BIOGRAPHICAL SKETCH

David, Lior. Born in 1966 in Israel.
Associate professor. Department of Animal Sciences, The Hebrew University of Jerusalem, Israel.
Head, BSc. Program in Animal sciences. The Hebrew University of Jerusalem, Israel.
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Academic Education

1992 - 1995 B.Sc. Agr., *summa cum laude*, Major in fish biology at the Department of Animal Sciences, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem.

1997 - 2002 Ph.D. Genetics (Direct track), Dept. of Field Crops and Genetics, The Robert H. Smith Faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem.
Thesis: "A study of genetic aspects of the common carp (*Cyprinus carpio* L.) using DNA markers and fish crosses".

2002 - 2006 Postdoctoral fellow, Dept. of Biochemistry, School of Medicine and Dept. of Biological Sciences, Stanford University, California, U.S.A.
Research projects: Yeast functional genomics, evolution and population genetics.

Personal Statement

Prof. David received his BSc. in Animal Sciences and his PhD in Genetics from the Hebrew University of Jerusalem, Israel. He did his postdoctoral studies at Stanford University School of Medicine on yeast genomics. Since 2006, he leads his own research group, studying various aspect of fish genetics and evolution. Prof. David is an expert in quantitative genetics, population genetics, selective breeding, evolution and epigenetics. Over the years, his group used selective breeding to develop common carp strains, which are genetically resistant to a viral disease caused by CyHV-3 that inflicts serious damages to carp production worldwide. Using the genetically disease-resistant and susceptible carp lines developed, his group studies genetics of disease-resistance and function of fish immune system. His group is involved also in disease challenges and vaccine development for fish infectious diseases. In addition, Prof. David studies the genetics and evolution of sex-determination in different fish species, including Flathead grey mullet, Striped bass, White bass and various Carps. Together with his interest in how genetic sex-determination evolves, which fish are great models for, he applies this knowledge to the benefit of aquaculture production, for instance, by developing an improved grey mullet brood fish producing all-female progenies. Prof. David is also studying the genetic variation in natural fish populations to understand how fish adapt to environmental changes and how to manage and conserve natural fish populations. The results of his diverse research interests were presented in main scientific meetings and published in leading journals.

Positions and Employment in Academics

2006 - 2015 Lecturer, Department of Animal Sciences, RH Smith Faculty of Agriculture, Food and Environment. The Hebrew University of Jerusalem, Rehovot, Israel.

2015 - 2020 Senior lecturer (Tenured), Department of Animal Sciences, RH Smith Faculty of Agriculture, Food and Environment. The Hebrew University of Jerusalem, Rehovot, Israel.

2016 - 2017 Visiting scientist, Dept. of cell biology and immunology, Wageningen Institute of Animal Sciences, Wageningen University and Research, Wageningen, The Netherlands.

2017 Visiting scientist, Genome Biology Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany.

2017 - To date Head, Undergraduate program (BSc.) in Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences, The Hebrew University of Jerusalem.

2019 - To date Academic curator, Fish collection, National Natural history Collections of the Hebrew University of Jerusalem.

2020 - To date Associate Professor (Tenured), Dept. of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences, The Hebrew University of Jerusalem.

Teaching and Mentoring

2006 - To date Teaching of BSc. and MSc. student levels courses in genetics, evolution, epigenetics and genomics. An average of 4 courses per academic year.

2006 - To date Advisor of over 30 MSc. and PhD. students and post-doctoral research fellows.

2010 - To date Serving in dozens of MSc. and PhD. committees of students from Israeli academic institutions.

2010 - To date Evaluating dozens of MSc. and PhD. theses of students from Israeli, US, Australia and Eropean academic institutions.

Additional Academic Contributions

2006 - To date Presentation of research results in dozens of international scientific meetings, including invited talks, selected talks and posters presentations.

2006 - To date Serving in dozens of grant review panel for Israeli Ministry of Agriculture chief scientist, Israel Science Foundation, US-Israel Bi-national Agricultural Research and Development Fund (BARD), Consortium of European Taxonomic Facilities (CETAF) and more.

