertility	BARD / $310,000*	2020
PI	Dr. Jacob Silverman, Dr. Mustafa Asfur, Prof. Colin Price, Prof. Yoav Yair	The effect of lightning generated underwater acoustic noise on offshore mariculture in Israeli Mediterranean shelf waters	Department of Energy / 500,000 NIS*	2020
PI	Dr. Tomer Ventura, Prof. Abigail Elizur	Generating monosex populations through gene silencing in the redclaw yabby Cherax quadricarinatus. (22)	USC URG grant/ $13,170	2014
PI	N/A	Biological role of PGMRC1 in final maturation of fish oocytes (10,13,21)	The Vaadia-BARD Fellowship Grant/ $90,000	2011-2013

b. Submission of Research Proposals – Pending

None

c. Submission of Research Proposals - Not Funded

Role in Research	Co-Researchers	Topic	Funded by	Year
PI	Prof. Ian Butts (co-PI)	Production of Blue Catfish Recombinant Gonadotropin Hormones for Spawning Induction in Aquaculture	BARD	2023
PI	Prof. Berta Levavi-Sivan (co-PI)	Development of tools for early sex change in the Australian Barramundi *Lates calcarifer* as a tool for establishing a reliable brood-stock	The Office of the Chief Scientist Ministry of Agriculture and Rural Development	2020
PI	Prof. Yaron Tikochinski (PI)	Conservation of the Israeli Green Sea Turtle Population	ISF – Israel Science Foundation	2019
PI	Dr. Tal Shomrat (PI)	Octopus senescence: a novel model for aging research	ISF – Israel Science Foundation – BICURA	2019

	Dr. Nir Nesher (PI)			

9. Scholarships, Awards and Prizes

2019 - 2024 - Research and Teaching Excellency Award, Faculty of Marine Sciences, Ruppin Academic Center

2017 – Figure 2 from the paper "Biologically active recombinant carp LH as a spawning inducing agent for Carp" **was chosen for November front cover of Journal of Endocrinology**.

2016 - Dean of Faculty Fellowship for PostDocs, Weizmann Institute of Science – 30,000$.

2015 – The presentation "Using membrane receptors to beat breast cancer" was chosen as a winner presentation in University of the Sunshine coast, Australia, Minute to Win It competition – 1,000$

2012 – Marine Science Institute, The University of Texas at Austin, Travel Fund for Postdoc award – 650$.

2012 - The Paper" Steroidogenic Response of Carp Ovaries to Piscine FSH and LH Depends on the Reproductive Phase." **Was Chosen for Top 25 Hottest articles in General and Comparative Endocrinology April - June 2012.**

2012 - Anita Payne Scholarship from SSR to the 2012 Frontiers in Reproduction (FIR) Course at the Marine Biological Laboratory in Woods Hole, MA – 5,000$.

2011 – 2013 The Vaadia-BARD Fellowship Grant for Post-Doctoral Young Scientists, "Biological role of PGMRC1 in final maturation of fish oocytes". 90,000$

10. Teaching

a. Courses Taught in Recent Years

Year	Name of Course	Type of Course Lecture/Seminar/Workshop/High Learn Course/Introduction Course (Mandatory)	Degree	Number of Students
2024-Present	Introduction in RAS technology	Introduction in RAS technology Ruppin Academic Center, Michmoret	BSc	20/year
2022-Present	Fish Reproduction	Fish Reproduction Ruppin Academic Center, Michmoret	BSc	25/year
2021-Present	Fish Physiology	Fish Physiology Ruppin Academic Center, Michmoret	BSc	25-43/year
2021-Present	Larval Production in Aquaculture	Larval Production in Aquaculture Ruppin Academic Center, Michmoret	BSc	15/year

