CURRICULUM VITAE OPHIR NAVE

Personal Details

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Google Scholar:https://scholar.google.co.il/citations?user=zsI9qh8AAAAJ&hl=en

1. Academic Education

2010-2013: Postdoctoral research in Applied Mathematics, Ben-Gurion University of the Negev, under the supervision of Professor Vladimir Gol'dshtein.

2010-2011: Teaching certificate, Lifshitz College of Education, Jerusalem.

2006-2010: Ph.D. the Department of Mathematics and Computer Science, Ben-Gurion University of the Negev, "Theoretical and Numerical Analysis of Spray Combustion", Applied Mathematics, under the supervision of Professor Vladimir Gol'dshtein.

2002-2005: M. Sc. the Department of Mathematics (summa cum laude), the Hebrew University of Jerusalem, "Decomposition of Tensors Spaces", General Relativity, under the supervision of Professor Shmuel Kaniel.

1998-2002: B. Sc. in Mathematics and Physics, The Hebrew University of Jerusalem.

2. Relevant Academic Employment

2013-Present: Senior Lecturer, Jerusalem College of Technology.

2010-2013: Lecturer, Jerusalem College of Technology.

2011-2016: Lecturer and Professional Examiner, Lifshitz College of Education Jerusalem.

2010-2012: Faculty Member, The David Yellin Academic College of Education Jerusalem.

2010-2012: Physics Laboratory Manager, The David Yellin Academic College of Education Jerusalem.

2009-2010: Professional advisor for an Israel Defence Ministry project, Ben-Gurion University of the Negev.

2009: Conference organization: *"Twelfth Mini-Workshop on Applied and Computational Mathematics"*, Ben-Gurion University of the Negev.

2006-2010: Teaching assistant for undergraduate students, Ben-Gurion University of the Negev, Department of Mathematics and Computer Science.

2002-2005: Teaching assistant for undergraduate students, The Hebrew University of Jerusalem, Department of Mathematics.

2000-2005: Physics Laboratory Manager, The Hebrew University of Jerusalem.

3. Awards and Honors for Academic or Professional Achievement

2005: Federman Scholarship for an M.Sc. thesis, The Hebrew University of Jerusalem.

2007: Certificate of Excellence for Teacher Assistants, Department of Mathematics and Computer Science, Ben-Gurion University of the Negev.

2019: Outstanding Lecturer for the year 2019, Lev Academic Center.

4. Research and Development: Activities and Publications

I am a researcher at the Jerusalem College of Technology. My main areas of interest are applied mathematics in the fields of engineering, combustion, biology, medicine, and education.

I collaborate with researchers from all fields of applied mathematics, from Israel and around the world, including the following:

- Prof. Newton Howard (Oxford University, MIT),
- Prof. Leonid Perlovsky (Harvard University),
- Prof. Yair Neumann (Ben-Gurion University),
- Prof. Vladimir Gol'dshtein (Ben-Gurion University),
- Prof. Suraj Ajadi (Obafemi Awolowo University),
- Prof. Vitcheslav Bykov (KIT, Karlsruhe University),
- Prof. Argyris, Arnelos (University of the Aegean),
- Dr. Eran Dolev (Tel-Aviv University),
- Prof. Zvi Bekerman (The Hebrew University),
- Dr. Svetlana Bunimovich-Mendrazitsky (Ariel University).

Mathematics applied to biology and medicine

My current main research activity in applied mathematics is focused on biomathematics. The main study deals with different mathematical models which

represent the complex dynamics of the immune system in different types of tumors such as prostate cancer, breast cancer, bladder cancer and melanoma, with various immunotherapies. The research is focused on building detailed, non-linear mathematical models for describing complex phenomena, and then developing and applying different methods (SPVF, MDDiM and more) for investigating these systems and making inferences about the biological phenomena.