2006 - To date Reviewing hundreds of research papers for peer-review scientific journals including: Science, Genetics, Molecular Systems Biology, PloS Genetics, PLoS ONE, Animal Genetics, Genome Biology and Evolution, Molecular Biology and Evolution, RNA, Aquaculture, Genetics Selection and Evolution, BMC Genomics, Frontiers in Genetics, Heredity, Theoretical Population Biology, Fish and Shellfish Immunology, North American Journal of Aquaculture, Genes Genomes Genetics – G3, and more.

2006 - To date Reviewing tens of research grant proposals in the fields of genetics, genomics, evolution, ecology and aquaculture for Israeli, US and European funding agencies.

2011 - To date Review editor for the Journal Frontiers in Genetics, section Livestock Genomics.

2015 - To date Section editor for the Journal Frontiers in Genetics, section Evolutionary and Population Genetics.

2015 - To date Expert member, Fish introduction into Israel committee, The Israeli Ministry of Agriculture, Israel.

2016 - To date Invited visitor to academic institutions in Israel, Egypt, Thailand, India, Singapore, China, Australia, US, Poland, Norway, Germany and the Netherlands.

Professional Memberships

2005 – To date Member, Genetic Society of America (GSA)

2011 – To date Member, The Genetic Society of Israel.

2015 – To date Member, ISAG; International Society for Animal Genetics.

Honors

1994 - 1995 B.Sc. Agr. *Summa cum laude*, Dean's scholarship for outstanding students

1997 Rector's award for excellence in Master's studies

2002 - 2004 The Vaadia-BARD postdoctoral fellowship

2016 Wageningen Institute of Animal Sciences (WIAS) researcher fellowship for visiting scientists, Wageningen University and Research, The Netherlands.

2016 DAAD fellowship for visiting scientists, European molecular biology laboratory (EMBL), Heidelberg, Germany

2016 - 2021 Vigevani Senior Lectureship in Animal Sciences. The Hebrew University of Jerusalem, Rehovot, Israel.

