RayEleni Gourgou, PhD
Associate Research Scientist (Research Faculty)
Mechanical Engineering Department
Adjunct Lecturer, ArtsEngine
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Education

Doctor of Philosophy (Ph.D.) in Animal Cell Physiology; Department of Biology, National & Kapodistrian University of Athens, Greece.
Thesis: "Signal transduction mechanisms in marine invertebrates". **2011**

B.S. in Biology; Department of Biology, National & Kapodistrian University of Athens, Greece.
Research Thesis: "On the relation between energetics and tail autotomy capacity in greek [lizard] species of the genus *Podarcis*". **2003**

Academic Positions

University of Michigan (UM), United States

Associate Research Scientist, Mechanical Engineering **2022-today**

Lecturer, Adjunct, ArtsEngine, College of Engineering **2023-today**

Associate Director for Space Biology, Space Institute **2019-2023**

Assistant Research Scientist, Mechanical Engineering **2016-2022**

Senior Research Fellow, Ao-Lin Hsu Lab, Internal Medicine, Division of Geriatrics and Palliative Medicine, Medical School **2015-2016**
-Biology of aging, learning and memory in the context of aging

Senior Research Fellow, Bogdan Epureanu Group, Mechanical Engineering **2015-2016**
-Dynamics of neuronal networks and microbial populations; modelling of dynamical systems

Research Fellow, Nikos Chronis Lab, Mechanical Engineering **2011-2014**
-Microfluidics in neurobiology; functional imaging of neurons

National & Kapodistrian University of Athens (NKUA), Greece

Lab Assistant, Department of Biology **2005-2010**

Honors and Awards

A6. Willie Hobbs Moore Aspire, Advance and Achieve Award, UM Women in Science and Engineering (WISE). Award recognizes individuals who have served as an outstanding formal or informal mentor to students. EG selected *"because of [her] outstanding efforts to support the professional advancement of [her] many graduate and undergraduate student researchers and commitment to recruit students underrepresented in STEM"*, **2021**.

A5. Outstanding Team Presentation Award, Interstellar Initiative, New York Academy of Sciences (NYAS) and the Japan Agency for Medical Research and Development (AMED), New York City, NY, USA, **2019.**

A4. Career Development Award-K01, National Institutes of Health (NIH), National Institute of Aging (NIA): "Deciphering aging-driven cognitive decline in *C. elegans* spatial memory and learning through an interdisciplinary approach", **2018**.

A3. Travel Award, Institute for Mathematics and its Applications (IMA), Workshop for Women in Mathematical Biology, University of Minnesota, Minneapolis, MN, USA, **2018.**

A2. Honorary Oath Pronunciation, Commencement Ceremony of Doctorate Laureates, University of Athens, Greece, **2011**.

A1. Onassis Foundation Scholarship for *2003 Lectures in Biology,* Foundation of Research and Technology, Iraklion, Crete, Greece, **2003**.

Publications

underlined: student mentored by EG

Full articles in refereed journals[#]

J12. Gourgou E*., Mirzakhalili E., Zhang Y., Epureanu B., "The Effect of Internalized Paramagnetic Nanoparticles on *Caenorhabditis elegans* Locomotion in the Presence of Magnetic Field", ***: corresponding author**. *Journal of Nanomaterials*, vol. 2023, Article ID 1634691, https://doi.org/10.1155/2023/1634691, **2023**. IF: 3.371

J11. Cardoza S.N., Tse L.Y.L., Barton K., **Gourgou E.***: "3-dimensional arenas for the assessment of *C. elegans* behavior", ***: corresponding author**. *International Journal of Bioprinting,* http://doi.org/10.18063/ijb.v8i4.610, **2022**. IF: 6.638

J10. Sakelaris B., Li Z., Sun J., Banerjee S., Booth V., **Gourgou E.***: "Modelling learning in *C. elegans* chemosensory and locomotive circuitry for T-maze navigation", ***: corresponding author.** *European Journal of Neuroscience*, https://doi.org/10.1111/ejn.15560, **2022**. IF: 3.386

~Paper featured as "an invaluable contribution", along with Gourgou et al, 2021, in Al-Asmar, A., & Pérez-Escudero, A. (2022), How many neurons does it take to tell left from right? European Journal of Neuroscience, 1–3. https://doi.org/10.1111/ejn.15722

J9. Gourgou E.*#, Hsu A.-L.[#]: "A maze platform for the assessment of *Caenorhabditis elegans* behavior and learning", ***technical contact**, **[#]: co-corresponding author.** *STAR Protocols,* https://doi.org/10.1016/j.xpro.2021.100829, **2021**. IF: 1.344

J8. Gourgou E*., Adiga K., Goettemoeller A., Chen C., Hsu A-L*.: " *Caenorhabditis elegans* learning in a structured maze is a multisensory behavior", ***: co-corresponding authors**. *iScience*, 24 (4) 102284, doi: https://doi.org/10.1016/j.isci.2021.102284, **2021**. IF: 4.447

~Selected as featured content (3 research articles from a total of 126), in iScience issue 24(4), 2021.

~Paper featured as "of primal importance", along with Sakelaris et al, 2022, in Al-Asmar, A., & Pérez-Escudero, A. (2022), How many neurons does it take to tell left from right? European Journal of Neuroscience, 1–3. https://doi.org/10.1111/ejn.15722

J7. Mirzakhalili E., Epureanu B., **Gourgou E.***: "A mathematical and computational model for Ca^{2+} dynamics in *C. elegans* ASH sensory neuron", *PLoS ONE* 13(7): e0201302. https://doi.org/10.1371/journal.pone.0201302, ***: corresponding author**, **2018**. IF: 2.766

J6. Ghadami A., **Gourgou E.**, Epureanu B.: "Rate of recovery from perturbations as a means to forecast future stability of living systems", *Scientific Reports*, 8, 9271; doi: https://doi.org/10.1038/s41598-018-27573-0, **2018**. IF: 4.122

J5. Mirzakhalili E., **Gourgou E.**, Booth V., Epureanu B.: "Synaptic Impairment and Robustness of Excitatory Neuronal Networks with Different Topologies". *Frontiers in Neural Circuits 11:38.* doi: 10.3389/fncir.2017.00038; **2017**. IF: 3.005

J4. Gourgou E., Chronis N.: "Chemically induced oxidative stress affects ASH neuronal function and behavior in *C. elegans*". *Scientific Reports,* 6, 38147; doi: 10.1038/srep38147, **2016**. IF: 4.259

J3. Oliver R.C., **Gourgou E**., Bazopoulou D., Chronis N., Hart A.J.: "On-demand isolation and manipulation of *C. elegans* by *in vitro* maskless photopatterning". *PLoS ONE*, 11(1): e0145935. doi: 10.1371/journal.pone.0145935, **2016**. IF: 2.806

J2. Gourgou E., Aggeli I-K., Beis I., Gaitanaki C.: "Hyperthermia-induced Hsp70 and MT20 transcriptional upregulation is mediated by p38-MAPK and JNKs in *Mytilus galloprovincialis* (Lamarck); a pro-survival response". *Journal of Experimental Biology*, 213: 347-57, **2010**. IF: 3.040

J1. Kefaloyianni E., **Gourgou E**., Ferle V., Kotsakis E., Gaitanaki C., Beis I.: "Acute thermal stress and various heavy metals induce tissue-specific pro- or anti-apoptotic events via the p38-MAPK signal transduction pathway in *M. galloprovincialis*". *Journal of Experimental Biology*, 208:4427-36, **2005**. IF: 2.712

[#]*The Impact Factor (IF) indicated for each journal is the IF of the publication year, according to www.scijournal.org and Scopus.*

Invited journal publications

E1. Gourgou E.*, Willis A.R., Giunti S., De Rosa M.J., Charlesworth A.G., Hernandez Lima M., Glater E., Soo S., Pereira B., Akbaş K., Deb A., Kamak M., Moyle M.W., Traa A., Singhvi A., Sural S., Jin E.J..: "A journey to "tame a small metazoan organism", seen through the artistic eyes of *C. elegans* researchers". *Journal of Neurogenetics*, Special Issue: Nature's Gift to Neuroscience, DOI:10.1080/01677063.2020.183944 ***: corresponding author, 2020**. IF: 1.536

Publications in preparation

P8. Brooks N., Yang R., **Gourgou E**.*: "A second generation hydrogel 3D-printer for nematode behavioral experiments"; *in preparation*.