One innovative focus is optimizing personalized schedules for immunotherapies. For this purpose, I am developing explicit expressions describing treatments, so that a model can be investigated in which each patient is given different doses and different time intervals of treatment. Another direction in this study is the combination of machine learning with mathematical models. I wrote mathematical models for adding artificial physiological features to clinical data. By improving machine learning methods and applying them, I have developed and am continuing to develop—tools for investigating and predicting important characteristics of cancer such as the tumor size in different time points. This study aims to understand the complex dynamics of cancer with the immune system and immunotherapies and has a great potential for the development and improvement of personalized medicine, with an emphasis on the optimization of treatment schedules and dosage protocols.

Another systems biology research focuses on the COVID-19 pandemic. I investigated and applied a stability analysis to the mathematical model that describes the spread of the coronavirus in Wuhan in China, and I found that the stability of the disease can be predicted with high accuracy.

Mathematics applied to combustion and engineering

I started my research on combustion during my Ph.D, under the supervision of Prof. Vladimir Gol'dstein. At the time, I studied the Method of Integral Invariant Manifold (MIM) for investigating different theoretical models of combustion. We published innovative papers in this field, including a new formalism for describing a monodisperse fuel spray as a polydisperse fuel spray and finding an analytical expression for the thermal explosion limit.

After completing my Ph.D., I learned various asymptotic methods such as Singular Perturbations Analysis (SPA), Singular Perturbed Vector Field (SPVF), Singular Perturbed Homotopy Analysis Method (SPHAM), Homotopy Analysis Method (HAM), and Perturbation theory. All these methods are useful for investigating mathematical models of combustion of polydisperse and monodisperse fuel spray. Hence, by applying these methods, I improved the conditions of the thermal explosion limit expression as well as the delay time.

In addition, I have continued to improve the mathematical models of combustion that I had developed, so that they can be applied to enginering and commercial applications. For example, I found an explicit expression for the delay time using a mathematical model that takes into account the thermal radiation and convection effect in the burning process of organic gel fuel in hot gas.

The researches that I led in combustion and its applications were conducted in collaboration with experts in the field, including Prof. Vitcheslav Bykov, Prof. Vladimir Gol'dshtein, and Prof. Suraj Ajadi, and our findings were published in high-impact journals in this field. Together, we enhanced the understanding of complex systems of combustion as well as different mathmetical methods and algorithms for investigating such complicated phenomena, with an emphasis on applied studies that have direct use for optimizing such systems for engineering and commercial applications.

Mathematics applied to education, the social sciences and behavior

In a joint research with Prof. Newton Howard (Oxford University, MIT), Leonid Perlovsky (Harvard University) and Prof. Yair Neumann (Ben-Gurion University), we investigated various models of psychology and behavioral science. We tried to answer complex questions such as why natural language, in the form of inner speech, plays a central role in self-consciousness. We showed that the brain as a physical system is limited in observing itself and relies on the mediation of natural language for the reconstruction of its phase space trajectory. Drawing on knowledge gathered on the measurement of dynamical systems, we detailed the unique properties of natural language that may support this reconstruction.

Another interesting question we tried to address is how much information we should drop to become intelligent. We proposed a model that explains that cognitive processing by intelligent systems involves the deletion of information in favor of higher-level abstractions, and we showed that it generates an optimal solution to the collapse of n objects into n sets. Numerical simulations of the model result in a logarithmic function of information loss and condensation that perfectly fits our knowledge of cognitive processes.

In these studies, I developed mathematical models that describe the relationship between the cognitive psychological world and the real, tangible world. I also investigated and developed tools to solve these dynamics and understand these phenomena; thus my contribution to the research was equivalent to that of my co-researchers

In summary, my expertise in applied mathematics is reflected in applying innovative mathematical methods to a variety of fields with practical applications for real life such as medicine, engineering, education. Some of these methods also have a commercial potential and help us understand the nature of complicated non-linear systems modeling in general.

Academic activities

I am a secondary advisor at Ariel University to the M.A. student Ifat Baron, in collaboration with faculty member Dr. Svetlana Bunimovich-Mendrazitsky.

