CV

Stephanie De Vos, ° 23/12/1983, Jette, Belgium

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Education

Master in Bioscience Engineering, option agriculture

(2001–2008): Ghent University, Faculty of Bioscience Engineering.

Dissertation: "Characterization, pathogenicity and integrated control of Cuban Rhizoctonia solani-isolates on bean". The dissertation included laboratory work at the Instituto Biotechnologico de Las Plantas, Universidad Central de Las Villas in Cuba and was completed at the group of Crop protection (Prof. Dr. ir. Monica Höfte), Ghent University in Belgium.

Obtained with distinction.

Work experience

PhD in Applied Biological Science (2009–2014):

Ghent University, Faculty of Bioscience Engineering, Laboratory of Aquaculture & Artemia Reference Center (Prof. Dr. ir. Peter Bossier); Flemish Institute of Biotechnology, VIB-PSB, quantitative genomics (Prof. Dr. ir. Marnik Vuylsteke).

Dissertation: " Artemia genomics: a new crustacean genome and discovery of sex-determining genes."

Successful completion of the PhD and the Doctoral Training Program (soft skills, seminars and specialist courses) organized by the Doctoral School of Bioscience Engineering.

BlueGene project, scientific collaborator (2014 – March 2016):

Ghent University, Faculty of Bioscience Engineering, Laboratory of Aquaculture & Artemia Reference Center (Prof. Dr. ir. Peter Bossier and Dr. ir. Marnik Vuylsteke)**.**

My responsibilities within this commercially oriented IOF blue biotech spin-off project were:

- Assembly of novel genomes (e.g., L. vannamei) using bioinformatics tools
- Proving the concepts proposed within the project
- Communicating and presenting the results to IOF, TechTransfer, stakeholders, companies and potential collaborators

The outcome of this research remained in-house, considering the commercial aims of the project.

Postdoc in Bioscience engineering (March 2016 – 2019):

Ghent University, Faculty of Bioscience Engineering, Laboratory of Aquaculture & Artemia Reference Center (Prof. Dr. ir. Peter Bossier, Prof. Dr. ir. Gilbert Van Stappen).

Several projects were part of this Postdoc:

- Assembly and annotation of the Artemia inbred genome, consortium and IP contract setup for the Artemia genome project
- Differential expression of genes related to Artemia extremophilic features,
- Gene discovery in Artemia and in Litopenaeus Vannamei,
- Genome assembly, annotation and characterization of a probiotic Bacillus for aquaculture
- Setup of MinIon sequencing and genome assembly facilities

CEO of R.E.D. Laboratories, Kalidashop and Protea Biopharma (2019 – 2020):

Overarching leadership of three companies offering and developing solutions for chronic diseases:

- R.E.D. Laboratories NV: a specialized medical testing company
- Kalidashop BV: a web shop for science-based supplements offered to medical professionals and patients
- Protea Biopharma NV: an R&D company developing medical tests and supplements

Responsibilities:

- Development of policy and general strategy
- Effective management, general organization, including hiring personnel
- Upholding the scientific reputation of the company
- Collaboration with other (inter)national institutions
- Reporting to the Board of Directors
- Budgeting, valorisation of company results, use of resources
- Internal and external communication
- When appropriate, obtaining legal advice, taking legal action (incl. patent rights, suppliers…)
- Final responsibility towards federal institutions, e.g., the Food Agency (FAVV)

Founder and company director of Thinkubate BV (2021 –present):

Thinkubate is a consulting company offering science-based consulting services for universities and companies in the agronomic, environmental, medical and food sectors. Consulting activities are focused on genomics and scientific writing (grants, academic papers, whitepapers).

Scientific Work

Complete publication list

Peer-reviewed:

Nerey Y, Pannecoucque J, Hernandez HP, Diaz M, Espinosa R, **De Vos, S**, Van Beneden S, Herrera L, Hofte M (2010) Rhizoctonia spp. Causing Root and Hypocotyl Rot in Phaseolus vulgaris in Cuba. Journal of Phytopathology, 158 (4), 236-243.
DOI: 10.1111/j.1439-0434.2009.01609.x

De Vos S, Bossier P, Van Stappen G, Vercauteren I, Sorgeloos P, Vuylsteke M (2013) A first AFLP-based genetic linkage map for brine shrimp Artemia franciscana and its application in mapping the sex locus. PLoS One, 8 (3).
DOI: 10.1371/journal.pone.0057585