P7. Smith C.[#], Stewart S.[#], Sharba L.[#], **Gourgou E.***: "The effect of microgravity on *C. elegans* behavior", ***: corresponding author**, [#]: equal contributions; *in preparation*.

P6. Schiavone M. [#], Zhang Z.[#], **Gourgou E.***: "Anatomy of pirouettes in aging *C. elegans*", ***: corresponding author**, [#]: equal contributions; *in preparation*.

P5. Akbaş K.[#], Donato C. [#], Schiavone M. [#], Zhang Z.[#], Mummolo C.*, **Gourgou E.***: "Control theory and dynamical systems theory as comparative tools for locomotion analysis", ***: co-corresponding authors**, [#]: equal contributions; *in preparation*.

P4. Zhou Y., Bittner B., Kraus J., Schiavone M., **Gourgou E.***, Revzen S.*: "Nematode gait properties through the lens of a phase estimator", ***: co-corresponding authors**; *in preparation*.

P3. Ivanitskiy M., Booth V.*, **Gourgou E.***: "A neuromechanical model of synaptic plasticity and proprioceptive feedback in *C. elegans*", ***: co-corresponding authors**; *in preparation*.

P2. Gurevich M. *, **Gourgou E.***: "An interspecific exploration of learning, and spatial orientation via a transdisciplinary audiovisual performance", ***: co-corresponding authors**; *in preparation*.

P1. Gourgou E., A.L. Hsu: "Dietary restriction in interacting *C. elegans* populations", *in preparation*.

Presentations in refereed conferences

C26. Zhou Y., **Gourgou E**., Revzen S.: "Higher Phase Variation in Nematodes than in Cockroaches Implies CPG's Role as a State Estimator". SICB 2024, Society for Integrative and Comparative Biology, Seattle, WA, USA, **2024** (accepted) *****.

C25. Akbas K., Zhang Z., Donato C., Archer E., Schiavone M., Mummolo C., **Gourgou E.**: "Transdisciplinary exploration of the aging-driven locomotive decline in humans and nematodes". SICB 2023, Society for Integrative and Comparative Biology, Austin, TX, USA, **2023 ***.

C24. Berardi L., Fretz A., Brooks N., Yang R., **Gourgou E.**: "Maze learning and 3-dimensional spatial behavior are affected by age and prior experience". CeNeuro 2022, *C. elegans* Topic Meeting: neuronal development, synaptic function and behavior, Vienna, Austria, **2022 ***.

C23. Ivanitskiy M., Booth V., **Gourgou E.**: " Chemotaxis in a neuromechanical model of *C. elegans*", 50th Neuroscience meeting, Society for Neuroscience (SfN), Chicago, IL, USA, **2021 ***.

C22. Cardoza S., Tse LYL, Branch E., Barton, K., **Gourgou E.**: "3-dimensional behavioral arenas for *C. elegans*". 23rd *C. elegans* International Meeting, Genetics Society of America, virtual, USA, **2021 ***.

C21. Gourgou E.[#], Goettemoeller A., Chen C., Fretz A., Hsu AL[#].: "*C. elegans* learning strategy in T-mazes and aging-related interventions". 23rd *C. elegans* International Meeting, Genetics Society of America, virtual, USA, **2021 ***. **[#]: co-corresponding authors**.

C20. Sakelaris B.[1], Adiga K.[1], Goettemoeller A.[1], Chen C., Booth V., Hsu A.L.[#], **Gourgou E.**[#]: "*C. elegans* multisensory learning in simple T-mazes, as revealed by experiments and captured by mathematical models". 49th Neuroscience meeting, Society for Neuroscience (SfN), Chicago, IL, USA, **2019**. [1]: equal contributions; **[#]: co-corresponding authors (selected talk) ***.

C19. Gourgou E.[#], Adiga K., Goettemoeller A., Chen C., Hsu AL[#].: "Can *C. elegans* learn to navigate in a maze? A story of food-triggered, touch-governed spatial learning". 22nd *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2019 ***. **[#]: co-corresponding authors**

C18. Banerjee S., Dhiman V., Corso J., **Gourgou E.**: "Using computer vision to decipher *C. elegans* locomotion before and after training in T-mazes". 22nd *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2019***.

C17. Sakelaris B., Clayborn D., Booth V., **Gourgou E.**: "How do nematodes navigate in T-mazes? Mathematical models of the neuronal circuits that steer *C. elegans* learning and decision making". 22nd *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2019***.

C16. Cardoza S., Tse LYL, Barton, K., **Gourgou E.**: "Advancing behavioral arenas for small model organisms by 3D printing nematode growth medium". 22nd *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2019***.

C15. Ghadami A., **Gourgou E.**, Epureanu B.: "Rate of Recovery from Perturbations Reflects Future Stability of Natural Populations". ICCS, 9th International Conference on Complex Systems, Cambridge, MA, USA, **2018 (selected talk) ***.

C14. Gourgou E., Adiga K., Hsu AL.: "*C. elegans* learning and decision making in T-shaped mazes". *C. elegans* Topic Meeting-CeNeuro: Neuronal Development, Synaptic Function and Behavior, Madison, WI, USA, **2018 (selected talk) *.**

C13. Ghadami A., **Gourgou E.**, Epureanu B.: "Forecasting Critical Transitions and Bifurcation Diagrams of Natural Populations". American Physical Society (APS) March Meeting, Los Angeles, CA, USA, *Bulletin of the American Physical Society*, Abstract: P49.00005, **2018 (selected talk)**.

C12. Mirzakhalili E., Epureanu B., **Gourgou E.**: "A mathematical model for Ca^{2+} dynamics in *C. elegans* ASH sensory neuron". 21st *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2017***.

C11. Mirzakhalili E., **Gourgou E.**, Epureanu B.: "Synaptic Deficiencies and Robustness of Excitatory Neuronal Networks". International Conference of Mathematical Neuroscience 2017, Boulder, CO, USA, **2017***.

C10. Mirzakhalili E., **Gourgou E.**, Epureanu B.: "Transport by a kinesin in the presence of magnetic nanoparticles". Biophysical Society 59th Meeting, Baltimore, MD, USA, *Biophysical Journal*, Volume 108, Issue 2, Supplement 1, p137a, **2015**.

C9. Gourgou E., Mirzakhalili E., Epureanu B.: "Magnetic field effects on *C. elegans* locomotive behavior". 20th *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2015***.

C8. Gourgou E.[1], Oliver C.R.[1], Bazopoulou D., Chronis N., Hart A.J.: "Real-time behavioral study of *C. elegans* by dynamic *in situ* photopatterning of hydrogel assays". 20th *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2015***. **[1]equal contributions.**

C7. Gourgou E., Chronis N.: "Chemically induced oxidative stress affects ASH neuronal function & *C. elegans* behavior". 20th *C. elegans* International Meeting, Genetics Society of America, Los Angeles, CA, USA, **2015***.