I am advising several research students in the outstanding student program of the Academic Lev Center. The subject of the research is the mathematical modeling of cancer:

Mirim Elbaz,

Itzchak Iluz,

Uziel Haim,

Israel Hartuv,

Raziel Bar,

Eliezer-Elimelech Segal

I was an examiner for a PhD candidate at the Technion (2015).

I was an examiner for a PhD candidate at Ariel University (2019).

5. Publications

5.1 Peer-Reviewed Papers in Refereed Journals:

1. Neuman, Y., Argyris, A., & **Nave, O.** (2008). Sign-mediated Concept Formation. *The American Journal of Semiotics, 24(1), 107-133 [Special issue Biosemiotics.*

2. Neuman, Y., & **Nave, O.** (2008). A Mathematical Theory of Sign-mediated Concept Formation. *Applied Mathematics and Computation, 201(1-2), 72-81.*

3. Neuman, Y., & **Nave, O.** (2008). On the Semio-Mathematical Nature of Codes. *Biosemiotics, Springer Netherlands, 1(1), 99-111.*

4. Neuman, Y., & **Nave, O.** (2009). Metaphor-based Meaning Excavation. *Information Sciences, 179(16),* 2719-2728.

5. Suraju, A., & **Nave, O.** (2009). Approximate Critical Conditions in Thermal Explosion Theory for a Two-step Kinetic Model. *Journal of Mathematical Chemistry, 47(2), 790-807.*

6. **Nave, O.,** Gol'dshtein, V., & Bykov, V. (2010). A Probabilistic Model of Thermal Explosion in Polydisperse Spray. *Applied Mathematics and Computation, 217(6), 2698-2709.*

7. Neuman, Y., & **Nave, O.** (2010). Why the Brain Needs Language in Order to Be Self-conscious. *New Ideas in Psychology, 28(1), 37-48.*

8. **Nave, O.,** & Gol'dshtein, V. (2011). The Flammable Spray Effect on Thermal Explosion of a Combustible Gas-Fuel Mixture. *Combustion Science and Technology, 183(6), 519-539.*

9. **Nave, O.,** Gol'dshtein, V., Lehav, Y., & Bykov, V. (2011). Thermal Radiation Effects on Thermal Explosion in Polydisperse Fuel Spray-Probabilistic. *International Journal of Spray and Combustion Dynamics, 3(2), 45-68.*

10. **Nave, O.,** Gol'dshtein, V., & Dan, E. (2011). The Delay Phenomena in Thermal Explosion of Polydisperse Fuel Spray-Using the Method of Integral Manifolds. *Atomization and Spray, 21(1), 69-85.*

11. **Nave, O.,** Gol'dshtein, V., Bykov, V., & Lehavi, Y. (2011). Numerical Simulations Applying to the Analysis of Thermal Explosion of Organic Gel Fuel in a Hot Gas. *Fuel 90(11), 3410-3416.*

12. Neuman, Y., **Nave, O.,** & Dolev, E. (2011). Buzzwords on Their Way to a Tipping Point: A View from the Blogosphere. *Complexity, 16(4), 58-68.*

13. **Nave, O.,** Gol'dshtein, V., & Lehavi, Y. (2012). The Time Evolution of the Size Distribution of Droplets Effects on the Thermal Explosion of

Polydisperse Fuel Spray. *Applied Mathematics and Modeling, 36(3), 1068-1084.*

14. **Nave, O.,** Ajadi, S., & Lehavi, Y. (2012). Analysis of the Dynamics of Fuel Spray Using Asymptotic Methods: The Method of Integral Invariant Manifolds. *Applied Mathematics and Computation, 218(10), 5877-5890.*

15. **Nave, O.,** Gol'dshtein, V., & Lehavi, Y. (2012). Physical Continuous Model of Heating, Evaporation and Ignition of Polydisperse Fuel Droplets. *International Journal of Chemistry, (IJC), 4(3),* 61-72.

16. Neuman, Y., Cohen, J., Bekerman, Z., & **Nave, O.** (2012). A Generic Method for Measuring the Potential Number of Structure-Preserving Transformations. *Complexity, 18(1),* 26-37.