Yea H , Li D, Yanga J, Chen D, **De Vos S**, Vuylsteke M, Sorgeloos P, Van Stappen G, Bossier P, Nagasawa H, Yang W (2017) Molecular characterization and functional analyses of a diapause hormone receptor-like gene in parthenogenetic Artemia. Peptides 90 p.100-110.
DOI: 10.1016/j.peptides.2017.01.008

Li DR, Ye HL, Yang JS, Yang F, Wang MR**, De Vos S**, Vuylsteke M, Sorgeloos P, Van Stappen G, Bossier P, Yang WJ (2017) Identification and characterization of a Masculinizer (Masc) gene involved in sex differentiation in Artemia. Gene 614 p.56-64.
DOI: 10.1016/j.gene.2017.03.010

De Vos S, Van Stappen G, Sorgeloos P, Vuylsteke M, Rombauts S, Bossier P (2019) Identification of salt stress response genes using the Artemia transcriptome. Aquaculture, 500 p.305-314.
DOI: 10.1016/j.aquaculture.2018.09.067

Dung NV, Christiaens O, Le Van Bao D, **De Vos S**, MacRae TH, Smagghe, Bossier P (2019) Identification of RNAi-related genes and transgenerational efficiency of RNAi in Artemia franciscana. Aquaculture, 501 p.285-292.
DOI: 10.1016/j.aquaculture.2018.09.042

Li A, Zhan-Peng L, Xu, Yang J, Feng J, Lin Z, Wen-Huan J, **De Vos S**, Van Stappen G, Bossier P and Yang W (2019) The chloride channel CFTR controls cellular quiescence by hyperpolarizing the cell membrane during diapause in the crustacean Artemia. Journal of Biological Chemistry, 294(16):6598-6611.
DOI: 10.1074/jbc.ra118.005900

Junprung W, Norouzitallab P, **De Vos S**, Tassanakajon A, Nguyen Viet D, Van Stappen G, Bossier P (2019) Sequence and expression analysis of HSP70 family genes in Artemia franciscana. Scientific reports, 9: 8391.
DOI: 10.1038/s41598-019-44884-y

Asem A, Li W, Wang P, Eimanifar A, Shen C, **De Vos S**, Van Stappen G (2019) The complete mitochondrial genome of Artemia sinica Cai, 1989 (Crustacea: Anostraca) using next-generation sequencing. Mitochondrial DNA Part B, 4 (1) p.746-747.
DOI: 10.1080/23802359.2019.1565933

Asem A, Eimanifar A, Rastegar-Pouyani N, Hontoria F, **De Vos S**, Stappen GV, Sun SC (2020) An overview on the nomenclatural and phylogenetic problems of native Asian brine shrimps of the genus Artemia Leach, 1819 (Crustacea, Anostraca). Zookeys, 13;902:1-15. DOI: 10.3897/zookeys.902.34593

De Vos S, Rombauts S, Coussement L, Dermauw W, Vuylsteke M, Sorgeloos P, Clegg JS, Nambu Z, Van Nieuwerburgh F, Norouzitallab P, Van Leeuwen T, De Meyer T, Van Stappen G, Van de Peer Y, Bossier P (2021) The genome of the extremophile Artemia provides insight into strategies to cope with extreme environments. BMC genomics, 22(1), 635. DOI: 10.1186/s12864-021-07937-z

Viet DN, Christiaens O, **De Vos S**, Smagghe G, Bossier P (2022) The Sex-Specific Splicing of Doublesex in Brine Shrimp Artemia franciscana. Genes 1;13(11):1997. DOI: 10.3390/genes13111997

Non-peer-reviewed: dissertations

De Vos S (2008) Characterization, pathogenicity and integrated control of Cuban Rhizoctonia solani-isolates on bean. Master dissertation.

De Vos S (2014) Genomic tools and sex determination in the extremophile brine shrimp Artemia franciscana. Doctoral dissertation. ISBN: 9789059897175 https://biblio.ugent.be/publication/5674181

Training sessions attended:

- Applied bioinformatics in Plant Sciences (Athens, Greece, 2011)
- COST Training School on Next Generation Sequencing (Uppsala, Sweden, 2011)
- MG4U Summer Course: Marine Evolutionary & Ecological Genomics (Roscoff, France, 2011)
- Introductory session on programming with Bioperl (VIB Bits, Zwijnaarde, Belgium, 2011)
- Perl and Bioperl Introductionary Course (VIB Bits, Zwijnaarde, Belgium, 2011)
- UCSC Genome Browser Training (VIB Bits, Zwijnaarde, Belgium, 2011)
- Advanced Academic English: Writing Skills for (Bioscience) Engineering (Ghent University, Belgium, 2012)
- Starters seminar (VOKA Gent, 2016)
- Tech Transfer skills (Tech Transfer, Ghent University)
- Start platform (UNIZO, Belgium, 2021)