C6. Oliver R.C., **Gourgou E**., Bazopoulou D., Chronis N., Hart A.J.: "Platform for *in-vitro* photo-patterning of whole animal *C. elegans* assays and behavior control". 18th International μTAS Conference, San Antonio, TX, USA, **2014***.

C5. Gourgou E., Bazopoulou D., Chronis N.: "Paraquat-induced oxidative stress affects the function of the ASH chemosensory neuron in *C. elegans*". *C. elegans* Neurobiology, European Molecular Biology Organization (EMBO) Conference Series, European Molecular Biology Laboratory (EMBL) Heidelberg, Germany, **2012***.

C4. Gourgou E., Meletiou A., Beis I., Gaitanaki C.: "Protection mechanisms against oxidative stress in *Mytilus galloprovincialis*". 25th Congress of the newEuropean Society of Comparative Biochemistry and Physiology, Ravenna, Italy, *Comparative Biochemistry and Physiology* Part A 151, Number 1/Suppl. pS9, doi: 10.1016/j.cbpa.2008.05.068, **2008**.

C3. Gourgou E., Beis I., Gaitanaki C.: "Transcription factors activation by hyperthermia in *Mytilus galloprovincialis*". 33rd FEBS Congress & 11th IUBMB Conference, Athens, Greece, *FEBS Journal*, 275 (Suppl.1) p122, PP2A-24, **2008**.

C2. Gourgou E., Gaitanaki C., Beis I.: "Thermal stress induces anti-apoptotic events via the p38-MAPK pathway in *Mytilus galloprovincialis*". 31st FEBS Congress, Istanbul, Turkey, *FEBS Journal,* 273 (Suppl.1) p114, PP-141, **2006**.

C1. Gourgou E., Kefaloyianni E., Gaitanaki C., Beis I.: "Heavy metals and thermal stress induce pro- and anti-apoptotic events via the p38-MAPK signal transduction pathway in *Mytilus galloprovincialis*". Cell Signaling World, Luxembourg, Luxembourg, **2006***.

***Items presented at conferences that do not publish formal proceedings (majority of biology-related conferences); oral and poster presentations appear only in the abstract book.*

Presentations in non-refereed conferences

N18. Bartimus H., Huang S., Rosas Chinea A., Sheckler C., Li S., **Gourgou E.**: "LuCelegans: a 3D, interactive installation of *C. elegans* nervous system". 9th Midwest *C. elegans* meeting, Detroit, Michigan, USA, **2023**.

N17. Schiavone M., Zhang Z., **Gourgou E.**: "Multiple event-based and bipedalism-inspired analysis of *C. elegans* locomotion". 8th Midwest *C. elegans* meeting, virtual, USA, **2021**.

N16. Fretz A., LaMonica A., Goettemoeller A., Chen C., Hsu A., **Gourgou E**.: "Aging-related genetic interventions in *C. elegans* maze learning". 8th Midwest *C. elegans* meeting, virtual, USA, **2021**.

N15. Goettemoeller A., **Gourgou E**., Hsu A.: "The effect of calorie restriction on *C. elegans* spatial learning in T-mazes". 7th Midwest *C. elegans* meeting, Ann Arbor, Michigan, USA, **2019**. *2nd place Best Poster Award*.

N14. Motheram H., Hsu A., **Gourgou E.: "**"Environmental and Systematic Factors that Influence *C. elegans* Behavioral Protocols". 7th Midwest *C. elegans* meeting, Ann Arbor, Michigan, USA, **2019**.

N13. Sakelaris B., Clayborn D., Booth V., **Gourgou E**.: "Building mathematical models to decipher the neuronal circuits that steer *C. elegans* learning and decision making in T-mazes". 7th Midwest *C. elegans* meeting, Ann Arbor, Michigan, USA, **2019**.

N12. Gourgou E.: "*C. elegans* neurobiology, behavior and biological systems dynamics". 6th Midwest *C. elegans* meeting, Ypsilanti, Michigan, USA, **2018**.

N11. Zhang Y., Mirzakhalili E., Epureanu B., **Gourgou E.:** "Internally localized magnetic fields affect *C. elegans* locomotion dynamics". 6th Midwest *C. elegans* meeting, Ypsilanti, Michigan, USA, **2018**.

N10. Hingorani R., **Gourgou E.:** "Toward barcoding individual worms". 6th Midwest *C. elegans* meeting, Ypsilanti, Michigan, USA, **2018**.

N9. Bazopoulou D., **Gourgou E**., Chronis N.: "A Microfluidic-Based, Drug Screening Platform for the *In Vivo* Discovery of Enhancers of Neuronal Function in Aged *C. elegans*". Society for Laboratory Automation and Screening 2014, 3rd Annual Conference & Exhibition, San Diego, CA, USA, **2014**.

N8. Gourgou E., Chronis N.: "Paraquat-induced oxidative stress affects the function of ASH chemosensory neuron in *C. elegans"*. 1st Michigan *C. elegans* meeting, Holland, Michigan, USA, **2013**.

N7. Simou C., Stathopoulou K., **Gourgou E**., Pafilis P., Gaitanaki C., Valakos E.: "Tail regeneration in lizards *Podarcis* and predation and habitat effect". Hellenic Society for Biological Sciences, 30th Scientific Conference, Greece, **2008**.

N6. Gourgou E., Gaitanaki C., Beis I.: "JNK-MAPKs and transcriptional factors activation in *Mytilus galloprovincialis*". Hellenic Society for Biological Sciences, 29th Scientific Conference, Greece, **2007**.

N5. Gourgou E., Gaitanaki C., Beis I.: "Seasonal thermal stress affecting signal transduction pathways in *M. galloprovincialis*". Hellenic Society for Biological Sciences, 28th Scientific Conference, Greece, **2006**.

N4. Gourgou E., Gaitanaki C., Beis I.: "Effect of oxidative and thermal stress on transcription and translation of Hsp70 and metallothioneins genes in *Mytilus galloprovincialis*". Hellenic Society for Biological Sciences, 27th Scientific Conference, Greece, **2005**.

N3. Gaitanaki C., Kefaloyianni E., Kotsakis E., Ferle V., **Gourgou E.,** Beis I.: "Effect of heavy metals on MAPKs signaling pathways of *Mytilus galloprovincialis*». Hellenic Society for Biological Sciences, 26th Scientific Conference, Greece, **2004**.

N2. Pafilis P., Sampson A., Stamatiou P., **Gourgou E**., Gaitanaki C., Valakos E.: "Temperature's influence on the digestive efficiency in *Podarcis peloponnesiaca* and *Podarcis erhardii*". 4th International Symposium on the Lacertids of the Mediterranean Basin, Menorca, Spain, **2001**.

N1. Stamatiou P., **Gourgou E**., Pafilis P., Valakos E.: "Temperature's influence on the digestive efficiency in greek lizards". Hellenic Society for Biological Sciences, 23rd Scientific Conference, Greece, **2001**.

Presentations in Internal (UM) symposia & workshops

O20. Goettemoeller A.#, Sakelaris B.#, Fretz A.#, LaMonica A.#, Chen C., Booth V., Hsu A-L., **Gourgou E.**: "*C. elegans* maze learning through the prism of aging". #: equal contributions. 14th Geriatrics Center Research Symposium, University of Michigan, Ann Arbor, MI, USA, **2021**.