17. **Nave, O.,** Ajad, S., Lehavi, Y., & Gol'dshtein, V. (2013). Comparison of Homotopy Perturbation Method (HPM) and Method of Integral Manifold (MIM) on a Thermal Explosion of Polydisperse Fuel Spray System. *SIAM Journal on Applied Mathematics, 73(2), 929-952.*

18. **Nave, O.,** Hareli, S., Gol'dshtein, V. (2014). Singularly Perturbed Homotopy Analysis Method. *Applied Mathematics and Modeling, 38(19-20), 4614–4624.*

19. **Nave, O.,** Neuman, Y., Perlovsky, L. Howard, N. (2014). How Much Information Should We Drop to Become Intelligent? *Applied Mathematics and Computation, 245, 261-264.*

20. **Nave, O.,** Gol'dshtein, V. Ajad, S. (2015). Singularly Perturbed Homotopy Analysis Method Applied to the Pressure Driven Flame in Porous Media. *Combustion and Flame, 162(3), 864–873.*

21. Hareli, S. **Nave, O.** (2015) . Auto-detection of a Target by Eye Movement, *Complexity, 21(6), 452–459.*

22. **Nave, O.** (2015). Analysis of the Two-Dimensional Polydisperse Liquid Sprays in a Laminar Boundary Layer Flow Using the Similarity Transformation Method. *Advanced Modeling and Simulation in Engineering Sciences, 2(20), 1-15.*

23. **Nave, O.,** Lehavi Y., Ajadi S., Gol'dshtein V. (2016). Analysis of Polydisperse Fuel Spray Flame. *Heat and Mass Transfer, 53(2), 649-660.*

24. **Nave, O.** (2016). Analysis Combustion of Fuel Droplets Release to the Atmosphere Using Homotopy Analysis Method. *Cogent Mathematics, 3(1), 1-17.*

25. **Nave, O.,** and Gol'dshtein, V. (2016). A Combination Between Two Semi-analytical Methods Called: Singular Perturbed Homotopy Analysis Method, Applied to Combustion of Spray Fuel Droplets. *Cogent Mathematics, 3(1), 1-12.*

26. **Nave, O.,** Gol'dshtein, V., and Ajadi S. (2017). Mathematical Modelling of Spray Combustion-Numerical and Analytical Analysis with Application to Engineering Science. *Applied Physics Research, 9(1), 1-55.*

27. **Nave, O.** (2017) Singularly Perturbed Vector Field Method (SPVF) Applied to Combustion of Monodisperse Fuel Spray. *Differential Equations and Dynamical Systems, 27, 57–74.*

28. **Nave, O.,** Baron., Y., and Sharma M. (2018). A Semi-Analytical Method for Solving Problems on the Role of Prey Taxis in a Biological Control-Mathematical Model. *Journal of Multiscale Modelling, 10(2), 80-92.*

29. **Nave, O.** (2018). A New Method to Find the Base Functions Approximate the Solution that Received from the Method of Directly Defining the Inverse Mapping for Systems of Nonlinear Differential Equations. *Journal of Multiscale Modelling, 9(04), 101-134.*

30. **Nave, O.,** Elbaz., M. (2018). Method of Directly Defining the Inverse Mapping Applied to Prostate Cancer Immunotherapy-Mathematical Model. *International Journal of Biomathematics, 11(05), 123-198.*

31. **Nave, O.,** Hareli., S. (2018). Singular Perturbed Vector Field Method Applied to Combustion in Diesel Engine: Continuous Case with Thermal Runaway. *Applied Mathematical Modelling, 61, 604-617.*

32. **Nave, O.,** Elbaz., M. (2018). Combination of Singularly Perturbed Vector Field Method and Method of Directly Defining the Inverse Mapping Applied to Complex ODE System Prostate Cancer Model. *Journal of Biological Dynamics, 12(2), 961-986.*

33. **Nave, O.,** Elbaz., M., Hareli, S., Iluz, I. H., Bunimovich-Mendrazitsky, S. (2019). *BCG* and $IL-2$ Model for Bladder Cancer Treatment with Fast and Slow Dynamics Based on *SPVF* Method—Stability Analysis. *Mathematical Biosciences and Engineering, 16(5), 5346-5379.*