Peer-reviewed publications

1. Rothbard, S., Rubinshtein, I., **David, L.** and Shelton, W.L. (1999). Ploidy manipulations aimed to produce androgenetic Japanese ornamental (Koi) carp, *Cyprinus carpio* L. Israel J. Aquacult. - Bamidgeh, 51(1): 26-39.
2. Rothbard, S, Rubinshtein, I.and **David, L.** (1999) Coloration in crosses between two variants of goldfish, *Carassius auratus*. Israeli J. Aquacult. - Bamidgeh, 51(3):133-140.
3. Rothbard, S., Shelton, W.L, Rubinshtein, I., Hinits Y. and **David, L.** (2000) Induction of all-female triploids in Grass carp (*Ctenophringodon idella*) by integration of hormonal sex inversion and ploidy manipulations. Israeli J. Aquacult. - Bamidgeh, 52(4):133-150.
4. **David, L.**, Fang J., Rajasekaran P., Hillel, J. and Lavi, U. (2001) Polymorphism in ornamental and common carp strains (*Cyprinus carpio* L.) as revealed by AFLP analysis and a new set of microsatellite markers. Mol. Gen. Genomics, 266: 353-362.
5. Hillel J., Groenen MAM., Tixier-Boichard M., Korol AB, **David L.**, Kirzhner VM., Burke T., Barre-Dirie A., Crooijmans RPMA., Elo K., Feldman MW., Freidlin PJ., Mäki-Tanila A., Oortwijn M., Thomson P., Vignal A., Wimmers K. and Weigend S. (2003) Biodiversity of 52 chicken populations assessed by microsatellite typing of DNA pools. Genet. Sel. Evol., 35(5):533-557.
6. **David L.**, Blum S., Feldman MW., Lavi U., Hillel J. (2003) Recent duplication of the common carp (*Cyprinus carpio* L.) genome as revealed by analyses of microsatellite loci. Mol. Biol. Evol., 20(9): 1425-1434.
7. **David L.**, Rothbard S., Rubinstein I., Katzman H., Hulata G., Hillel J., Lavi U. (2004) Aspects of red and black color inheritance in the Japanese ornamental (Koi) carp (*Cyprinus carpio* L.). Aquaculture, 233(1-4):129-147.
8. McKinnon JS., Mori S., Blackman B., **David L.**, Kingsley D., Jamieson L., Chou J. and Schluter D. (2004) Evidence for ecology's role in speciation. Nature, 429(6989):294-8.
9. Prokisch H., Scharfe C., Camp DG., Xiao W., **David L.**, Andreoli C., Monroe ME., Moore RJ., Gritsenko MA., Kozany C., Hixson KK., Mottaz HM., Zischka H., Ueffing M., Herman ZS., Davis RW., Meitinger T., Oefner PJ., Smith RD. and Steinmetz LM. (2004) Integrative Analysis of the Mitochondrial Proteome in Yeast. PLoS Biology, 2(6):795-804.
10. Hon-Nami K., Ueno S., Endo H., Nishimura H., Igarashi T., **David L.** and Iwashita S. (2004) A novel Giraffidae-specific interspersed repeat with a microsatellite, originally found in an intron of a ruminant paralogous p97bcnt gene. Gene, 13:340(2):283-90.
11. Ben-Ari G., Blum S., Hillel J., Twito T., Lavi U., **David L**. and Feldman MW. (2004) Single Nucleotide Polymorphism (SNPs) in chicken: resources and possible applications. In: Second report on chicken genes and chromosomes 2005. Cytogenet. Genome Res., 109(4):415-79.
12. Gu Z., **David L.**, Petrov D., Jones T., Davis RW. and Steinmetz LM. (2005) Elevated evolutionary rates in the laboratory strain of *Saccharomyces cerevisiae*. P. Natl. Acad. Sci. USA, 102(4):1092-7.
13. Hillel J., Gefel D., Kalman R., Ben-Ari G., **David L.**, Orion O., Feldman MW., Bar-On H., Blum S., Raz I., Schaap T., Shpirer I., Lavi U., Shafrir E. and Ziv E. (2005) Evidence for a major gene affecting the transition from normoglycaemia to hyperglycaemia in *Psammomys obesus*. Heredity, 95(2):158-65.
14. Iwashita S. Ueno S., Nakashima K., Song SY., Ohshima K., Tanaka K., Endo H., Kimura J., Kurohmaru M., Fukuta K., **David L.** and Osada N. (2006) A tandem gene duplication followed by recruitment of a retrotransposon created the paralogous bucentaur gene (*bcnt*^{p97}) in the ancestral ruminant. Mol. Biol. Evol. 23(4):798-806.
15. Gagneur J., **David L.**, Steinmetz LM. (2006) Capturing cellular machines by systematic screens of protein complexes. Trends Microbiol. 14(8):336-9. **Invited review.**
16. **David L.**, Huber W., Granovskaia M., Toedling J., Palm CJ., Bofkin L., Jones T., Davis RW. and Steinmetz LM. (2006) A high-resolution map of transcription in the yeast genome. Proc. Natl. Acad. Sci. USA. 103(14):5320-5.
17. Yue GH., **David L. and** Orban L. (2006) Mutation rate and pattern of microsatellites in common carp (*Cyprinus carpio* L.). Genetica. 129 (3): 329-331.
18. Ben-Ari G., Zenvirth D., Sherman A., **David L.**, Klutstein M., Lavi U., Hillel J. and Simchen G. (2006) Four linked QTLs control sporulation efficiency in budding yeast. PLoS Genetics, 2 (11): 1815-1823.
19. Hillel J., Granevitze Z., Twito T., Ben-Avraham D., Blum S., Lavi U., **David L.**, Feldman MW., Cheng H. and Weigend S. (2007) Molecular markers for the assessment of chicken biodiversity. Worlds Poultry Sci. J., 63(1): 33-45.