O19. Jaimee M., **Gourgou E.**: "Data analysis of behavioral experiments recordings". UROP** Virtual Symposium, University of Michigan, Ann Arbor, MI, USA, **2020**. *Awarded UROP** Blue Ribbon, for "exemplary research presentation".*

O18. Branch E.**, Gourgou E.**: "Genetic background and training patterns in invertebrate spatial learning". UROP** Virtual Symposium, University of Michigan, Ann Arbor, MI, USA, **2020**.

O17. LaMonica A., **Gourgou E.**: "Behavior, maze navigation and spatial learning in *C. elegans* nematodes". UROP** Virtual Symposium, University of Michigan, Ann Arbor, MI, USA, **2020**.

O16. Abdul H., **Gourgou E.**: "Design and manufacturing of a 3D rotary microscope base", RISE+ Undergraduate Symposium, University of Michigan, Ann Arbor, MI, USA, **2019**.

O15. Sakelaris B.[1], Adiga K.[1], Goettemoeller A.[1], Chen C., Booth V., Hsu A.L.[#], **Gourgou E.**[#]: "*C. elegans* multisensory learning in simple T-mazes". Advances in Health and Aging Research Across the Translational Spectrum, Joint Symposium of University of Michigan-Michigan State University-Wayne State University, Ann Arbor, MI, USA, **2019**. [1]: equal contributions; [#]: corresponding authors.

O14. Motheram H., Hsu A., **Gourgou E.**: "Environmental and Systematic Factors that Can Influence *C. elegans* Behavioral Protocols". UROP** Symposium, University of Michigan, Ann Arbor, MI, USA, **2019**.

O13. Woodberry H., **Gourgou E.**: "Training patterns impact on *C. elegans* spatial learning". UROP** Symposium, University of Michigan, Ann Arbor, MI, USA, **2019**.

O12. Cardoza S., Tse LYL, Barton, K., **Gourgou E.**: "Advanced behavioral arenas for small model organisms by 3D printing nematode growth medium", Michigan Engineering Design Expo, Ann Arbor, MI, USA, **2019**.

O11. Cardoza S., Tse LYL, Barton, K., **Gourgou E.**: "Advancing behavioral arenas for small model organisms by 3D printing nematode growth medium", Michigan Undergraduate Research Symposium, UROP, Michigan Engineering Honors Program and Perch Education, Ann Arbor, Michigan, MI, USA, **2019**.

O10. Gourgou E.: "Tiny worms solve T-mazes to untangle spatial learning and aging", Advances in Health and Aging Research Across the Translational Spectrum, Joint Symposium of University of Michigan-Michigan State University-Wayne State University, Ann Arbor, MI, USA, **2018**.

O9. Mirzakhalili E., Epureanu B., **Gourgou E.**: "A mathematical and computational model for Ca^{2+} dynamics in *C. elegans* ASH sensory neuron", Institute for Mathematics and its Applications (IMA), Workshop for Women in Mathematical Biology, University of Minnesota, Minneapolis, MN, USA, **2018.**

O8. Gourgou E., Adiga K., Chen C., Hsu AL.: " *C. elegans* learning and decision making in T-shaped mazes", 12th Annual Geriatrics Center Research Symposium, University of Michigan, Ann Arbor, MI, USA, **2018**.

O7. Woodberry H., **Gourgou E.**: "Using mazes to explore spatial navigation and learning in worms". UROP** Symposium, University of Michigan, Ann Arbor, MI, USA, **2018**.

O6. Cardoza S., **Gourgou E.**: "Design and Production of Behavioral Assays on *C. elegans*". UROP** Symposium, University of Michigan, Ann Arbor, MI, USA, **2018**.

O5. Mirzakhalili E., **Gourgou E.**, Epureanu B.: "Data-driven computational model of the calcium dynamics in *Caenorhabditis elegans* ASH sensory neuron". Michigan Institute for Computational Discovery and Engineering (MICDE) Symposium, Ann Arbor, MI, USA, **2017**.

O4. Mirzakhalili E., **Gourgou E**., Epureanu B.: "Neuronal Network Robustness and Synaptic Deficiencies in the Brain". Advancing Precision Medicine through Complex Systems Biology Symposium, University of Michigan Center for Complex Systems, Ann Arbor, MI, USA, **2016**.

O3. Mirzakhalili E., **Gourgou E**., Epureanu B.: "Neuronal Network Robustness: Where to Look for Synaptic Deficiencies in the Brain". Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI, USA, **2016**.

O2. Gourgou E., Chronis N.: "A microfluidic platform used to study chemically induced oxidative stress on a *C. elegans* sensory neuron". 8th MBSTP Symposium (Microfluidics in Biomedical Sciences Training Program-University of Michigan), Ann Arbor, MI, USA, **2013**.

O1. Gourgou E., Bazopoulou D., Chronis N.: "A microfluidic device used to study the effects of oxidative stress on a *C. elegans* sensory neuron". 7th MBSTP Symposium (Microfluidics in Biomedical Sciences Training Program-University of Michigan), Ann Arbor, MI, USA, **2012**.

**UROP: Undergraduate Research Opportunity Program, University of Michigan.
+RISE: Research, Innovation, Service &Entrepreneurship program for undergraduate students, UM Mechanical Engineering.

Books

B2. Glenis S., Babilis N., **Gourgou E**., Oikonomou K.: "Biology", for Senior High School students (Patakis Eds, *in Greek*, ISBN: 960-16-0636-1, pages: 363), **2003.**

B1. Glenis S., **Gourgou E**., Evagelatou A., Babilis N.: "Biology", for Senior High School students (Patakis Eds, *in Greek*, ISBN: 978-960-16-0306-3, pages: 159), **2002.**

Invited Talks & Seminar Series

I9. "Neuromechanics of locomotion and neurogenetics of learning, a story for worms";43rd Scientific Meeting of the **Hellenic Society of Biological Sciences**, invited speaker, Alexandroupoli, Greece, **scheduled, 2024**.

I8. "Engineering for Deciphering Learning and Memory"; 3rd Latin American *C. elegans* Meeting, invited speaker, EMBO Workshop, **Universidad de Valparaiso, Chile**, and Centro Interdisciplinario de Neurociencia de Valparaiso, Valparaiso, Chile, **2023**.

I7. "Neuronal basis of learning, in the context of aging and 3-dimensional environment"; Chemical & Biomolecular Engineering Department Seminar Series, **North Carolina State University**, Raleigh, NC, **2023**.

I6. "Aging-driven decline of spatial learning and decision making in a nematode model system"; Aging Research Seminar Series, Michigan Medicine, **University of Michigan**, Ann Arbor, MI, **2023**.

I5. "*C. elegans* maze learning, a multidisciplinary approach of a multisensory behavior"; Neuroscience & Physiology Seminar Series, School of Biological Sciences, **Illinois State University**, Normal, IL, **2021**.

I4. "*C. elegans* navigation and learning in a structured environment, as revealed by experiments and mathematical models"; Biomedical Engineering Department Seminar Series, **New Jersey Institute of Technology**, New Jersey, NJ, **2020.**

I3. "*C. elegans* learning and decision-making in a structured environment"; Neurology/Neuroscience Seminar Series, **University of Michigan Medical School**, Ann Arbor, MI, **2019**.

I2. "Characterization of *C. elegans* spatial learning"; invited by J. Alcedo Lab, Dept. of Biological Sciences, **Wayne State University**, Detroit, MI, **2018.**

I1. "Investigating *C. elegans* neurophysiology and behavior under oxidative stress, and other stories"; invited by Bamber and Komuniecki Labs, Dept of Biology, **University of Toledo**, Toledo, OH, **2014**.

