

Csilla Ari, Ph.D.

Positions and Employment

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Szent Istvan University, HU	M.A.	1997-2002	Zoology
Semmelweis University, HU	Ph.D.	2002-2008	Neurosciences
University of South Florida	Postdoctoral scholar	2010-2012 2012-2013	Molecular Medicine Molecular Pharmacology and Physiology
	Research Associate	2013 Sept- present	Molecular Pharmacology and Physiology

2001 Volunteer, University of California, Scripps Institution of Oceanography, San Diego, USA
2002 Volunteer, University of California, Scripps Institution of Oceanography, San Diego, USA
2003-present Principal Investigator, Foundation for the Oceans of the Future, Hungary
2004-2005 Visiting scientist at CSIRO Marine Research Laboratories in Hobart, Tasmania, Australia
2007-2008 Cartilaginous fish and marine fish specialist, Hungarian Natural History Museum, Hungarian Academy of Sciences
2008 Supervisor, Museum of Anatomy, Semmelweis Medical University, Hungary
2009 Patient Safety Specialist, TATA Consultancy Services, AstraZeneca, Göteborg/ Sweden; Charnwood, Manchester/ UK; Budapest/ Hungary
2010-2012 Postdoctoral Scholar, USF Health Byrd Alzheimer's Center and Research Institute, University of South Florida, Department of Molecular Medicine, FL, USA
2012- Sept 2013 Postdoctoral Scholar, Hyperbaric Biomedical Laboratory, University of South Florida, Department of Molecular Pharmacology and Physiology, FL, USA
2013- present Research Associate Hyperbaric Biomedical Laboratory, University of South Florida, Department of Molecular Pharmacology and Physiology, FL, USA
2013- present Board of Director, Scientific Advisor for Manta Pacific Research Foundation

Professional activities:

Journal Referee:

Brain, Behavior and Evolution

PlosOne

Brain Research Bulletin

Journal of Neuroscience and Behavioral Health
Journal of Medicine and Medical Sciences
Turkish Journal of Fisheries and Aquatic Sciences
Biological Journal of Linnean Society
Journal of Fish Biology

Professional Memberships:

Hungarian Academy of Sciences
Hungarian Biological Society
American Society for Neuroscience
International Behavioral Neuroscience Society
Society for Neuroscience

Co-Mentoring/Undergraduates:

Julbert Caneus, Craig Goldhagen
Whitney Hethorn Cem Murdun
Nicholas Mavromates Andrew Koutnik
Ashley Van Putin

Honors and Awards

Grant from the Capital of Hungary (1996-97)
Grant from the Capital of Hungary (1997-98)
Grant from the Hungarian Republic (2001-2002)
Grant from the Portuguese Association for the Study and Conservation of Elasmobranchs (2004)
American Elasmobranch Society Meeting, Travel Award (2005 and 2008)
Richter Gedeon Grant for supporting Ph.D. studies (2006)
Grant from the National Office for Research and Technology (2008)
Grant from the Save Our Seas Foundation (2010)
Grant from the Signature Interdisciplinary Program in Neuroscience, USF, USA (2011)
Conference travel grant for postdoctoral scholars at USF, USA (2012)
Travel award from International Society of Neurochemistry (2013) -could not accept the award because my visa situation could not be solved in time to be able to travel outside of the USA
Grant from Manta Pacific Research Foundation (2013)
Grant from Manta Pacific Research Foundation (2014)
Grant from Manta Pacific Research Foundation (2015)
Research Recognition Award, The American Physiological Society Comparative and Evolutionary Physiology Section, Boston, USA (2015)

Scuba diving certificates

CMAS *	1997
NAUI Advanced Diver	1998
NAUI Rescue Diver	1998
NAUI Master Diver	1999
NAUI Nitrox Diver	2001
NAUI Divemaster	2003
PADI Manta ray specialist	2012

Selected Peer-Reviewed Publications

Book

1. **Ari, C.** (2009). On the brain of cartilaginous fishes: Cerebralization, astroglial architecture and blood-brain barrier composition, Lambert Academic Publishing.