2018-Present	Genomics and Proteomics in Marine sciences	Genomic and proteomics in Marine sciences Ruppin Academic Center, Michmoret	MSc	6-14/year
2018-Present	Heredity and Selection in aquaculture	Heredity and Selection in aquaculture Ruppin Academic Center, Michmoret	MSc	6-11/year
2017-Present	Introduction to Mariculture and Aquaculture 70-302-0	Introduction to Mariculture and Aquaculture Ruppin Academic Center, Michmoret	BSc	81-124/year
2017-Present	Marine Biotechnology 70-422-0	Senior Lecture – fish reproduction and aquaculture biotechnology, and course organization Ruppin Academic Center, Michmoret	BSc	34-73/year
2017-Present	Seminar 70-319-3	Seminar for B.A. students Ruppin Academic Center, Michmoret	BSc	5/year
2017-Present	Lab Project 70-325-1	Lab Project for B.A students. Ruppin Academic Center, Michmoret	BSc	10/year
2017-Present	Basic processes in biotechnology 70-235-0	Basic processes in biotechnology Ruppin Academic Center, Michmoret	BSc	35-65/year
2014-2015	Aquaculture - ENS371	Aquaculture Introduction Course for undergraduate program, University of the Sunshine Coast, Australia	BSc	50/year
2012-Present	Frontiers in Reproduction	Six weeks workshop in reproduction, at the Marine Biological Laboratory in Woods Hole, MA. USA	PhD, Post-doc, Senior lecturer	20/year
2012-2013	Physiology of Fishes - MNS 355C	Fish Physiology Introduction Course for undergraduate program, Marine Science Institute, The University of Texas at Austin	BSc	20/year
2010	Aquaculture Production & Management on Breeding Technologies for Cyprinid Fish Indigenous to Uganda and Africa	Introduction Course – International students.	MSc, PhD	30/year

2009-2011	Aquaculture	Introduction Course for Agrostudies, International Center for Agricultural interns	M.A	70/ year
2009-2011	Fish Reproduction	Introduction Course Agrostudies, International Center for Agricultural interns	M.A	70/year

b. <u>Supervision of Graduate Students</u>

b1. <u>PhD Students</u>

Name of Student	**Title of Thesis**	**Degree**	**Date of Completion/in Progress**	**Students` Achievements**
Melody Wahl	Glycoprotein hormone GPA2/GPB5 and its receptor LGR1 in giant freshwater prawn *Macrobrachiun rosenbergii*	PhD	2025 Completion	As planned Co supervision with Prof. Amir Sagi BGU. Manuscript (5, F1 in ref list)

b2. <u>MSc Students</u>

Name of Student	**Title of Thesis**	**Degree**	**Date of Completion/in Progress**	**Students` Achievements**
Saar Ariav	Introduction of *Siniperca Chuatsi* to Israeli Aquaculture	M.Sc.	2025 in Progress	Started 10-23
Hadar Sonis	Integrated Multitrophic Aquaculture systems	M.Sc.	2025 in Progress	Started 10-23
Gal Waisman	SMURF – Standard Monitoring Units for the Recruitment of Fishes	M.Sc.	2025 in Progress	Started 10-23
Netta Ragovski	Use of mesocosms in larval rearing of Groupers and Barramundi fishes	M.Sc.	2025 in Progress	Started 10-23
Revital Zamsky	Chelonia Mydas reproduction	M.Sc.	2025 in Progress	As planned
Sagi Otorgust	Growth and developmental stages of Levantine Basin fish larvae	M.Sc.	2025 Completion	Manuscript in preparation
Amitai Smira	early sex change in the Australian Barramundi Lates calcarifer as a tool for establishing a reliable brood-stock and ELISA development	M.Sc.	2025 Completion	Manuscript in preparation