Science/Art Installations and Interdisciplinary Live Performances

Z2. Lu*Celegans*-The Interactive Worm Project. Medium-scale science/art interactive installation, featuring a 3D prototype of selected *C. elegans* neurons and neuronal circuits that can be activated by the viewer, with the use of stimulant proxies. Acrylic, vinyl, wood, LEDs, electroluminescent wires, 3D-printed resin, Arduinos, RFID sensors, heat sensors, conductive paper. **Role: Faculty director**.
Sponsor: ArtsEngine, FEAST/MDP, University of Michigan. **2019-today**.
To be hosted in the UM Museum of Natural History Experimental Gallery in 2025.

Z1. Soni*Celegans*-Sonification of learning and memory in mazes. Performance in two parts, a preperformance sensory installation, and a live performance with musical improvisation and interactive audiovisual elements. Preperformance: mixed media (video, audio recordings), wood, metal, yarn, plastic, glass, fabric, plant leaves, moss, paper. Live performance: Synthesizer, saxophone, tuba, cello, voice, mixed media (video, AI nematodes, behavioral experiments recordings). **Role: Faculty director**.
Sponsor: ArtsEngine, University of Michigan. Venue: Chip Davis Studio, School of Music, Theater, and Dance, UM. **2021**.
Collaboration with Michael Gurevich, Assoc. Professor, Performing Arts Technology, UM.

Teaching

ME: Mechanical Engineering; EECS: Electrical Engineering & Computer Science; CSE: Computer Science & Engineering; BME: Biomedical Engineering; UMSI: School of Information; LSA: College of Literature, Science, and the Arts; Med: Medical School, CoE: College of Engineering; PAT: Performing Arts Technology Dept; MCDB: Molecular, Cellular and Developmental Biology Dept

Course Teaching (University of Michigan, unless stated otherwise)

U2. UARTS 250/550 Creative Process. 4-credit course that enables students to explore the creative process through a structured sequence of exercises. Faculty from Art & Design; Music, Theatre & Dance; Architecture; and Engineering introduce a variety of creative strategies for generating problem solving ideas through hands-on projects. Course available to undergraduate and graduate students at all levels and in all disciplines. **W23, W24**

U1. UARTS 260/360/460/560. Project-oriented course, teams of students are working toward building Lu*Celegans*, or The Interactive Worm Project. This is a medium-scale science/art/engineering interactive installation, featuring a 3D prototype of the only nervous system known to science that has been fully mapped: the 302-neurons nervous system of the nematode *Caenorhabditis elegans*. Lu*Celegans'* teams include undergraduate and graduate students majoring in Mechanical Engineering, Electrical Engineering and Computer Science, Biomedical Engineering, Arts & Design, Information, Education, Neuroscience, and Music/Composition. **W20-F20, W21-F21, W22-F22, W23-F23, W24-F24**

Students' Mentoring (University of Michigan, unless stated otherwise)

~~Students' Awards and Scholarships~~ (students have been EG's research mentees at UM)

SA7 & SA8. Manali Desai and Jacob Hume, selected to be **the only two UM representatives for the National Arts Alliance for Research Universities (a2ru) Emerging Creatives Student Summit**, Washington DC, **2022**.

SA6. Cameron Smith, **Underwood-Alger Scholarship**, program based on merit and intended to provide support for students majoring in the biological sciences, **2022**.

SA5. Allison LaMonica, **Luce Family Internship Fund, LSA Internship Scholarship**, based on research statement and merit, **2021**.

SA4. Maria Schiavone, **William Mirsky Memorial Fellowship**, presented to two U-M ME Master's students who have shown outstanding research and high academic achievement, **2020**.

SA3. Jaimee Moline, **Blue Ribbon,** for "exemplary research presentation", UROP** Virtual Symposium, University of Michigan, Ann Arbor, MI, USA, **2020**.

SA2. Anne Goettemoeller, **2nd place Best Poster Award**, 7th Midwest *C. elegans* meeting, Ann Arbor, Michigan, USA, **2019**.

SA1. Steel Cardoza, **UM Club of Grand Traverse Scholarship**, based on academic performance and socioeconomic criteria, **2018 & 2019**.

**UROP: Undergraduate Research Opportunity Program, University of Michigan.

~~~Dissertation Committees~~~

D4. Elizabeth Dean, Molecular & Integrative Physiology, UM Med School; Chair: S. Leiser, "Sensory perception regulates fmo-2 induction in peripheral tissues to extend lifespan" (tentative); **Committee member**, **in progress**.

D3. Amin Ghadami, ME; Chair: B. Epureanu, "Anticipating Bifurcations for Identifying Dynamic Characteristics of Complex Systems"; **Committee member**, **2019**.

D2. Ehsan Mirzakhalili, ME; Chair: B. Epureanu, "Dynamics of neural systems: From Intracellular Transport in Neurons to Network Activity"; **Committee member**, **2018**.

D1. Amrita Ray-Chaudhury, BME; Chair: N. Chronis, "Bio-Micro-Systems for Diagnostic Applications, Disease Prevention & Creating Tools for Biological Research"; **Committee member**, **2018**.

~~~Graduate students~~~

~PhD students (collaboration on project independent of PhD topic)

S78. Kubra Akbas, Biomedical Engineering, New Jersey Institute of Technology: "Comparative study of aging-driven locomotion dynamics", **Mentor**; PhD Advisor: Xianlian (Alex) Zhou, **2021-2023.**

S77. Brian Bittner, EECS: "Geometric gait optimization tools to decipher *C. elegans* locomotion", **Mentor**; PhD Advisor: Shai Revzen (EECS), **2018-2021.**

S76. Shurjo Banerjee, EECS: "Computer vision and video analysis to decipher *C. elegans* behavior in mazes", **Mentor**; PhD Advisor: Jason Corso (EECS), **2018-2020**.

S75. Vikas Dhiman, EECS: "Computer vision and video analysis to decipher *C. elegans* behavior in mazes", **Mentor**; PhD Advisor: Jason Corso (EECS), **2018**.

~Master's students (**Mentor**, unless stated otherwise)

S74. Zihan Zhou, "Exploring the assumptions and parameters of a neuromechanical model for nematode locomotion", **2022.**

S73. Kaisheng Li, "Design of Random Positioning Machine (RPM) and sample module for Space Biology studies of the nematode *C. elegans*", **2022-2023.**

S72. Ray Yang, "Second generation hydrogel-extruding 3D printer for use in nematode behavioral experiments", **2021-2022**.

S71. Zhaoyuan Zhang, "A nematode tracking algorithm for aging studies", **2020-2022**.

S70. Maria Schiavone, "*C. elegans* locomotion features affected by aging and genetic background", **2019-2020.** *William Mirsky Memorial Fellowship, 2020: Presented to two U-M ME Master's students who have shown outstanding research and high academic achievement.*

S69. Srinivasa Cheekati,"A custom system for 3D imaging of behavioral assays", **2020**; Sponsor, **2021**.

S68. Jiawei Sun, "Data analytics on neurobiology behavioral experiments", **2019-2020**.

S67. Zongyu Li, "Data analytics and tracking algorithms on neurobiology behavioral experiments", **2019-2020**.

S66. Snehal Prabhudesai, "*C. elegans* locomotion and mechanical forces", **2019**.

S65. Bo Xue, "Using image processing and machine learning to identify fluorescent worms", **2018-2019**.

~~~Post-graduation research assistants~~~ (**Mentor**, unless stated otherwise)

S64. Michael Ivanitskiy, Graduate of Dept of Mathematics: "Modeling *C. elegans* synaptic plasticity and proprioceptive feedback", **Shared mentoring** with Prof. Victoria Booth, Dept of Mathematics, **2021-2022**.

S63. Abrielle Fretz, Graduate of Dept of Integrative Physiology & Molecular Biology: "*C. elegans* spatial behavior in the context of aging and lifespan extension", **2019-2022**.