20. **David L.**, Rosenberg NA., Lavi U., Feldman MW. and Hillel J. (2007) Genetic diversity and population structure inferred from the partially duplicated genome of domesticated carp, *Cyprinus carpio* L. Genet. Sel. Evol. 39:319-340.
21. Granevitze Z., Blum S., Cheng H.[C], Vignal A., Morisson M., Ben-Ari G., **David L.**, Feldman MW., Weigend S., Hillel J. (2007) Female-specific DNA sequences in the chicken genome. J. Hered., 98(3): 238-42.
22. Wei W., McCusker JH., Hyman RW., Jones T., Ning Y., Cao Z., Gu Z., Bruno D., Miranda M., Nguyen M., Wilhelmy J., Komp C., Tamse R., Wang X., Jia P., Luedi P., Oefner PJ., **David L.**, Dietrich FS., Li Y., Davis RW., and Steinmetz LM. (2007) Genome sequencing and comparative analysis of *Saccharomyces cerevisiae* strain YJM789. Proc. Natl. Acad. Sci. USA., 104(31): 12825-30.
23. Sinha H., **David L.**, Pascon RC., Clauder MS., Krishnakumar S., Nguyen M., Shi G., Dean J., Oefner PJ., McCusker JH., Steinmetz LM. (2008) Sequential elimination of major-effect contributors identifies additional quantitative trait loci conditioning high- temperature growth in yeast. Genetics 180(3):1661-70.
24. Kongchum P., Rexroad III CE., Hallerman EM., **David L.**, Palti Y. (2009) Single nucleotide polymorphism identification, genetic mapping and tissue expression of the rainbow trout *TLR9* gene. Anim. Genet. 40(6):1001-1001.
25. Kongchum P., Palti Y., Hallerman E.M., Hulata G., **David L.** (2010) SNP discovery and development of genetic markers for mapping innate immune response genes in common carp (*Cyprinus carpio*). Fish Shellfish Immunol. 29(2): 356-361.
26. **David L.,** Stolovicki E., Haziz E. and Braun E. (2010) Inherited adaptation of genome-rewired cells in response to a challenging environment, HFSP Journal 4:131-141.
27. **David L.,** Clauder-Munster S. and Steinmetz L. M. (2011) Genome-Wide Transcriptome Analysis in Yeast Using High-Density Tiling Arrays. In: Yeast Systems Biology: Methods and Protocols, Springer protocols Humana Press, USA. Eds. Castrillo JI. and Oliver SG. Methods Mol Biol. pp. 107-123. **Invited Book chapter**.
28. Braun E. and **David L.** (2011) The role of cellular plasticity in the evolution of regulatory novelty. In: Transformations of Lamarckism; From Subtle Fluids to Molecular Biology. Vienna Series in Theoretical Biology MIT Press, Cambridge, MA, USA. Series Eds. Gissis S.B. and Jablonka E. PP.181-192. **Invited book chapter**.
29. Kongchum, P., Hallerman, EM., Hulata, G., **David, L.**; Palti, Y. (2011) Molecular cloning, characterization and expression analysis of *TLR9*, *MyD88* and *TRAF6* genes in common carp (*Cyprinus carpio*). Fish Shellfish Immunol. 30(1): 361-371.
30. Kongchum, P., Sandel E., Lutzky S., Hallerman, EM., Hulata, G, **David, L.**; Palti, Y (2011) Association between *IL-10a* single nucleotide polymorphisms and resistance to cyprinid herpesvirus-3 infection in common carp (*Cyprinus carpio*). Aquaculture 315(3-4):417-421.
31. Bar I., Kaddar E., Velan A. and **David L**. (2013). *Melanocortin receptor 1* and black pigmentation in the Japanese ornamental carp (*Cyprinus carpio* Var. Koi). Frontiers in Genetics 4, 6.
32. Ohad DG., Avrahami A., Waner T., **David L.** (2013) The occurrence and suspected mode of inheritance of congenital subaortic stenosis and tricuspid valve dysplasia in Dogue de Bordeaux dogs. The Veterinary Journal. 197:351-357.
33. Siriskar DA, Khedkar GD, **David L**. (2013) Production of salted and pressed anchovies (*stolephorus* sp.) and its quality evaluation during storage. Journal of Food Science and Technology. 50(6):1172-1178.
34. **David L.,** Ben-Harosh Y., Stolovicki E., Moore LS., Nguyen M., Tamse R., Dean J., Mancera E., Steinmetz LM., Braun E. (2013) Multiple genomic changes associated with reorganization of gene regulation and adaptation in yeast. Molecular Biology and Evolution 30(7):1514–1526.
35. Wiegertjes GF., Lorenzen N., Secombes CJ., Collet B., Fischer U., Tafalla C., Parra D., Scapigliati G., Boudinot P., Evensen Ø., Adams A., Toffan A., Buchmann K., Vesely T., **David L.**, Mulero V., Smith P., Aspehaug V., Engell-Sørensen K., Sober J., Wallis T., Rød T., Flores M., March J., Stratmann A., Christofilogiannis P., Tobar J., Henriksen NH., Sigholt T., de las Heras A. (2013) Targeted disease prophylaxis in European fish farming (TargetFish). Fish & Shellfish Immunology 34(6): 1746.
36. Granevitze Z., **David L.**, Twito T., Weigend S., Feldman M., Hillel J. (2014) Phylogenetic resolution power of microsatellites and various SNP types assessed in ten divergent chicken populations. Animal Genetics 45(1):87-95.