Roye Lavie	The effect of lightning generated underwater acoustic noise on offshore mariculture in Israeli Mediterranean shelf waters	M.Sc.	2023 Completion	Manuscript in preparation
Rotem Sade	Developing tools to assess natural habitat nature reserves index	M.Sc.	2023 Completion	
Osher Sofer	Chelonia Mydas reproduction and ELISA development	M.Sc.	2023 Completion	Manuscript (2, 4 in ref list)
Shoham Zuntz	EGF/EGFR signaling in the southern flounder male reproductive system and its role in regulating sperm motility and fertility	M.Sc.	2023 Completion	Manuscript submitted
Ad Idan	Development of tools for early sex change in the Australian Barramundi *Lates calcarifer* as a tool for establishing a reliable brood-stock	M.Sc.	2022 Completion	Manuscript (1 ref list)
Noy Reuveni	*Light effect on Bioactivity of red macroalgae Gracilaria conferta*	M.Sc.	2022 Completion	
Olga Rubin	Development of an enzyme-linked immunosorbent assay to measure FSH levels in Chelonia Mydas, and characterization of annual steroidal profile	M.Sc.	2021 Completion	Manuscript (2,4 in ref list)
Melody Wahl	Glycoprotein hormone GPA2/GPB5 and its receptor LGR1 in giant freshwater prawn *Macrobrachiun rosenbergii*	M.Sc.	2020 Completion	Manuscript (6 in ref list)

11. Miscellaneous

None

12. Professional Experience

2024 - Present - Head of Board of Directors of Kibbutz Ein-Shemer
2019 - 2024 - Member of the Board of Directors of Kibbutz Ein-Shemer.
2003-2007 - Director in MiniPlast - Laboratory Plasticware Supplies, Kibbutz Ein-Shemer.

PUBLICATIONS

A. PhD Dissertation

Production, biochemical analysis and role of Gonadotropins in model fishes, 2011, 110p, English, submitted to the Hebrew University of Jerusalem. Supervisor: Prof. Berta-Levavi Sivan. Parts of the dissertation was published in 7,11,20 refs.

B. Scientific Books (Refereed)

None

Articles in Refereed Journals

Published

IF (according to JCR Journal Citation Reports), **Q** (Quartile according to SJR (Scimago Journal Ranking), **C** (Citations number web of science)

1. * Fine - Idan, A, Levavi-Sivan, B. and **Aizen, J. 2024**. Induction of precocious females in the protandrous barramundi (Lates calcarifer) with estradiol long-acting implants, *Aquaculture International, section Aquatic Science*. Volume: 32, Issue: 4, Page: 4581-4596, **(IF=*2.2*). Q2. C(1).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript, Fine-Idan was MSc. student under my supervision.
2. * Soffer, O. Rubin, O. Levy, Y. and **Aizen, J. 2023**. Development of a specific enzyme-linked immunosorbent assay for determining FSH levels in green sea turtle (*Chelonia mydas*), using recombinant gonadotropins. *Frontiers in Marine Sciences, section Marine Conservation and Sustainability*, Volume: 10, **(IF=*2.8*). Q1. C(0).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript, Rubin and Soffer were MSc. student under my supervision.
3. * **Aizen, J**. Sharma, S. Elizur, A. Joy, K.P. and Chaube, R. **2023** Regulation of steroid production and key genes in catfish *Heteropneustes fossilis* using recombinant gonadotropins, *Fish Physiology and Biochemistry, section Aquatic Science*, Volume: 49, Issue: 5, Page: 911-923. **(IF=*2.5*). Q1. C(0).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
4. * Rubin, O. Soffer, O. Levy, Y. and **Aizen, J. 2023.** Plasma Hormone levels in the Green Turtle *Chelonia Mydas* reared under captivity as a tool to predict mating and oviposition: *Frontiers in Marine Sciences, section Marine Conservation and Sustainability*, Volume: 10, **(IF=*2.8*). Q1. C(2).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript, Rubin and Soffer were MSc. student under my supervision.