Book chapter

2. **Ari, C.,** Pilla, R., D'Agostino, D.P. (2014) Nutritional/Metabolic therapies in animal models of ALS, Alzheimer's disease, and seizures, in: Bioactive Nutraceuticals and Food Supplements in Neurological and Brain Disease, <http://dx.doi.org/10.1016/B978-0-12-411462-3.00047-3>

Articles

3. Kálmán, M., **Ari, C.** (2002). Distribution of GFAP immunoreactive structures in the rhombencephalon of sterlet (*Acipenser ruthenus*) and its evolutionary implication; *Journal of Experimental Zoology*, 2002, 293: 395-406.
4. Gál, J., Vincze, Z., Jakab, C., **Ari, C.,** Lefler, K.K. (2005). Multiplex shafted fibroma on the upper jaw of a sand-tiger shark (*Carcharias (Odontaspis)taurus*); *Hungarian Veterinary Journal*, 127:242-245.
5. **Ari, C.,** Kálmán, M. (2008). Evolutionary changes of astroglia in Elasmobranchii comparing to Amniotes: a study based on three immunohistochemical markers (GFAP, S-100, and glutamine synthetase), *Brain, Behavior and Evolution*, 71:305-324.
6. **Ari, C.,** Kálmán, M. (2008). Glial architecture of the ghost shark (*Callorinchus millii*, Holocephalii, Chondrichthyes) as revealed by different immunohistochemical markers, *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, Vol 310B, 6: 504 – 519.
7. **Ari, C.,** Correia, J.P. (2008). Role of sensory cues on the food searching behaviour of a captive *Manta birostris* (Myliobatiformes, Mobulidae), *Zoo Biology* Vol 27, 4: 294 – 304.
8. **Ari, C.** (2011). Encephalization and brain organization of mobulid rays (Myliobatiformes, Elasmobranchii) with ecological perspectives, *The Open Anatomy Journal* 3:1-13.
9. Kitchen-Wheeler, A-M., **Ari, C.,** Edwards, A.J. (2012) Population estimates of Alfred mantas (*Manta alfredi*) in central Maldives atolls: North Male, Ari and Baa, *Environmental Biology of Fishes*, 93:4, 557-575.
10. Kalman, M., Somiya, H., Lazarevic, L., **Ari, C.,** Majorossy, K. (2013) Absence of post-lesion glial reactivity in elasmobranchs and turtles and its bearing on the evolution of astroglia, *Journal of Experimental Zoology*, doi: 10.1002/jez.b.22505.