37. **David L.,** Clauder-Munster S. and Steinmetz LM. (2014) High-Density Tiling Microarray Analysis of the Full Transcriptional Activity of Yeast. In: Yeast Genetics: Methods and Protocols. Springer protocols, Springer NY press, USA. Eds. Smith JS. and Burke D. 1205:257-273. **Invited book chapter**.
38. Shapira R.., Levy T., Shaked S., Fridman E., David L. (2014) Extensive heterosis in growth of yeast hybrids is explained by a combination of genetic models. Heredity 113: 316–326.
39. Khedkar GD., Jamdade R., Naik S., **David L.**, Haymer D. (2014) DNA barcodes for the fishes of the Narmada, the third longest river of India. PLoS ONE 9(7), e101460.
40. Moore LS., Wei W., Stolovicki E., Benbenishty T., Wilkening S., Steinmetz LM., Braun E., **David L**. (2014) Induced mutations in yeast cell populations adapting to an unforeseen challenge. PLoS ONE 9(10), e111133.
41. Khedkar GD., Lutzky S., Rathod S., Kalyankar A., **David L.** (2014) A dual role of dams in fragmentation and support of fish diversity across the Godavari River basin in India. Ecohydrology. 7(6):1560-1573.
42. Yasur-Landau D., Jaffe CL., **David L.**, Baneth G. (2016) Allopurinol Resistance in *Leishmania infantum* from Dogs with Disease Relapse. PLoS neglected tropical diseases. 10,1:e0004341. (4.367; 4/37 Parasitology; 23).
43. Wiegertjes GF., Lorenzen N., Secombes CJ., Collet B., Fischer U., Tafalla C., Parra D., Scapigliati G., Boudinot P., Evensen Ø., Adams A., Toffan A., Buchmann K., Vesely T., **David L.**, Mulero V., Smith P., Aspehaug V., Engell-Sørensen K., Sober J., Wallis T., Rød T., Flores M., March J., Stratmann A., Christofilogiannis P., Tobar J., Henriksen NH., Sigholt T., de las Heras A. (2016) TargetFish - Targeted disease prophylaxis in European fish farming. Bulletin of the European Association of Fish Pathologists. 36:52-56.
44. Shapira R. and **David L**. (2016) Genes with a combination of over-dominant and epistatic effects underlie heterosis in growth of *Saccharomyces cerevisiae* at high temperature. Frontiers in Genetics, 7, 72.
45. Yasur-Landau D., Jaffe CL., Doron-Faigenboim, A.**, David L.** and Baneth G. (2017) Induction of allopurinol resistance in *Leishmania infantum* isolated from Dogs. PLoS neglected tropical diseases. 11, 9:e0005910.
46. Chengula AA., Mugimba KK., Wamala S., Mwega ED, Kasanga CJ, Byarugaba DK, Mdegela RH, Dishon A., Mutoloki S., **David L.**, Evensen Ø. and Munang'andu HM. (2017) Molecular detection of tilapia lake virus (TiLV) genome in Nile tilapia (*Oreochromis niloticus*) from Lake Victoria. Tanzania Veterinary Journal. 35:7-18.