34. **Nave, O.,** Sharma M. (2019). Singular Perturbed Vector Field (SPVF) Applied to Complex ODE System with Hidden Hierarchy-Application to Turbocharger Engine Model. *International Journal of Nonlinear Sciences and Numerical Simulation, 21(1), 99-113.*

35. **Nave, O.** (2020) Adding Features from the Mathematical Model of Breast Cancer to Predict the Tumour Size. *International Journal of Computer Mathematics*, 5, *159-174.*

36. **Nave, O.** (2020) Modification of Semi-Analytical Method Applied System of ODE. *Modern Applied Science*. *14(6), 75-81.*

37. **Nave, O.,** Elbaz., M., Bunimovich-Mendrazitsky, M. (2020). Analysis of a Breast Cancer Mathematical Model by a New Method to Find an Optimal Protocol for HER2-Positive Cancer. *BioSystems, 38(197).*

38. **Nave, O.,** Hartuv., I., Shemesh., U. (2020). Θ-SEIHRD Mathematical Model of Covid19-Stability Analysis Using Fast-slow Decomposition. *PeerJ 8:e10019,* 1-13.

39. **Nave, O.** (2020). A Semi-analytical Method Applied to Turbocharger Engine Model. *Journal of Applied Research and Technology, 18(4), 178-186.*

40. **Nave, O.,** Elbaz., M. (2021) Artificial Immune System Features Added to Breast Cancer Clinical Data for Machine Learning (ML) Applications, *BioSystems.*

41. **Nave, O.**, Shemesh U., Israel H. (2021) Applying the Laplace Adomian Decomposition Method (LADM) for Solving a Covid-19 Model. *Computer Methods in Biomechanics and Biomedical Engineering, 24(14), 1618-1628.*

42. Hareli S., **Nave O.**, Gol'dshtein V. (2021) The Evolutions in Time of Probability Density Functions of Polydispersed Fuel Spray-The Continuous Mathematical Model, *Applied Science- Advances in Combustion Engineering, 11(20), 1-12.*

43. **Nave, O.** (2022) A Mathematical Model for Treatment Using Chemo-Immunotherapy, *Heliyon-Cell Press, 8(4), 1-16.*

44. **Nave, O.** & Moria Sigron (2022) A Mathematical Model for Cancer Treatment Based on Combination of Anti-Angiogenic and Immune Cell Therapies, *Results in Applied Mathematics, 16, 1-23.*

45. **Nave, O.** & Moria Sigron (2022) A Mathematical Model for the Treatment of Melanoma with the BRAF/MEK Inhibitor and Anti-PD-1, *Applied Science, Computational Intelligence in Bionformatics and Computational Biology, 12(23), 1-15.*

46. **Nave, O.**, Shor, Y., Bar, R. Bar, R., Segal, E. E., & Sigron, M. (2024) A new treatment for breast cancer using a combination of two drugs: AZD9496 and palbociclib. *Scientific Report Nature, 14(1307), 1-16.*

47. **Shlomo H. Nave O. Vladimire G. (2024)** Impact of a Polysidpersed Fuel Distribution on the Ignition Characteristic. . *Scientific Report Nature*

5.2 Presentations in Conferences

1. Nave, O., Gol'dshtein, V., & Bykov, V. *Influence of Assumed Drop Size Distribution on Model Predictions of Thermal Explosion in Statistically Homogeneous Spray Combustion with Highly Exothermic Reactions*. (WIP) The 24th Annual Symposium of the Israeli Section of the Combustion Institute. Carleton Hotel, Tel Aviv, December 16, 2009.

2. Nave, O. *Analytical Expression of Thermal Explosion Limit in Polydisperse Fuel Spray*. The 12th Israeli Mini-Workshop in Applied and Computational Mathematics, Ben-Gurion University, December 31, 2009.