~~~Visiting Research Assistants~~~ (**Mentor**, unless stated otherwise)

S62. Marie-Beatrix Kruth, Internal Medicine Dept, Medical School: "Spatial navigation in *C. elegans*", **Co-mentor**; Advisor: A-L. Hsu (Med), **2017**.

S61. Chieh Chen, Internal Medicine Dept, Medical School: "Using mazes to study memory and aging in *C. elegans*", **Co-mentor**; Advisor: A-L. Hsu (Med), **2016.**

~~~Mixed Teams of Graduate & Undergraduate Students~~~ (**Mentor**)

S56-S60. FEAST (Faculty Engineering & Arts Student Team), group of **5 students**: Ray Yang (ME Master's), Taylor Gilbert (ME/CSE), Andres Rosas Chinea (ME), Sara Huang (Neuroscience), one more student (recruitment in progress). "LuCelegans: The Interactive Worm Project-Phase 4", **2022-2023.**

S50-S55. FEAST/MDP (Faculty Engineering & Arts Student Team & Multidisciplinary Design Program), group of **6 students**: Taylor Gilbert (ME/CSE), Andres Rosas Chinea (ME), Richard Wall (ME), Sara Huang (Neuroscience), Mirella Hernandez Lima (Neuroscience PhD), Indigo Knecht (SMTD Master's). "LuCelegans: The Interactive Worm Project-Phase 3", **2022**.

S46-S49. ArtsEngine Interdisciplinary Project, group of **4 students**: Indigo Knecht (Music in Composition Master's student), Jacob Hume (EECS/PAT), Samuel Uribe-Botero (Biopsychology, Neuroscience & Cognitive Science/PAT), Faulkner Bodbyl-Mast (Sound Engineering/EECS), "Soni*Celegans*-and beyond: sonification of nematode learning & memory", **Shared mentoring** with Assoc. Professor Michael Gurevich, (PAT), School of Music, Theater & Dance (SMTD), **2021**.

S41-S45. FEAST/MDP (Faculty Engineering & Arts Student Team & Multidisciplinary Design Program), group of **5 students**: Sara Huang (LSA), Jaehong Min (CoE), Alexander Reynolds (BME), Mirella Hernandez Lima (Neuroscience PhD), Richard Wall (ME). "LuCelegans: The Interactive Worm Project-Phase 2", **2021**.
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~~~Undergraduate students~~~

Role: Mentor

S41. Leo Li, EECS, "Hands-free control of a microscope stage", **2023**.

S40. Boning Cai, EECS, "Hand-free control of an accessible microscope", **2023**.

S39. Oliver Kozler, Neuroscience, "The effect of sensory enriched environment on learning healthspan", **2023-today**.

S38. Haoyu Du, Mathematics, **shared mentoring** with Prof. Victoria Booth, Dept of Mathematics, "A Python code for a nematode neuromechanical model", **2022**.

S37. Noah Brooks, ME, "Hydrogel-printing 3D printer for use in nematode behavioral experiments", **2021-2022**.

S36. Cameron Smith, LSA, "*C. elegans* egg-laying behavior in microgravity conditions", **2021-2022**. *Underwood-Alger Scholarship, 2022: This scholarship program is based on merit and intended to provide support for students majoring in the biological sciences.*

S35. Leen Sharba, LSA, "*C. elegans* mechanosensation in microgravity conditions", **2021-2022**.

S34. Silas Stewart, LSA, "Effect of microgravity on *C. elegans* locomotion", **2021-2022**.

S33. Shuang Di Zhang, LSA, "*C. elegans* maze learning and aging", **2021-2022**.

S32. Lindsay Berardi, LSA, "Impact of prior 3D experience on *C. elegans* maze learning", **2021-2022**.

S31. Zijun Yuan, "Mapping Nematode Growth Medium properties for 3D-printing", **2020**.

S30. Eric Chandler, "gCode and parsers for use with custom hydrogel-based 3D printer", **2020**.

S29. Hongru Lu, "Coding for use with a customized hydrogel-using 3D printer", **2020-2021**.

S23-S28. ArtsEngine, multidisciplinary group of **6 students** (Fee Cristoph, Arts&Design & CSE; Manali Desai, UMSI and Arts&Design; Amanda Taylor, Arts&Design and Socio-Anthropology; Melinda Li, ME; Richard Wall, ME; Jiwen Chen, ME): "LuCelegans: a 3-dimensional, interactive prototype of *C. elegans* connectome-Phase 1", **2019-2020**.

S22. Emily Branch, LSA: "Genetic background and training patterns in invertebrate spatial learning", UROP** student, **2019-2020**; Assistant in Research, **2020-2021.**

S21. George Grosvenor, LSA: "Behavior, maze navigation and spatial learning in *C. elegans*", UROP** student, **2019-2020.**

S20. Allison LaMonica, LSA: "Behavior, maze navigation and spatial learning in *C. elegans* nematodes", UROP** student, **2019-2020**; UROP** Research Scholar, **2020-2021**. *Luce Family Internship Fund, LSA Internship Scholarship for Spring and Summer 2021.*

S19. Jaimee Moline, BME: "Data analysis of behavioral experiments"; UROP** student, **2019-2020.**

S18. Robert Martinez, ME: "Design & manufacturing of a 3D rotary microscope base", **2019**.

S17. Abdul Hasib, ME:"Design & manufacturing of a 3D rotary microscope base", RISE+ student, **2019**.

S16. Himaja Motheram, LSA: "Systematic and environmental factors that affect *C. elegans* behavioral assays", UROP** student, **2018-2019**.

S15. Steel Cardoza, MSE: "3D printing technology and design for exploring spatial navigation and learning in *C. elegans*", UROP** student, **2017-2018**; Assistant in Research, **2018-2020**. *UM Club of Grand Traverse Scholarship, 2018 & 2019.*

S14. Bennet Sakelaris, Applied Mathematics Honors Program, Dept of Mathematics: "Modeling *C. elegans* sensory and locomotion neural circuits, involved in learning", **Shared mentoring** with Prof. V. Booth, Dept of Mathematics, **2018-2020**.
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S13. Drew Clayborn, Mathematics: "Modeling *C. elegans* locomotion neural circuit", **Shared mentoring** with V. Booth, Dept of Mathematics, **2018**.

S12. Hijiri Woodberry, BME: "Using mazes to explore spatial learning and memory after training in *C. elegans*", UROP** student, **2017-2018**; UROP** Research Scholar, **2018-2019**.

S11. Rahul Hingorani, EECS: "Fluorescent labelling of *C. elegans* populations", Assistant in Research, **2017-2018.**

Role: Co-advisor

S10. Lamia Ahmed, MCDB, Neuroscience Program: "Spatial learning in aging *C. elegans*", **Co-advisor**; Mentor: A-L. Hsu (Medical School), **2017-2018.**

S9. Anne Goettemoeller, Neuroscience Honors Program: "Timeframe of short-term spatial memory retention in *C. elegans*", **Co-advisor**; Mentor: A-L. Hsu (Medical School), **2016-2019.**

S8. Yang Zhang, EECS: "*C. elegans* locomotion dynamics: tracking algorithms and data analysis", **Co-advisor**; Mentor: B. Epureanu (ME), SURE*** student, **2016-2017.**

S7. Kavya Adiga, MCDB: "Memory and spatial navigation in *C. elegans*", **Co-advisor**; Mentor: A-L. Hsu (Medical School), **2015-2017.**

S6. Syeda Maisa, ME: "Recording, analyzing and processing a model organism's locomotion under magnetic field", **Co-advisor**; Mentor: B. Epureanu (ME), SURE*** student, **2015**.

**UROP: Undergraduate Research Opportunity Program, University of Michigan.
***SURE: Summer Undergraduate Research in Engineering, University of Michigan.
†RISE: Research, Innovation, Service and Entrepreneurship program for undergraduate students, Mechanical Engineering Dept, University of Michigan.