11. D'Agostino, D., Pilla, R., Held, H., Landon, C.S., **Ari, C.**, Puchowicz, M., Brunengraber, H., Arnold, P., Dean, J. (2013) Therapeutic ketosis with ketone ester delays central nervous system oxygen toxicity seizures in rats, *American Journal of Physiology* ;304(10): R829-36.
12. Poff, A., **Ari, C.**, Seyfried, T., D'Agostino P.D. (2013) The Ketogenic Diet and Hyperbaric Oxygen Therapy Act Synergistically to Prolong Survival in Mice with Systemic Metastatic Cancer, *PlosOne* 8(6): e65522. doi:10.1371/journal.pone.0065522.
13. **Ari, C.**, Borysov, S., Wu, J., Padmanabhan, J., Potter, H. (2014) Alzheimer amyloid beta inhibition of Eg5/kinesin 5 reduces neurotrophin and/or transmitter receptor function. *Neurobiol Aging*. 35 (8): 1839-49. pii: S0197-4580(14)00180-8doi:10.1016/j.neurobiolaging.2014.02.006.
14. Poff, A.M., **Ari, C.**, Arnold, P., Seyfried T.N., D'Agostino D.P. (2014) Ketone supplementation decreases tumor cell viability and prolongs survival of mice with metastatic cancer, *Int J Cancer*. Feb 26. doi: 10.1002/ijc.28809
15. **Ari, C.** (2014) Rapid coloration changes of manta rays (Mobulidae), *Biological Journal of Linnean Society*, 113: 180–193. doi: 10.1111/bij.12321
16. **Ari, C.**, Poff, A.M., Held, H., Fiorelli, T., Goldhagen, C., D'Agostino, D.P. (2014) Increased TCA cycle intermediates in response to diet with Deanna protocol in ALS mouse model *The FASEB Journal* vol. 28 no. 1 Supplement 578.3
17. **Ari, C.**, Poff, A.M., Held, H.E., Landon, C.S., Goldhagen, C.R., Mavromates, N., D'Agostino, D.P. (2014) Metabolic therapy with Deanna Protocol Supplementation Delays Disease Progression and Extends Survival in Amyotrophic Lateral Sclerosis (ALS) Mouse Model, *PLoS ONE* 9(7): e103526. doi:10.1371/journal.pone.0103526
18. **Ari, C.** (2015) Long-term body pigmentation changes on a manta ray (*Mobulidae*), *Biological Journal of the Linnean Society*, 114: 406–414. doi: 10.1111/bij.12416
19. **Ari, C.**, Decker, S., Ford, J., D'Agostino, D.P. (2015) What can we learn from deep-diving elasmobranchs to help humans adapt to extreme underwater environments? *The FASEB Journal*, Vol. 29: 1, Supplement 678.18.
20. **Ari, C.**, Poff, A., Landon, C., Goldhagen, C.R., Mavromates, N., Kesl, S., Ward N.P., Fiorelli T.N., Van Putten A.J., Sherwood J.W., Arnold P., D'Agostino, D.P. (2015) Metabolic therapies improve mitochondrial morphology and function, *The FASEB Journal*, Vol.. 29:1 Supplement 1036.10.
21. Kesl, S.L, Poff, A.M., Ward, N.P., Fiorelli, T.N., **Ari, C.**, Van Putten, A.J., Sherwood, J.W., Arnold, P., D'Agostino, D.P. (2016) Effects of exogenous ketone supplementation on blood ketone, glucose, triglyceride, and lipoprotein levels in Sprague–Dawley rats, *Nutrition and Metabolism*, 13:9. DOI: 10.1186/s12986-016-0069-y

Presented posters

22. **Ari, C., Kálmán, M.** (2001) Search for astroglia in the GFAP-free areas of the brains of cartilaginous and bony fishes applying immunohistochemical staining of glutamine synthetase and S-100 protein; Conference of the Hungarian Neurobiological Society, Szeged, Hungary
23. Kálmán, M., **Ari, C.** (2001) Comparative study of astroglial markers, GFAP, glutamine synthetase and S-100 in skate brain; 96. Versammlung in Münster, Germany
24. **Ari, C., Kálmán, M.** (2003) Supposed sexual dimorphism on the cerebellum of the ray *Mobula japonica* (order Myliobatiformes); Joint Meeting of Ichthyologists and Herpetologists and the American Elasmobranch Society, Manaus, Brazil
25. Kálmán, M., **Ari, C., Gould, R.M.** (2003) Similar tendencies in the evolution of astroglia in elasmobranchs and amniotes. Joint Meeting of Ichthyologists and Herpetologists and the American Elasmobranch Society, Manaus, Brazil
26. **Ari, C., Kálmán, M.** (2003) Morphometrical studies on the cerebellum of a ray species (*Mobula japonica*) of the order Myliobatiformes- sexual dimorphism?; Conference of the Hungarian Neurobiological Society, Balatonfüred, Hungary
27. **Ari, C., Stuber, I.** (2004) Three-dimensional movements of captive Mobulids (*Manta birostris* and *Mobula mobular*); European Elasmobranch Society meeting, London, England
28. **Ari, C., Kálmán, M., Correia, J.P., Stuber, I.** (2004) Analysis of movements by computerised tridimensional video reconstruction; Neuroscience Meeting, San Diego, USA
29. **Ari, C., Correia, J.P.** (2005) A study on the sensory and learning capabilities of a captive *Manta birostris* (Mobulidae); Joint Meeting of Ichthyologists and Herpetologists and the American Elasmobranch Society Meeting, Tampa, USA
30. Kálmán, M., **Ari, C.** (2007) Evolutionary correlations of brain structure and glial architecture in Chondrichthyes: forebrain and hindbrain. 5th European Conference of Comparative Neurobiology, Paris, France
31. **Ari, C.** (2008) The brain of *Mobula japonica* (Myliobatiformes, Elasmobranchii) in gross morphological and ecological perspectives, Joint Meeting of Ichthyologists and Herpetologists and the American Elasmobranch Society Meeting, Montreal, Canada
32. **Ari, C., Borysov, S.I., Wu, J., Padmanabhan, J., Potter, H.** (2011) A β inhibits specific kinesin motors involved in both mitosis and neuronal function; potential implications for neurogenesis and neuroplasticity in Alzheimer's Disease and Down Syndrome, International Conference on Alzheimer's Disease, Paris, France