5. * Omony, J. B., Biran J., Kahwa D., **Aizen J.**, M. Golan, E. Nyatia, B. Levavi-Sivan and J. Rutaisire **2022**. Cloning of gonadotropin Gph-alpha, FSH-beta and LH-beta subunits and seasonal profiles of steroid hormones in wild-caught Nile perch, Lates niloticus. *General and Comparative Endocrinology, section Animal Science and Zoology,* Volume: 323-324, Page: 114035. **(IF=*2.1*). Q1. C(3).**
   Contribution: literature review, planned parts of the study, conducted parts of the study, collected the data, analyzed the data, participated in manuscript writing.
6. * Wahl, M., T. Levy, R. Manor, E. D. Aflalo, Sagi A. and **Aizen J**. **2022** Genes Encoding the Glycoprotein Hormone GPA2/GPB5 and the Receptor LGR1 in a Female Prawn. *Frontiers in Endocrinology, section Reproduction,* Volume: 13, **(IF=*3.9*). Q1. C(5).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript, Wahl is a PhD student under my supervision.
7. * Smith, MK. Dinh Chieu, H. **Aizen, J**. Mos, B. Motti, CA. Elizur, A and Cummins, SF. **2019** A Crown-of-Thorns Seastar recombinant relaxin-like gonad-stimulating peptide triggers oocyte maturation and ovulation. *General and Comparative Endocrinology*, *section Animal Science and Zoology,* Volume: 281, Page: 41–48**. (IF=*2.1*). Q1**. **C(10).**
   Contribution: literature review, planned parts of the study, conducted parts of the study, collected the data, analyzed the data, participated in manuscript writing.
8. * Rotllant, G. Nguyen, TV **Aizen, J.** Suwansa-ard, S. and Ventura, T. **2018** Towards the identification of female gonad stimulating factor in crustaceans. *Hydrobiologia, section Aquatic Science*, Volume: 825, Issue: 1, Page: 91–119. **(IF=*2.2*). Q1**. **C(25).**
   Contribution: literature review, analyzed the data, participated in manuscript writing.
9. * **Aizen, J.** Harris, C. Pang, Y. Zhu, Y, Aguirre, MA and Thomas, P. **2018**. Roles of progesterone receptor membrane component 1 and membrane progestin receptor alpha in regulation of zebrafish oocyte maturation. *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 263 Page: 51–61. **(IF=*2.1*). Q1**. **C(29).**
   Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
10. * Cohen-Hollander, L. Golan, M. **Aizen, J.** Shpilman, M. and Berta Levavi-Sivan, B. **2018** Characterization of Carp Gonadotropins: Structure, Annual Profile, and Pituitary Topographic Organization. *General and Comparative Endocrinology, section Animal Science and Zoology*, Volume: 264 Page: 28–38. **(IF=*2.1*). Q1**. **C(23).**
    Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, participated in manuscript writing.

---------- **Publications before last promotion (13.6.2018)** ----------

11. **Aizen, J.** Hollander, L. Shpilman, M. and Levavi-Sivan B. **2017**. Biologically active recombinant carp LH as a spawning inducing agent for Carp. *Journal of Endocrinology***,** *section Endocrinology***,** Volume: 232, Issue: 3, Page: 391–402. **(IF=*3.4*). Q1**. **C(28).**
    Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.

12. Yom-Din, S. Hollander-Cohen, L. **Aizen, J**. Boehm, B. Shpilman, M., Golan, M. Hurvitz A. Degani, G. and Levavi-Sivan B. **2016**. Gonadotropins in the Russian sturgeon: their role in steroid secretion and the effect hormonal treatment on their secretion. *PLos One*, Volume: 11, Issue: 9, Page: 1-23. **(IF=*2.9*). Q1. C(29).**
Contribution: literature review, planned parts of the study, conducted parts of the study, collected the data, analyzed the data, participated in manuscript writing.
13. Chandler, J.C. **Aizen, J.** Fitzgibbon, Q. Elizur, A. and Ventura, T. **2016**. Applying the power of transcriptomics: Understanding male sexual development in decapod. *Integrative and Comparative Biology*, *section Animal Science and Zoology*, Volume: 56, Issue: 6, Page: 1144–1156. **(IF=*2.2*). Q1**. **C(33).**
Contribution: literature review, conducted the study, collected the data, analyzed the data, wrote the manuscript.
14. Sanchís-Benlloch, PJ. Nocillado, J. Ladisa, C. **Aizen J**, Miller, A. Shpilman, M. Levavi-Sivan, B. Ventura, T. and Elizur, A. **2017**. In-vitro and in-vivo biological activity of recombinant yellowtail kingfish (Seriola lalandi) follicle stimulating hormone. *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 241, Page: 41-49. **(IF=*2.1*). Q1. C(41).**
Contribution: literature review, planned parts of the study, conducted parts of the study, collected the data, analyzed the data, participated in manuscript writing.
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Contribution: literature review, conducted the study, collected the data, analyzed the data, wrote the manuscript.
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Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
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Contribution: conducted the study, analyzed the data, participated in manuscript preparation.
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Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
19. Chandler, J.C. **Aizen, J.** Elizur, A. Hollander-Cohen, L. Battaglene, S. and Ventura, T. **2015**. Discovery of a novel insulin-like peptide and insulin binding proteins in the Eastern