3. Neuman, Y., Cohen, J., Kedma, G., & Nave, O. *A New Technology in Order to Extract the Meaning of Target Domain by Intelligent Web*. Innovation 2010. Ben-Gurion University of the Negev. April 15, 2010.

4. Neuman, Y., Cohen, J., Kedma, G., & Nave, O. *Using Web-Intelligence for Excavating the Emerging Meaning of Target-Concepts.* International Joint Conferences on Web Intelligence and Intelligent Agent Technologies. IEEE/WIC/ACM WI. Toronto, Canada, September 3, 2010.

5. Nave, O. *A Probabilistic Model of Thermal Explosion in Polydisperse Fuel Spray*. The 33rd International Symposium on Combustion. Tsinghua University, Beijing, August 1-6, 2010.

6. Bykov, V. Gol'dshtein, V., & Nave, O. *Thermal Explosion Sprays*. The 13th International Conference on Numerical Combustion. Corfu, Greece, April 27-29, 2011.

7. Nave, O. *About Thermal Explosion of Polydisperse Fuel Spray*. The 34th International Symposium on Combustion. Warsaw, Poland, July 29–August 3, 2012.

8. Nave, O., Gol'dshtein, V. *Singular Perturbad Homotopy Analysis Methods*. (WIP) The 26th Annual Symposium of the Israeli Section of the Combustion Institute. Carleton Hotel, Tel Aviv, December 13, 2012.

9. Ajadi, S., Nave, O., & Gol'dstein, V. *Oscillatory Dynamical Behaviour in Combustible Gas Bubble Using a Three Step Reaction Model*. MaCKie 2013, Mathematics in Chemical Kinetics and Engineering Conference. Madras, India, February 4-6, 2013.

10. Nave, O. *A New Analytical Method for Solving the Problem of Thermal Explosion in Polydisperse Fuel Spray*. MaCKie 2013, Mathematics in Chemical Kinetics and Engineering Conference. Madras, India, February 4-6, 2013.

11. Nave, O., Gol'dshtein, V. *Analytical Methods for Solving the Problem of Thermal Explosion of Polydisperse Fuel Spray System in the Form of Singularly Perturbed System*. SIAM: Fourteenth International Conference on Numerical Combustion. San-Antonio, Texas, USA, April 8-10, 2013.

12. Nave, O., Gol'dshtein, V. *Premixed Polydisperse Fuel Spray Flame Based on Droplet Size Moment*. (WIP) The 25th Annual Symposium of the Israeli Section of the Combustion Institute. Tel Aviv, December 27, 2013.

13. Nave, O., Gol'dshtein, V. *Polydisperse Fuel Spray Flame Based on Droplets Size Moment.* French-Italian Sections of the IFRF and the Combustion Institute. Piza, Italy, April 23-24, 2014.

14. Nave, O., Gol'dshtein, V. *Singularly Perturbed Homotopy Analysis Method Applied to Thermal Explosion of Polydisperse Fuel Spray*, The 35th International Symposium on Combustion, San-Francisco, California, USA, August 3-8, 2014.

15. Nave, O., Gol'dshtein, V. *Singularly Perturbed Homotopy Analysis Method Applied to the Pressure Driven Flame in Porous Media*. (WIP) The 24th Annual Symposium of the Israeli Section of the Combustion Institute. Dan-Panorama Hotel, Tel Aviv, December 10, 2015.

16. Nave, O., Gol'dshtein, V. *Singular Perturbed Homotopy Analysis Method Applied to Combustion of (Polydisperse) Fuel Spray*. EMN Meeting on Droplets 2016, Energy Materials Nanotechnology. San-Sebastian, Spain, May 9-13, 2016. I was the Invited Speaker.

17. Nave, O., Gol'dshtein, V. *Singularly Perturbed Vector Field Method Applied to Thermal Explosion of Polydisperse Fuel Spray,* (WIP). The 36th International Symposium on Combustion. SEOUL, Coex-Korea, July 31-Aug 5, 2016.