Role: Lab supervisor (Dept of Biology, University of Athens, Greece)

S5. Anastasia Meletiou: "Antioxidant enzymes under stress in *M. galloprovincialis*", **2006-2008.**
S4. Andriani Paraschi: "Apoptotic mechanisms under stress in *M. galloprovincialis",* **2006-2008.**
S3. Ismini Papanikolaou: "Signal transduction and seasonal stress in *M. galloprovincialis",* **2003-2005.**
S2. Vicky Nikolaidou: "Upregulation of heat shock protein HSP70 in *M. galloprovincialis*", **2003-2005.**
S1. Panayiota Makri: "Oxidative stress and apoptosis in *M. galloprovincialis*", **2003-2005.**

Guest Lectures

L5. "Engineering inspired by Neuroscience and Sensory Biology", Course: Special Topics on Robotics, Mechanical Engineering Dept & Robotics Dept, W**2023**.

L4. "Navigation and nonvisual sensory modalities", Course: BioInspiration, Mechanical Engineering Dept & Robotics Dept, W**2021,** W**2022**.

L3. "Microfluidics in Mechanobiology" and "Droplet microfluidics applications in biochemistry and molecular biology", 2 lectures; Course: BioMicroElectroMechanical Systems, Mechanical Engineering Dept, W**2020**. *Teaching evaluations available; Overall mean score: 4.9/5*

L2. "Mechanobiology of small invertebrate animal models", 1 lecture; Course: Cellular Engineering, Mechanical Engineering Dept, W**2018**.

L1. "Emerging Topics in Bioengineering & Bioinspired Design", 1 lecture; Course: Building Ecology, Taubman College of Architecture and Urban Planning, W**2014**.

Short courses, workshops and lab courses

W5. K proposals Award Writing Workshop Series, Michigan Institute for Clinical and Health Research (MICHR): **Faculty Facilitator and Mentor**, Ann Arbor, MI, USA, **2020, 2021**(virtual).

W4. Undergraduate Education Workshops Program, Undergraduate Research Opportunity Program (UROP), University of Michigan, Brown Bag Speakers Series; Session topic: "Interdisciplinary Research in Biological Sciences", Ann Arbor, MI, USA, **2019**.

W3. "High-Impact Principles and Practices for STEM Education" online course (HIPP4STEM), University of Michigan Center for Research on Learning and Teaching (CRLT): **Mentor**, Ann Arbor, MI, USA, **2016**.

W2. Animal Physiology, lab series: **Lab assistant,** University of Athens, Greece, **2004-2008**.

W1. Immunology, lab series: **Lab assistant,** University of Athens, Greece, **2004-2008**.

Other mentoring and teaching activities

T2. Mock Study Section for NIH & VA proposals, UM Medical School Research Education Core Retreat, UM Pepper Center-Michigan Alzheimer's Disease Center Retreat, **proposal reviewer**, **2019**.

T1. Biology tutor for Senior High School students, **2003-2010**.

Funding

F11. NIH-National Institutes of Health, **K01 Career Development Award**, National Institute on Aging (**NIA**):
"Deciphering aging-driven cognitive decline in *C. elegans* spatial memory and learning through an interdisciplinary approach", K01 AG057833
Role: **PI,** Amount: $566,000 **7/2018-3/2023**

F10. U-M Space Institute, Pathfinder Grant: "The effect of microgravity on a nematode model organism behavior and physiology",
Role: **PI**, Amount: $5,000 **9/15/2022-5/31/2023**

F9. FEAST/MDP (Faculty Engineering Art Students/Multidisciplinary Design Program), University of Michigan:
"LuCelegans: The Interactive worm Nervous System",
Role: **PI**, Amount: $4,000 **1/1/2021-5/31/2022**

F8. NIH-National Institutes of Health, Health & Human Services, Research Training Grant F32:
"Chemosensation of death conspecifics modulates neural signaling and lifespan in *Caenorhabditis elegans*", F063571
Role: **Participating Investigator without Specified Effort**, PI: M. Truttmann, UM Medical School
Amount: $90,065.00, Share: NA **5/1/2022-4/30-2024**

F7. ArtsEngine Interdisciplinary Project, **University of Michigan**:
"SoniCelegans-and beyond: sonification of nematode learning & memory",
Role: **PI**, (co-PI: M. Gurevich, Performing Arts & Technology); Amount: $10,000, **6/2021-8/2021**.

F6. Claude D. Pepper Older Americans Independence Center (OAIC), **University of Michigan Medical School**, and **University of Michigan Geriatrics Center**; Pilot Grant:
"Exploring the impact of neuronal vulnerability to aging-related disorders on spatial learning in *C. elegans* model organism",
Role: **PI**, Amount: $40,000 **7/2019-8/2021**

F5. ArtsEngine, **University of Michigan**, Interdisciplinary Faculty Research Grant Award: "LuCelegans: Light-up 3-dimensional interactive prototype of *C. elegans* connectome", Role: **PI**, Amount: $3,000 **11/2019-12/2020**

F4. University of Michigan Office of Research (UMOR) Faculty Grants and Awards Program: "3D-printing Agar-Based Hydrogel for use in *C. elegans* Behavioral Assays", Role: **PI**, Amount: $27,000 **9/2018-4/2020**

F3. Japan Agency for Medical Research & Development (AMED), Interstellar Initiative Funding Award for further proposal development:
"Aging-driven decline of cognitive and motor behaviors through an interdisciplinary approach", Role: **co-PI**, (PI: Teppei Matsui, University of Tokyo School of Medicine; co-PI: Carlotta Mummolo, New Jersey Institute of Technology), Amount: $21,000; share: $7,000 **10/2019-3/2020**

F2. University of Michigan Office of Research (UMOR) Faculty Grants and Awards Program: "Organizing the 7th Annual Midwest *C. elegans* Meeting",
Role: **Collaborator**, PI: Scott Leiser, Molec. & Integr. Physiology, UM Medical School
Amount: $5,000 **Spring 2019**

F1. University of Michigan Office of Research (UMOR) Faculty Grants and Awards Program: #U055203 "A novel way to individually label model organism *C. elegans* populations", Role: **PI**, Amount: $30,000 **1/2017-8/2018**

Pending

G2. NSF-National Science Foundation, Directorate of Biological Sciences.
"Dynamic integration of proprioceptive input in *C. elegans* maze learning circuitry".
Role: **PI**. Co-PI: Victoria Booth, Dept of Mathematics, UM. Amount requested:~ $813,000.

G1. NIH-National Institutes of Health, National Institute on Aging.
"The role of tactile input and dopamine signaling in aging-driven decline of spatial learning".
Role: **PI**. Amount requested: ~$1.5M

Service ~~~~~~

~External (non-UM)

V5. Reviewer

iii. NIH-National Institutes of Health, Early Career Reviewer (ECR), National Institute on Aging, **2022**

ii. NSF-National Science Foundation, *ad hoc*, Division of Integrative Organismal Systems (IOS), **2020**

i. Scientific journals (*Publons record available*) **2018-today**

- -STAR Protocols (Protocols from all areas of life, health, earth, and physical sciences)-2022
- -Scientific Reports (Natural Sciences, Psychology, Medicine, and Engineering)-2022
- -Frontiers in Behavioral Neuroscience (Neuroscience)-2022
- -eLife (Biological and Medical Sciences)-2021, 2022, 2023
- -Communications Biology-Nature Group (Biological Sciences)-2020
- -Journal of Visualized Experiments, JoVE (Biology, Physical Sciences)-2020
- -RSC Advances-Royal Society of Chemistry (Chemical Sciences & multidisciplinary areas)-2019