rock lobster Sagmariasus verreauxi. *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 215, Page: 76–87. **(IF=*2.1*). Q1 C(61).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.

20. **Aizen, J.** Kowalsman, N. Niv, MY. Levavi-Sivan, B. **2014**. Characterization of tilapia (Oreochromis niloticus) gonadotropins by modeling and immunoneutralization. *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 207, Page: 28-33. **(IF=*2.1*). Q1**. **C(3).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
21. Tan, W. **Aizen, J.** and Thomas, P. **2014.** Membrane progestin receptor-alpha mediates progestin-induced sperm hypermotility and increased fertilization success in southern flounder (Paralichthys lethostigma). *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 200, Page: 18-26. **(IF=*2.1*). Q1**. **C(19).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
22. Damasceno-Oliveiraab, A. Levavi-Sivan, B. Aizen, J. Gonçalvesab, J. Fernández-Duránab, B. and Coimbraab, J. **2014**. Pituitary follicle-stimulating hormone (FSH) and luteinizing hormone (LH) levels in maturing female flounder Platichthys flesus under hydrostatic pressure simulating vertical migrations. *Marine Biology Research*, *section Aquatic Science*, Volume: 10, Issue: 1, Page: 85–92. **(IF=1). Q3**. **C(2).**
Contribution: literature review, conducted the study, analyzed the data, participated in manuscript preparation.
23. Tan, W., **Aizen, J.**, and Thomas, P. 2012. Southern Flounder spawning success is dependent on high sperm motility and abundant membrane progestin receptor-alpha expression on the sperm plasma membrane. *Biology of Reproduction, section Medicine,* Volume: 87, Issue: Supplement 1, Page: 453-453. **(IF=3.1)**. **Q1. C(16).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
24. **Aizen, J.** Kowalsman, N. Kobayashi, M. Hollander, L. Sohn, YC. Yoshizaki, G. Niv, M. and Berta Levavi-Sivan**. 2012.** Experimental and computational study of inter- and intra-species specificity of gonadotropins for various gonadotropin receptors. *Molecular and Cellular Endocrinology*, *section Endocrinology*, Volume:364, Issue: 1-2, Page: 89-100. **(IF=3.8). Q2. C(29).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
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Contribution: literature review, wrote parts of the manuscript.
26. Levavi-Sivan, B. Golan, M. **Aizen, J.** and Elizur A. **2008.** Fish recombinant gonadotropins, *CYBIUM, International Journal of Ichthyology*, Volume:32, Issue: 2, Page: 17-21. **(IF=*0.5*). Q4. C(12).**

Contribution: literature review, study planning, data analysis, participated in manuscript preparation.

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Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
28. **Aizen, J**. Kasuto, H. Golan, M. Zakay, H. and Levavi-Sivan., B.**2007** Tilapia follicle-stimulating hormone (FSH): Immunochemistry, stimulation by gonadotropin-releasing hormone, and effect of biologically active recombinant FSH on steroid secretion, *Biology of Reproduction*, *section Medicine*, Volume: 76, Page: 692–700. **(IF=*3.1*). Q1. C(93).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript.
29. Levavi-Sivan, B. **Aizen, J**. and Avitan A., **2005**. Cloning, characterization and expression of the D2 dopamine receptor from the pituitary of tilapia, *Molecular and Cellular Endocrinology*, section Endocrinology, Volume: 236, Issue: 1-2, Page: 17-30. **(IF=*3.8*)**. **Q2. C(41).**
Contribution: literature review, study planning, data analysis, participated in manuscript preparation.
30. **Aizen, J.** Meiri, I. Tzchori, I. Levavi-Sivan, B. and Rosenfeld, H., **2005**. Enhancing spawning in the grey mullet (*Mugil cephalus*) by removal of dopaminergic inhibition, *General and Comparative Endocrinology*, *section Animal Science and Zoology*, Volume: 142, Issue: 1-2, Page: 212-221**. (IF=*2.1*). Q1**. **C(88).**
Contribution: literature review, planned the study, conducted the study, collected the data, analyzed the data, participated in manuscript preparation.