18. Nave, O., Gol'dshtein, V., *A Combination Between Two Semi-Analytical Method Called "Singularly Perturbed Homotopy Analysis Method, (SPHAM)" Applied to Monodisperse Fuel Spray,* (WIP). The 30th Annual Symposium of the Israeli Section of The Combustion Institute, Dan-Panorama Hotel, Tel Aviv, December 29, 2016.

19. Nave, O. *Singular Perturbed Homotopy Analysis Method.* BIT's 3rd Annual World Congress of Smart Materials. Bangkok,Thailand, March 16, 2017.

20. Nave, O. *A Combination Between Two Semi-Analytical Methods Called "Singularly Perturbed Homotopy Analysis Method, (spham)" Applied to Combustion of Spray Fuel Droplets*. International Conference on Numerical Combustion. Rozen Plaza Orlando, Florida, USA, April 3-5, 2017.

21. Nave, O. *Singularly Perturbed Vector Field Method (SPVF) Applied to Combustion of Monodisperse Fuel Spray*, (WIP). 31st Annual Symposium of the Israeli Section of the Combustion Institute, Dan Panorama, Tel Aviv, December 21, 2017.

22. Nave, O. *Singular Perturbed Vector Field Method (SPVF) Applied to ODE Systems.* 20th International Conference on Applied Mathematics. Bangkok, Thailand, February, 8-9, 2018.

23. Nave, O. *Singularly Perturbed Vector Field Method (SPVF) Applied to Combustion of Monodisperse Fuel Spray.* The 37th International Symposium on Combustion. The Convention Centre, Dublin, Ireland, July 29 - August 3, 2018.

24. Nave, O. *Singular Perturbed Vector Field Applied to Turbo Charge-Engine* (WIP). 32st Annual Symposium of the Israeli Section of the Combustion Institute, Dan Panorama, Tel Aviv, December 21, 2018.

25. Nave, O. *ML Applied to Breast Cancer Treatment*, The 3rd International Conference on Machine Learning and Intelligent Systems (MLIS 2021), November 8th-11th, 2021.

26. Nave, O. Analysis of a Breast Cancer Mathematical Model. Optimal Protocol for HER2+ BC, 7th Global Insight Conference on Breast Cancer, September 2022, Barcelona Spain.

27. Nave, O. Mathematical Model of Bacillus Calmette-Gurin (BCG) and interleukin 2 (IL-2) Immunotherapy for Bladder Cancer. 7th World Congress on CANCER RESEARCH AND THERAPY Oct 20 - 22, 2022 at Las Vegas, USA

6. Other Relevant Academic and Professional Activities (ad-hoc reviewer)

- I am a member of the Reviwers Board of Symmetry Journal. ***Symmetry*** (ISSN 2073-8994; CODEN: SYMMAM) is an international, peer-reviewed, open-access journal covering research on symmetry phenomena wherever they occur in mathematical and scientific studies. *Symmetry* is published monthly online by MDPI. High Visibility: it is indexed by the Science Citation Index Expanded (Web of Science) [search for "Symmetry-Basel"], Scopus, and other databases such as Chemical Abstracts (American Chemical Society), Current Contents - Physical, Chemical & Earth Sciences / Web of Science (Clarivate), dblp Computer Science Bibliography (Universität Trier), Inspec (IET), INSPIRE-HEP Search (High-Energy Physics Literature Database), io-port (FIZ Karlsruhe), SCIE / Web of Science (Clarivate), Scopus (Elsevier), Socolar (CEPIEC), Web of Science (Clarivate).

- I am a member of the Reviwers Board of Axioms Journal. ***Axioms*** (ISSN 2075-1680) is an international, peer-reviewed, open-access journal of mathematics, mathematical logic and mathematical physics, published quarterly online by MDPI. Indexing & Abstracting Services: dblp Computer Science, Bibliography (Universität Trier), DOAJ, ESCI / Web of Science (Clarivate), io-port (FIZ Karlsruhe), Scopus (Elsevier), Web of Science (Clarivate).