47. Tadmor-Levi, R., Asoulin, E., Hulata, G. and **David, L**. (2017) Studying the genetics of resistance to CyHV-3 disease using introgression from feral to cultured common carp strains. Frontiers in Genetics, 8, 24.
48. Mugimba KK., Chengula AA., Wamala S., Mwega ED., Kasanga CJ., Byarugaba DK., Mdegela RH., Tal S., Bornstein B., Dishon A., Mutoloki S., **David L.**, Evensen Ø. and Munang'andu HM.[PI] (2018) Detection of tilapia lake virus (TiLV) infection by PCR in farmed and wild Nile tilapia (*Oreochromis niloticus*) from Lake Victoria. Journal of fish diseases. 41(8):1181-1189.
49. Yasur-Landau, D., Jaffe, CL., **David, L.**, Doron-Faigenboim, A. and Baneth, G. (2018) Resistance of Leishmania infantum to allopurinol is associated with chromosome and gene copy number variations including decrease in the S-adenosylmethionine synthetase (METK) gene copy number. International Journal for Parasitology: Drugs and Drug Resistance. 8(3):403-410.
50. Borovski, T., Tadmor-Levi, R., Shapiro, J., Rubinstein G., Agyakwah SK., Hulata, G. and **David, L**. (2018) Historical and recent reductions in genetic variation of the *Sarotherodon galilaeus* population in the Sea of Galilee. Conservation Genetics. 19(6):1323-1333.
51. Embregts CWE., Tadmor-Levi R., Veselý T., Pokorová D., **David L.**, Wiegertjes GF. and Forlenza M. (2019) Intra-muscular and oral vaccination using a Koi Herpesvirus ORF25 DNA vaccine does not confer protection in common carp (*Cyprinus carpio L.)*. Fish & shellfish immunology 85:90-98.
52. Golani D., Sonin O., Snovsky G., **David L.** and Tadmor-Levi R. (2019) The occurrence of the peacock bass (*Cichla kelberi* Kullander and Ferreira 2006) in Lake Kinneret (Sea of Galilee), Israel. BioInvasions Records 8.
53. Tadmor-Levi, R.., Hulata G. and David L. (2019) Multiple interacting QTLs affect disease challenge survival in Common carp (*Cyprinus carpio*). Heredity 123:565-578.
54. Tadmor-Levi, R., Doron-Faigenboim, A., Marcos-Hadad, E., Petit, J., Hulata, G., Forlenza, M., Wiegertjes, GF. and **David, L.** (2019) Different transcriptional response between susceptible and resistant common carp (*Cyprinus carpio*) fish hints on the mechanism of CyHV-3 disease resistance. BMC genomics, 20(1), pp.1-17.
55. Xu P., **David L**., Martínez P. and Yue GH. (2020) Genetic dissection of important traits in aquaculture: Genome-scale