Submitted, under revision:

31. **Aizen, J.** Zuntz, S. Convernce, A. Matkin, C. Bennett,T. and Thomas, P. **2025**. Stimulation of southern flounder sperm motility and fertility with recombinant flounder epidermal growth factor (Egf) towards the end of the reproductive season when sperm Egf expression is low. *Frontiers in Marine Sciences, Reproductive Biology of Commercially Important Marine Fish Species*.

C. Other Scientific Publications:
None

D. Articles in Refereed Journals
None

E. Articles or Chapters in Scientific Books (which are not Conference Proceedings)
None

F. <u>Articles in Conference Proceedings</u>

1. * Wahl, M., T. Levy, R. Manor, E. D. Aflalo, Sagi A. and **Aizen J**. **2023** Genes Encoding the Glycoprotein Hormone GPA2/GPB5 and the Receptor LGR1 in a Female Prawn. Integrative and Comparative Biology. 62: S321-S322. (IF=*2.2*) **Q1.**

<u>Contribution:</u> literature review, planned the study, conducted the study, collected the data, analyzed the data, wrote the manuscript, Wahl is a PhD student under my supervision.

---------- **Publications before last promotion (13.6.2018)** ----------

2. Chandler, J. C. **Aizen, J**. Elizur, A. S. C. Battaglene and T. Ventura **2016**. Understanding a crustacean's masculinity: Transcriptomics of the Eastern rock lobster. Integrative and Comparative Biology 56: E34. (IF=*2.2*) **Q1**.

<u>Contribution:</u> conducted the study, collected the data, analyzed the data, wrote parts the manuscript.

G. <u>Entries in Encyclopedias</u>

None

H. <u>Other Scientific Publications</u>

None

I. <u>Other Publications</u>

None

J. <u>Other Works Connected with my Scholarly Field</u>

None

K. <u>Submitted Publications</u>

None

L. Summary of my Activities and Future Plans

Summary of my Activities

I study fish and crustacean reproduction, focusing mainly on comparative endocrinology and developing biotechnology tools for Aquaculture reproduction protocols. In Israel I work on species that need more development such as Carps, Tilapia, and the Australian Barramundi. I also work with overseas partners from Australia, USA and Singapore on flatfish, catfish, crayfish, and the spiny lobster. In recent years I'm also involved in the green sea turtle genetics and reproduction project. Recently I have started a revolutionary project that aims to learn about the effect of lighting on aquaculture sea cages. In the last 20 years I have been working with aquaculture species, developing, and implementing novel tools in the field of reproductive technologies of aquaculture species.

Since joining the Faculty of Marine Sciences in Ruppin academic center I have been a lecturer and a researcher teaching biotechnology and marine aquaculture courses, my research is internationally recognized mainly in the field of fish reproduction and recently in sea turtles' conservation efforts.

Main activities 2002-2016

In my first academic study, as a part of my M.Sc. study in the Department of Animal Sciences at the Hebrew University, joined with the national center of mariculture in Eilat, I worked on the grey mullet (*Mugil cephalus)* reproduction. I was able to artificially accelerate growth of the ovaries and achieve successful spawning. We found that in mullets there is a significant inhibition of dopamine preventing the secretion of gonadotropins. The use of dopamine antagonists helped to accelerate and develop the ovaries and led to a new protocol for spawning induction of grey mullet in Israel and worldwide that have been used ever since in aquaculture. (*publications:1,2*)

