Approved by the Regents
May 19, 2022

PROMOTION RECOMMENDATION
The University of Michigan–Dearborn
College of Arts, Sciences, and Letters

John Abramyan, assistant professor biology, College of Arts, Sciences, and Letters, is recommended for promotion to associate professor of biology, with tenure, College of Arts, Sciences, and Letters.

Academic Degrees:

Ph.D.	2010	The University Of Queensland – Institute For Molecular Biosciences St Lucia, Qld 4072, Australia (Molecular Biology)
B.Sc.	2003	University Of California, Davis – Davis, CA Advisor: Prof. H. Bradley Shaffer Evolution and Ecology

Professional Record:

2016–present	Assistant Professor of Biology, Department of Natural Sciences, University of Michigan-Dearborn
2015–2016	Research Associate Department of Biological Sciences, Virginia polytechnic institute and State University, Blacksburg, Virginia
2011–2015	Post-doctoral Fellow Department Of Oral Health Sciences – Faculty of Dentistry, University Of British Columbia, Vancouver, British Columbia, Canada
2010–2011	Post-doctoral Researcher Institute for Integrative Genome Biology, University of California - Riverside, Riverside, California
2002–2006	Post-graduate Researcher Department of Evolution and Ecology, University of California - Davis, Davis, California

Summary of Evaluation:

Teaching: Professor Abramyan is rated as excellent in teaching. His primary teaching is in introductory biology and advanced classes in embryology and histology. He has re-designed these advanced and challenging laboratory lecture courses and developed new laboratory experiments using cutting edge techniques. His student evaluations are simply outstanding, with an average 4.7 to 5 rating. Students praise his sincere interest in their success, and they are delighted with his approach in student-centered learning and engagement, course content and his ability to connect. Professor Abramyan's faculty peer evaluations are excellent. It should be noted that natural sciences faculty are expected to work with undergraduates. Several are co-authors on his research publications and have gone on to earn awards such as the chancellor's medallion and have been accepted into highly regarded medical and graduate programs.

Research: Professor Abramyan is rated as excellent in research. Professor Abramyan is a developmental biologist (craniofacial development) who focuses on comparative, evolutionary embryology of the craniofacial region in amniotes (the group of vertebrates comprising mammals, reptiles and birds). He performs quality research on topics that answer long-standing questions that have lingered in the field but not been addressed. He has found critical research holes and niches in a crowded and competitive academic community; finding questions in research areas that are popular but still have gaps in knowledge. This was his approach and was echoed and praised in the external reviews. He recently initiated bioinformatics research focused on tooth enamel, which is an aligned field in craniofacial biology. Researchers note his ability to integrate two specializes areas, which require expertise in disparate areas. He has published seven papers, many with research students as co-authors, on work completed at UM-Dearborn.

Recent and Significant Publications:

Shaheen, J., Mudd, A. B., Diekwisch, T. G., and Abramyan, J. (2021). Pseudogenized Amelogenin Reveals Early Tooth Loss in True Toads (Anura: Bufonidae). *Integrative and Comparative Biology.* In press

Abramyan, J., Geetha-Loganathan, P., Šulcová, M.,Buchtová, M. (2021) "Role of cell death in cellular processes during odontogenesis." *Frontiers in Cell and Developmental Biology* 9 (2021):1554

Jomaa, J., Martínez-Vargas, J., Essaili, S., Haider, N., and Abramyan, J. (2020). Disconnect between the developing eye and craniofacial prominences in the avian embryo. *Mechanisms of Development*, 161

Albawaneh, Z., Ali, R., and Abramyan, J. (2020). Transient Closure of Nasal Cavities in the Chicken Embryo". *Anatomical Record*, 304(2), pp. 247-257

Alazem, O., Abramyan, J. (2019). Reptile enamel matrix proteins: Selection, divergence, and functional constraint. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 332(5), pp. 136-148

Abramyan, J. (2019). Hedgehog Signaling and Embryonic Craniofacial Disorders. *Journal of Developmental Biology*, 7(2), pp. 9

Abramyan, J., Richman, J.M. (2018). "Craniofacial development: discoveries made in the chicken embryo." *The International Journal of Developmental Biology*, 62 (1-2-3), pp. 97-107

Service: Professor Abramyan is rated as excellent in service. He is active in departmental, college, and professional service to his society and researchers in his field. He has served as the department secretary, several years on the department colloquium committee, and the search committee for our neuroscience assistant professor. He also acted as liaison to the Department of Behavioral Sciences, serving as the college-wide program Behavioral and Biological Sciences (BBS) representative from Natural Sciences on that search committee. Professionally, he is a reviewer for several dozen articles, including *PNAS* and *eLife*, an editorial board member for the *Journal of Experimental Zoology, Part B*, and a guest editor for *Frontiers in Cell and Developmental Biology*.

External Reviewers:

Reviewer A: "His research is fascinating. It engages the mind and makes one think. I am especially impressed by the comparative morphology and genomics he and his research group have performed...His research is challenging because he is investigating a quite complex anatomical region."

Reviewer B: "The science presented in his papers is impressive. Dr. Abramyan and his students use a broad array of techniques – histological staining, 3D imaging and reconstruction, morphometrics, and evolutionary genetics/genomics – and they do all of them very well. Dr. Abramyan has been remarkably productive in his time at University of Michigan-Dearborn. The breadth of techniques and approaches included in his papers would normally require a team – perhaps a collaboration between two labs, one focusing on anatomy and another on gene evolution…."

Reviewer C: "I found the paper entitled, 'Disconnect between the developing eye and craniofacial prominences in the avian embryo,' published in Mech Dev to be outstanding, combining cytochemical staining, 3D imaging, and geometric morphemetrics. Conceptually, is it also an important paper that under scores Dr. Abramyan's 'big-picture' thinking, as it shows the ways in which the vertebrate face is modular (as well as ways in which it is not!).

Reviewer D: "The majority of the research in the field of craniofacial development focuses on understanding the basis of the major birth defect cleft lip and palate. However, John's research goes deeper, providing foundational insights into the development of the upper jaw, nose and teeth. His morphological analyses utilizing microCT, morphometrics and histological staining are among the highest quality in the field and provide a valuable resource."

Reviewer E: "In conclusion, I find that the scholarly endeavours of Dr. John Abramyan to be outstanding and truly beyond what I would expect of an assistant professor. I believe he is setting himself up for a brilliant career with undergraduate collaborative research as his focus. Dr. John Abramyan is a prime example of what can be achieved at an undergraduate teaching university."

Reviewer F: "I am extremely impressed with the overall quality of Dr. Abramyan's research. His publications demonstrate the dexterity, courage, and imagination to pursue multiple forms of data and data analysis – this is especially impressive when it involves moving between pattern-based phylogenetic studies and experimentally based science directed at mechanisms."

Summary of Recommendation: Professor Abramyan is an outstanding researcher, educator and colleague deserving of promotion and tenure. His research is rated excellent and holds promise of continued production in publications and has the potential for obtaining external funding. His teaching is outstanding, and he is an excellent mentor. His service is remarkable, and demonstrates his commitment to his department, student success, interdisciplinary work in research and academic programs, and to his profession. It is with the support of the College of Arts, Sciences, and Letters Executive Committee that I recommend John Abramyan for promotion to professor of biology, with tenure, College of Arts, Sciences, and Letters.

Martin J. Hershock, Dean
College of Arts, Sciences, and Letters

Domenico Grasso, Chancellor
University of Michigan-Dearborn

May 2022