tools development, trait localization and regulatory mechanism exploration. Frontiers in Genetics 11, 642. **Invited review.**

56. Tadmor-Levi R., David L. and Golani D. (2020) Indication of cryptic taxa within the flat needle fish, *Ablennes hians* based on analysis of the Cytochrome oxidase I region on a wide range of samples. Marine Biology Research 16 (6-7), 474-479.
57. Oz I., Gajbhiye DS., Columbus-Shenkar YY., **David L**. and Golan M. (2022) Non-uniform metamorphosis underlies different development trajectories in hatchery-reared flathead grey mullet (*Mugil cephalus*) Frontiers in Marine Science, 1365.
58. Tadmor-Levi R., Borovski T., Marcos-Hadad E., Shapiro J., Hulata G., Golani D. and **David L.** (2022) Establishing and using a genetic database for resolving identification of fish species in the Sea of Galilee, Israel Plos one 17 (5), e0267021.
59. Chengula AA., Mugimba KK., Tal S., Tadmor Levi R., Dubey S., Mutoloki S., Dishon A., **David L.**, Evensen Ø. and Mweemba Munang'andu H. (2022) Efficiency, sensitivity and specificity of a quantitative real-time PCR assay for Tilapia Lake virus (TiLV) Journal of Virological Methods 307, 114567
60. Tadmor-Levi R., Cummings D., Borovski T., Shapira R., Marcos-Hadad E. and **David L.** (2022) A method for quick and efficient identification of cichlid species by high resolution DNA melting analysis of minibarcodes Frontiers in Ecology and Evolution 10

Research support (recent)

2012 – 2017 European community, EU-FP7 KBBE-2012-6 program, "Targeted disease prophylaxis in European fish farming – TARGETFISH", Geert Wiegertjes (PI, Wageningen University, The Netherlands), additional 27 partners from European academic institutes and commercial companies and Lior David (HUJI), Euro 127,000/6,000,000.

2013 – 2015 Chief Scientist of the Israeli Ministry of Agriculture, "Development of common carp lines resistant to Cyprinid Herpes Virus – 3", Lior David (PI) and Gideon Hulata, US $ 70,000/112,500.

2016 – 2020 Chief Scientist of the Israeli Ministry of Agriculture, "Development of broodstock for production of all-female/sterile progeny in fish with high commercial value", Lior David (PI), Berta Levavi-Sivan (HUJI, Israel), Yoav Gothilf (TA university, Israel), Ayana Perelberg-Benet (Israeli Ministry of Agriculture), Yoav Magnus (Maagan-Michael fish breeding center, Israel) US $ 168,500/311,000.

2019 – 2023 Chief Scientist of the Israeli Ministry of Agriculture, "Establishment and field testing of common carp strains resistant to Koi herpes virus disease", Lior David (PI), Ayana Perelberg-Benet (Israeli Ministry of Agriculture). US $ 193,000/210,000.

2020 – 2024 USAID – MERC, "Development of Genetically Improved Cold-tolerant Tilapia Genotype for Supporting Integrated Agri-aquaculture System under Desert Conditions", Ahmed Elbeltagy (PI), additional 2 PIs and Lior David (Co-PI). US $ 185,000/652,000. **Accepted, In final stages of contract negotiations.**

2021 Chief Scientist of the Israel National Parks Authority, "DNA Barcoding of the freshwater fish of Israel" Lior David (PI). US $ 6000.

2021 - 2024 Binational Agricultural Research and Development Fund (BARD), "Elucidating carp responses and virulence strategies during CyHV-3 infection of hosts with different susceptibility patterns". Lior David (PI) , Bartolomeo Gorgoglione (PI – Michigan State U). US $ 155,000/310,000.

2021 – 2024 Israel Innovation Authority, "Developing a technology for producing all-female populations for Grey mullet (*Mugil cephalus*) aquaculture". Lior David (PI). US $ 315,000.

2022 – 2025 Chief Scientist of the Israeli Ministry of Agriculture, "Identification of factors for improving development and survival of grey mullet (*Mugil cephalus*) larvae at elevated water temperatures", Lior David (Co-PI), Matan Golan (PI - ARO, Israel), US $ 79,000/158,000.

2022 – 2027 Israel Science Foundation (ISF), "Evolution of sex determination mechanisms in cyprinids", Lior David (PI), US $ 433,000.