- -PLOS ONE (Interdisciplinary, Science and Medicine)-2018

V4. Scientific Conferences & Meetings

A) Organizer

i. 7th Midwest *C. elegans* meeting, Ann Arbor, MI, **2019**. Co-organizers: Scott Leiser, UoM Medical School; Hannah Seidel, Eastern Michigan University (125 attendees from 22 institutions at 4 states, 8 corporate sponsors).

B) Session Chair/co-Chair

ii. 3rd Latin American *C. elegans* Meeting, Valparaiso, Chile, **2023**
i. Genetics Society of America, 22nd *C. elegans* International Meeting, Los Angeles, CA, **2019**.

C) Poster Judge

iv. 3rd Latin American *C. elegans* Meeting, Valparaiso, Chile, **2023**
iii. Genetics Society of America, *C. elegans* International Meeting, Los Angeles, CA, **2015-2019**.
ii. Midwest *C. elegans* meeting, 6th Annual Meeting, Ypsilanti, Michigan, **2018, 2023.**
i. University of Michigan, UROP Symposium, Undergraduate Research Opportunity Program, **2018**.

D) Poster session organizing committee

i. Hellenic Society for Biological Sciences, Annual Scientific Conference, Greece, **2005-2008**.

~Internal (UM)

V5. Mechanical Engineering Department Advisory Committee, Research Faculty representative, **2022-2024**.
V4. University of Michigan Space Institute (SI), Executive Committee, and **Associate Director for Space Biology** (the only ME faculty serving on SI Exec Comm); **2019-today**.
V3. University of Michigan Women in Science & Engineering (WISE), Willie Hobbs Moore Awards Selection Committee, **2022**.
V2. **College of Engineering non-evaluative representative**, research-track candidates (4), **2020-today**.
V1. **Mechanical Engineering Dept**, Host of three visitors for the Departmental Seminar Series:
iii. Adriana San Miguel, Assistant Professor, North Carolina State University, **2021**.
ii. Carlotta Mummolo, Assistant Professor, New Jersey Institute of Technology, **2020**.
i. Eduardo Izquierdo, Assistant Professor, University of Indiana at Bloomington, **2018**.

Outreach~~~~~~

H3. Skyline High School, Ann Arbor, MI, Women In Science and Engineering (WISE) Students' Club: Invited presentation and discussion with students, **2022.**

H2. High school volunteer students' supervision and mentoring:
i. Yash Mehta, North Farmington High School, Farmington Hills, MI; Simulations of *C. elegans* chemotaxis model, **2021-2022**.
ii. Tanisha Panchal, Troy High School, Troy, MI; Neuroscience and the biology of aging: Interplay with Space Biology, and the use of *C. elegans* as a model system, **2021-2022**.
iii. Audrey Wu, Huron High School, Ann Arbor, MI; Familiarization with microscopy techniques and *C. elegans* biology, **2019-2020**.

H1. K-12 Spring NanoCamp: Lab presenter in K-12 outreach event, National Foundation of Science-funded National Nanotechnology Infrastructure Network, Lurie Nanofabrication Facility–University of Michigan, **2014**.

Activities for the promotion of Diversity, Equity, and Inclusion~~~~~~~~~~~~~~

~Research projects

Y12. The Accessible Microscope Project, on designing and building a hands-free microscope, accessible to people with upper limb impairment, **2023-ongoing**.

~Recruiting and equitable mentoring

Y11. Active recruiting and mentoring of people who are historically underrepresented in STEM. Efforts recognized by being awarded the **2021 Willie Hobbs Moore Aspire, Advance and Achieve Award**, -**ongoing**.

Y10. 1st Generation Engineering Program, faculty mentor, **2018-ongoing**.

Y9. U-M College of Engineering Graduate Society of Women Engineers Female Faculty-Student Mixer, faculty panelist, **2018-ongoing**.

~Outreach

Y8. Targeted outreach activities, to inform and encourage participation in **STEM of female-identifying high school students** (see H3, H2 ii and iii), **2019-2022**.

Y7. Women and Gender Minorities group in Mechanical Engineering (WaGMiME), Fireside Chats Series faculty speaker, **2023**.

~Self-education and training

Y6. How to Combat AntiBlackness, UM student panel, organized by the Sankofa Project, **2023.**

Y5. Disability in Higher Education, a seminar on the plight of those with disabilities, chronic illnesses and/or neurodivergences in higher education, DEI Seminar Series, CoE, **2022**.

Y4. How Do We Begin: A Historical Reckoning with Anti-Black Racism at U-M, CRLT Players Session for Faculty/Staff, series of theatrical case studies exploring topics related to advancing equity in higher education spaces, **2022**.

Y3. Intercultural Competency Workshop, U-M Rackham School of Graduate Studies, **2021**.

~Efforts to increase diversity and inclusion in the broader community

Y2. Invited presentation at the 2023 ME Department Retreat on DEI in Teaching, "The Accessible Microscope: a microscope for people with disabilities", Ann Arbor, MI, **2023**.

Y1. ME Department Seminar Series, inviting colleagues from the Hispanic and Latinx community, and female-identifying individuals (see V1), **2019-2021**.

News-Press-Media~~~~~~

X3. Simons Foundation News webpage: Plasticity and the Aging Brain, article titled "In Aging Worms, a Window Into Cognitive Decline", featuring the findings and contributions of selected *C. elegans* neurobiologists who are studying aging and cognitive decline; **2021**.

X2. New York Academy of Sciences Newsletter: Building Transformative Collaborations to Address Society's Challenges-Finding a Common Research Language and a New Approach to Studying Aging; article featuring EG and winning team mates, sharing their experience on forging international collaborations; **2020**

X1. A **YouTube video** with some of the behavioral arenas we created for our paper Oliver R.C., **Gourgou E**., Bazopoulou D., Chronis N., Hart A.J.: "On-demand isolation and manipulation of *C. elegans* by *in vitro* maskless photopatterning". *PLoS ONE*, 11(1): e0145935. doi: 10.1371/journal.pone.0145935, **2016**.

Other Activities and Skills~~~~~~

~Mentoring

Q7. Mentoring junior research faculty in ME and Robotics Departments, College of Engineering, **2022-ongoing**.

Q6. Worm Maze Behavior group: Coordinator of monthly meetings of all students across campus (College of Engineering, Medical School, LSA) who work on the *C. elegans* spatial learning project, **2017-ongoing**.

~Arts/Engineering/Science Integration

Q5. Alliance for the Arts in Research Universities-a2ru, National Conference, Ann Arbor, MI, **2022**.

Q4. Science as Art Competition, ArtsEngine-UM, Faculty Panelist and Faculty Mentor/Judge, **2021**.

Q3. U-M Arts Initiative, Interdisciplinary Faculty Town Hall, Faculty Panelist, **2020**.

~Professional and Personal Development

Q2. Scientific Societies: Genetics Society of America-GSA (member), Society for Neuroscience-SfN (member), New York Academy of Sciences-NYAS (professional member), Society for Integrative and Comparative Biology-SICB (member), Hellenic Society for Biological Sciences (member).

Q1. Languages: Greek (native), English (fluent), Spanish (very good command), French (good command), Italian (good command).