Posters presented:

- 11th VLIZ Young Marine Scientists' Day (Bruges, Belgium, 2011): “A first AFLP-based linkage map and sex-linked markers for Artemia”
- Genetics, epigenetics and evolution of sex chromosomes (Institut Jaques Monod, Paris, France, 2011): “A first AFLP-based linkage map and sex-linked markers for Artemia”

Talks presented:

- PHD symposium (Ghent University, Belgium, 2012): "A first AFLP-based linkage map and *de novo* assembled genome sequence for *Artemia"*
- *VIB seminar (VIB, Belgium, 2012) session "*NGS: the state of affairs in VIB", talk: "Artemia de novo genome sequence and sex-linked SNPs by bulked segregant analysis"
- Larvi 2013 (Ghent University, Belgium, 2013), 6th fish & shellfish larviculture symposium, International workshop, session "Brine shrimp Artemia as a model organism in life sciences research ", talk: "Artemia Genomics"
- Symposium Vlaams Aquacultuur Platform (Ghent University, Belgium, 2016) "Het Artemia genoom en zijn toepassingen"
- AGRI4D (SLU, Sweden, 2019) "The Artemia genome provides insight in crustacean biology"

Teaching:

- Supervision Master thesis Adeniyi Racheal Tolani, Ghent University (2011)
- Teaching Practical exercises "PCR-RFLP of Artemia cysts", Master in Aquaculture, Ghent University (2011)
- Genetics course, Master in Aquaculture, Ghent University (2012 & 2013)
- Teaching online "The role of non-mammalian models in understanding stress & disease", for the freestanding course "Epigenetic management of stress and disease", Uppsala Universitet (Sweden, 2021)

Skills mastered:

- **Experimental design and fulfilment from start to finish**, specifically for genome and transcriptome research. For "omics" projects requiring new sequencing data, experimental design is done in collaboration with sequencing facilities, where price quotes for sequencing services are requested, negotiated and selected with the available budget in mind. Extensive experience with the following sequencing techniques: Sanger; Next-generation sequencing (single-end, paired-end, mate-pair) and long read technologies, such as PacBio.
- **Project management** of genome and transcriptome research consortia with international research and subcontracting partners
- **Laboratory techniques**: Artemia rearing, Artemia disease challenge, AFLP, RFLP, PCR design, PCR, DNA extraction, RNA extraction, Flow cytometry for genome size determination, fluorescence microscopy
- **Bioinformatics**: genetic mapping, genome mapping, transcriptome mapping, genome sequencing (NGS, PacBio), large *de novo* genome assembly, genome annotation (gene prediction and functional annotation), comparative genomics, SNP analysis, gene discovery with Bulked Segregant Analysis and Differential Gene Expression, transcriptome assembly, Differential Gene Expression Analysis, supercomputing, working in a UNIX environment, processing of Big data, retrieval of "omics" data from public databases
- **Analysis**: from results, to data analysis, to biological meaning
- **Biology of**: Artemia, crustaceans, Bacillus, bacteria, Rhizoctonia, fungi
- **Communication in English**: grant writing, reporting results to stakeholders, both academics, students, companies, governmental organizations and lay persons through meetings, written reports, peer-reviewed publications and reviews, posters and PowerPoint presentations at national and international congresses, inserting published research results in appropriate Wikipedia pages whenever suitable
- **IP management** in collaboration with the patent office

Soft skills:

- Academic writing
- Fluent in English, French and Dutch.
- Notions of Spanish, German
- Good at languages in general

Traits:

- Accountable
- Cooperative
- Flexible
- Problem-solver, constructive attitude
- Persistent, thorough, gets to the bottom of things
- Interested, driven
- Lifelong learner, innovative, open minded
- Multidisciplinary, thinks out of the box
- Briggs-Meyers test result: ENFP
- Colour Code Personality Profile: Green-Blue
- Belbin questionnaire result: Plant
- Perfectionist
- Verbose

Hobbies & interests:

- Yoga
- Singing (Jazz, Blues) & guitar playing
- Healthy foods, lifestyle, biohacking, health-related scientific literature
- Finance & investing
- Gardening
- Traveling & hiking