- I am an academis editor of the Special Issue "Mathematical Models: Methods and Applications" Symmetry journal

- I am a guset editor of Special Issue: Numerical analysis and Applied Mathematical Modelling, AIMS press.

  https://www.aimspress.com/math/article/6495/special-articles

- ***Ad-hoc reviwer:***

  I am a professional reviewer in the following journals:

  - *ISF Reviwer*
  - *Computer and Mathematics with Applications (Elsevier)*
  - *Mathematical Problems in Engineering, Computers and Mathematics with Applications*
  - *Physical Review & Research International*

- Heat and Mass Transfer (Springer)

- International Journal of Spray and Combustion Dynamics (SAGE Journals)

- DJ Journal of Engineering and Applied Mathematics

- Asian Journal of Mathematics and Computer Research

- Differential Equations and Dynamical Systems (DEDS) (Springer)

- Applied Thermal Engineering (Elsevier)

- Energy & Fuels (ACS Publicartions) (from 2017)

- Journal of Computational Physisc (Elsevier) (from 2018)

- Biophysical Reviews and Letters (World Scientific)

- Mathematical and Computer Modelling Dynamical Systems (Taylor & Francis)

- Mathematics (MDPI)

- Symmetry (MDPI)

- Computer Methods in Biomechanics and Biomedical Engineering (Taylor & Francis)

- Atomization and Sprays (Begell House)

- BioSystems (Elsevier)

- Advanced Theory and Simulations (Wiley)

- FEBS Open Bio

- Journal of Applied Mathematics and Computing (Springer Nature)

- Mathematical Biosciences and Engineering (AIMS Press)

- World Journal of Surgical Oncology (BMC)

- Physica Scripta (IOP)

- Bioinformatics and Biology Insights (SAGA)

- Physical Biology (IOP)

- Micromachines (MDPI)

- Combustion and Flame (CNF)

- Healthcare (MDPI)

- Communications in Nonlinear Science and Numerical Simulation (Elsevier)

- Diagnostics (MDPI)

- Behavioral Sciences (MDPI)

- Scientific Reports (Nature Publishing Group)

-IEEE Access Institute of Electrical and Electronics Engineers Inc.

- Results in Applied Mathematics (Elsevier)

- *Physics of Fluids(AIP)*

- Axioms *(MDPI)*

- *American Journal of Applied Sciences (Science Publication)*

- *Journal of Molecular Liquids (Elsevier)*

- *World Journal of Surgical Oncology (Springer Nature)*

- *International Journal of Applied Mathematics and Computer Science (Walter De Gruyter GmbH, AMCS)*

- *Biomedicines (MDPI)*

- *Biology (MDPI)*

- *International Journal of Environmental Research and Public Health (MDPI)*

- *American Journal of Animal and Veterinary Sciences (Science publication)*

- *New Astronomy (Elsevier)*

- *Therapeutic Advances in Cardiovascular Disease (SAGA Publication Ltd)*

- *Research in Mathematics (Taylor and Francis)*

- *Cancers (MDPI)*

- *Contemporary Mathematics (American Mathematical Society)*

- *Journal of Applied Mathematics (Hindawi Publishing Corporation)*

- *Results in Control and Optimization (Elsevier)*

- *International Journal of Applied and Computational Mathematics (Springer Nature)*

- *Acta Biotheoretica (Springer)*

- *Future Medicinal Chemistry (Taylor and Francis)*

- *Mathematical Methods in the Applied Sciences (Wiley)*

- *Engineering Applications of Artificial Intelligence (Elsevier)*

- *Chaos an interdisciplinary journal of nonlinear science (AIP publishing)*

- *Complexity (Wiley)*

- *Eurasian Economic Review (Springer)*

- *Mathematical and Computer Modelling of Dynamical Systems (Taylor & Francis)*

7. Research member

I was a member of a research team working on a project at BGU and financed by the Israel Ministry of Defence. The grant was made to the Faculty of the Humanities and Social Sciences and was under the supervision of Prof. Yair Nueman.

The Israel Ministry of Defense - Metaphor based meaning excavation 1 year - 300,000 NIS (approx. $83,000)