33. **Ari, C.**, Borysov, S., Wu, J., Padmanabhan, J., Potter, H. (2011) Impairment of neurotransmitter and neurotrophin receptor localization and function associated with Alzheimer's disease is caused by A β inhibition of mitotic/neuronal kinesin Eg5, 41th Society for Neuroscience Conference, Washington, USA
34. D'Agostino DP, Pilla R, Dean JB, **Ari C**, Bennett A, Kesl S, Diamond D. (2011) Ketogenesis as a Therapeutic Strategy for CNS Oxygen Toxicity and Other Neurological Disorders. Society for Neuroscience Journal; San Diego, CA
35. Bennett, A., **Ari, C.**, Kesl, S., Luke, J., Diamond, D., Dean, J., D'Agostino, D. (2012) Effect of ketone treatment and glycolysis inhibition in brain cancer cells (U87MG) and rat primary cultured neurons exposed to hyperbaric oxygen and amyloid beta, Experimental Biology, San Diego, USA
36. D'Agostino, D., Pilla, R., Held, H., Landon, C., **Ari, C.**, Arnold, P., Dean, J.B. (2012) Development, testing and therapeutic applications of ketone esters (KE) for CNS oxygen toxicity (CNS-OT); i.e., hyperbaric oxygen (HBO₂)-induced seizures, Experimental Biology, San Diego, USA
37. Bennett AM, **Ari C**, Kesl S, Luke J, Diamond D, Dean JB, D'Agostino DP. (2012) Effect of ketone treatment and glycolysis inhibition in brain cancer cells (U87MG cultures) and primary cultured neurons exposed to hyperbaric oxygen and amyloid beta (Ab). Federation of American Societies for Experimental Biology Journal, San Diego, CA, USA
38. D'Agostino DP, Bennett A, Pilla R, Held, HE, **Ari C**, and Dean J.B. (2012) Neuroprotective effects of ketone esters for CNS oxygen toxicity and other neurological disorders. 8th Federation of European Neuroscience Societies Forum; Barcelona, Spain. FENS Abstr. 2902, Present. Code 104.13
39. D'Agostino DP, Pilla R, Dean JB, **Ari C**, Bennett A, Kesl S, Diamond D. (2011) Ketogenesis as a Therapeutic Strategy for CNS Oxygen Toxicity and Other Neurological Disorders. Society for Neuroscience Journal; San Diego, CA, USA
40. **Ari, C.** (2012) Visual Abilities and Social Interaction of Manta Rays with the Largest Brain of Fishes and the Possible Underlying Neurological Structures, international Behavioral Neuroscience Society, Kona, HI, USA
41. Poff AM, **Ari C**, Goldhagen C, Seyfried T, D'Agostino D. (2013) Supplemental ketone metabolic therapy slows tumor growth and increases survival time in mice with metastatic cancer. Federation of American Societies for Experimental Biology Journal; Boston, MA.
42. Poff AM, **Ari C**, Goldhagen C, Seyfried TN, D'Agostino D. (2013) The ketogenic diet and hyperbaric oxygen therapy work synergistically to slow tumor growth and increase survival time in mice with systemic metastatic cancer. Federation of American Societies for Experimental Biology Journal; Boston, MA.