I continued to my PhD focusing on the production, biochemical analysis, and role of gonadotropins in model fishes. I characterized the recombinant tilapia FSH protein and developed an ELISA for the measurement of FSH and LH in tilapia. The availability of rtFSH in sufficient quantity enabled us to better define its physiological role and its hypothalamic control (i.e we showed for the first time in synchronic fish that GnRH can elevate the FSH levels). The second part of my work involved production of the active protein of carp LH. To induce spawning of edible and ornamental carps and promote agricultural research in fish reproduction. I characterized the carp LH protein and developed an ELISA for carp LH along with a gonadotropin receptor assay that enabled me to determine the potency of the different cLHs. The rcLH was also tested in an *in vivo* assay. The ability of the recombinant LH to elicit a biological response was examined by stimulation of Estradiol (E2) and maturation inducing hormone DHP secretion, and by its success to induce ovulation and spawning. The *in vivo* tests enhanced both E2 and DHP secretion in a dose-dependent manner, in a manner like carp pituitary extract and we recorded actual spawning in the high dose treatments. (*publications:3-8, 10,21,22*)

My first Postdoctoral studies focused on the biological role of PGRMC1 in final maturation of fish oocytes. I worked on zebrafish and the southern flounder. My major research question addressed the cellular

mechanisms and novel factors regulating the mPRα and PGRMC1. I have also worked on PGRMC1 involvement in Breast Cancer cells and its hypothesized role with membrane receptors. (*publications:11,14,23*). My second Postdoctoral studies focused on crustacean's sex change and lobster reproduction, a work that combined the production of recombinant proteins, receptor activation and transcriptomic analysis. I combined different fields of reproduction in fish, crustaceans, crown of thorns sea star and sea cucumber. (*publications: 13, 15, 17-18, 24-25*)

Main activities after last rank (Senior Lecturer - June 2018) and future plans.

Since I joined the Faculty of Marine Sciences at the Ruppin Academic Center, I'm acting as the of head of the Marine Aquaculture program for the Marine Biotechnology B.Sc. program, head of M.Sc. program in Marine Sciences, and recently as the substitute acting Dean of the Faculty. I'm teaching courses in both in B.Sc. and M.Sc. programs and involved in developing new courses with regard to marine aquaculture.

I'm currently leading 4 main research projects focuses on fish reproduction (BARD), fish sex change (Ministry of Agriculture), Effect of lightning on aquaculture sea cages (Ministry of Energy and Infrastructure) and green sea turtle reproduction (ISF, *publications:28, 30*).

In the coming years, I plan to continue developing the Marine M.Sc. program and focus it on more practical issues and national priorities. I will continue to supervise Ph.D. and M.Sc. students in the Faculty of Marine Sciences at the Ruppin Academic Center. I will continue several interdisciplinary studies in scientific research with colleagues from Israel and abroad, and plan to submit new proposals for international scientific funds for example:

1. Belgium-Israel: Ancestral glycoprotein hormones and receptors that control pathways of growth and reproduction in C. elegans. This collaboration has already started with Dr. Isabel Beets from the department of Biology, KU Leuven. We are currently producing the glycoprotein hormones and CRISPR trials are ongoing, this will lead to preliminary results to submit a new grant.
2. Singapore – Israel: Singapore Aquaculture Solution Centre (SAS-C). We aim to help the Singapore aquaculture industry to overcome reproduction challenges with our knowledge in Barramundi sex change and spawning induction in a variety of fishes and develop tools to better understand sex hormones.
3. USA – Israel: Production of Recombinant blue catfish LH for Spawning Induction in Aquaculture. The inconsistent reproductive performance of blue catfish has obstructed progress in aquaculture. It has impeded the creation of genetically improved blue catfish through selection programs and hindered efficient in vitro fertilization (IVF) for hybrid embryos. This research is expected to expand our knowledge of the complex control of FSH and LH signaling of the blue catfish, which will pave the way for advances in farming in the US. We expect that this technology will be applicable to a variety of teleost fish species. It will then allow enhancement of the cost-effectiveness of aquaculture in Israel, the USA and beyond.