43. **Ari, C.**, Poff, A., Held, H., Landon, C., Goldhagen, C.R., Mavromates, N., D'Agostino, D.P. (2013) Effect of alternative metabolic fuels as a potential ALS therapy in mice and humans, Ancestral Health Symposium, Atlanta, USA
44. **Ari, C.**, Poff, A., Held, H., Landon, C., Goldhagen, C.R., Mavromates, N., D'Agostino, D.P. (2013) Metabolic therapy with arginine alpha-ketoglutarate extends survival in Amyotrophic Lateral Sclerosis (ALS) mouse model , Society for Neuroscience, San Diego, USA
45. Poff, A., **Ari, C.**, Goldhagen, C.R., Seyfried, T.N., D'Agostino, D.P. (2013) Effects of the ketogenic diet, supplemental ketone administration, and hyperbaric oxygen therapy on the VM-M3 mouse model of metastatic cancer, Society for Neuroscience, San Diego, USA
46. Bennett AM, **Ari C**, Kesl S, Luke J, Diamond D, Dean JB, D'Agostino DP. (2012) Effect of ketone treatment and glycolysis inhibition in brain cancer cells (U87MG cultures) and primary cultured neurons exposed to hyperbaric oxygen and amyloid beta (Ab). Federation of American Societies for Experimental Biology Journal; San Diego, CA, USA
47. **Ari, C.**, D'Agostino, D.P. (2014) Neuroprotection of A β treated hippocampal neurons during hyperbaric treatment with ketone supplementation, Alzheimer`s Disease International Conference, San Juan, Puerto Rico
48. Kesl SL, Poff AM, Ward NP, Fiorelli TN, **Ari C**, D'Agostino DP. (2014) Methods of sustaining dietary ketosis in Sprague-Dawley rats. Federation of American Societies for Experimental Biology Journal, San Diego, CA
49. **Ari, C.** , D'Agostino, D.P. (2014) Contingency Checking and Self-Directed Behaviors in Giant Manta Rays: Do Fish Have Self-Awareness?, American Elasmobranch Society Meeting, Chattanooga, USA
50. **Ari, C.**, Poff, A., Held, H., Landon, C., Goldhagen, C.R., Mavromates, N., Kesl, S., Ward N.P., Fiorelli T.N., Van Putten A.J., Sherwood J.W., Arnold P., D'Agostino, D.P. (2014) Improving mitochondrial morphology and function by metabolic therapies, Ketogenic diet therapies, Liverpool, UK
51. **Ari, C.**, Decker, S., Ford, J., D'Agostino, D.P. (2015) What can we learn from deep-diving elasmobranchs to help humans adapt to extreme underwater environments? Experimental Biology, Boston, USA
52. **Ari, C.**, Poff, A., Landon, C., Goldhagen, C.R., Mavromates, N., Kesl, S., Ward N.P., Fiorelli T.N., Van Putten A.J., Sherwood J.W., Arnold P., D'Agostino, D.P. (2015) Metabolic therapies improve mitochondrial morphology and function, Experimental Biology, Boston, USA
53. Kesl SL, Poff AM, Ward NP, Fiorelli TN, **Ari C**, D'Agostino DP; Effect of Sustaining Dietary Ketosis on the Hippocampal and Serum Metabolome of Sprague-Dawley Rats.

Federation of American Societies for Experimental Biology Journal, March 2015, Boston, MA

54. Poff AM, Kesl SL, **Ari C**, Ward NP, Fiorelli TN, Rogers CQ, Van Putten AJ, Sherwood JW, D'Agostino DP. (2015) Development and characterization of exogenous ketone supplements – novel methods of inducing therapeutic ketosis; Glut1 Deficiency Foundation Conference, Orlando, FL, USA
55. **Ari C**, Poff A.M., Kesl S.L, Goldhagen C.R., Murdun C, D'Agostino D.P. (2015) Chronic administration of exogenous ketone supplements reduces anxiety in Sprague-Dawley rats, Glut1 Deficiency Foundation Conference, Orlando, FL, USA
56. **Ari C**, Murdun C, Goldhagen C, Rogers C, D'Agostino D.P. (2015) Elevated blood ketone levels increase the latency of anaesthetic induction in GLUT1 mouse model, Glut1 Deficiency Foundation Conference, Orlando, FL, USA
57. **Ari C**, Murdun C, Goldhagen C, Rogers C, D'Agostino D.P. (2015) The effect of ketogenic diet and ketone supplementation on the motor function of `GLUT1 deficiency mouse model, Glut1 Deficiency Foundation Conference, Orlando, FL, USA
58. **Ari, C.**, D'Agostino, D.P. (2015) Melanosome aggregations might cause giant manta ray skin change color, American Elasmobranch Society Meeting, Reno, USA
59. **Ari C**, Poff A.M., Kesl S.L, Goldhagen C.R., Murdun C, D'Agostino D.P. (2016) Chronic administration of exogenous ketone supplements reduces anxiety in Sprague-Dawley rats, 1st Annual Conference on Nutritional ketosis and Metabolic Therapeutics, Tampa, FL, USA
60. **Ari C**, Murdun C, Goldhagen C, Rogers C, D'Agostino D.P. (2016) Elevated blood ketone levels increase the latency of anaesthetic induction in GLUT1 mouse model, 1st Annual Conference on Nutritional ketosis and Metabolic Therapeutics, Tampa, FL, USA
61. **Ari C**, Murdun C, Goldhagen C, Rogers C, D'Agostino D.P. (2016) The effect of ketogenic diet and ketone supplementation on the motor function of `GLUT1 deficiency mouse model, 1st Annual Conference on Nutritional ketosis and Metabolic Therapeutics, Tampa, FL, USA
62. **Ari, C**, Decker, S., Ford, J., D'Agostino, D.P. (2016) What can we learn from deep-diving elasmobranchs to help humans adapt to extreme underwater environments? 1st Annual Conference on Nutritional ketosis and Metabolic Therapeutics, Tampa, FL, USA

Presentations:

1. **Ari, C.** (2013) Past, present and future of manta rays, Keynote talk at the Oceanography-2013 Conference, Manta Ray Symposium, Orlando, FL, USA
2. **Ari, C.** (2013) First evidence of long term and rapid coloration changes of giant Manta rays (genus *Manta*) with implications on reliability of photo identification techniques, Manta Ray Symposium, Orlando, FL, USA
3. **Ari, C.** (2013) Coloration changes of manta rays, Oceania Chondrichthyan Society Meeting, Brisbane, AU
4. **Ari, C.** (2013) Researching manta ray brains, TedXTampaBay
<http://www.youtube.com/watch?v=SCfsweIsqdA>
5. **Ari, C.** (2014) Rapid and long-term coloration changes of manta rays, American Elasmobranch Society Meeting, Chattanooga, USA
6. **Ari, C.** (2014) Manta ray research and conservation projects, DEMA show, Las Vegas, USA
7. **Ari, C.** (2015) Neuroprotective metabolic therapies by the ketogenic enhancement of the Szentgyorgyi-Krebs cycle: studies in animal models, 3rd International Congress of Deuterium Depletion, Budapest, Hungary
8. **Ari, C., D'Agostino, D.P.** (2015) Sensory and cognitive experiments on giant manta rays, American Elasmobranch Society Meeting, Reno, USA

Websites:

www.mantamissions.org
www.futureoceans.hu
www.mantamemories.org
www.mantapacific.org

Conference Organizer:

Organizer of Manta Ray Symposium as part of the Oceanography-2013 Conference, Orlando, USA