

**CURRICULUM VITAE**  
**Paras Kumar Mishra, PhD, FAHA, FCVS**

Date of preparation: April 2022

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**I. GENERAL INFORMATION**


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**A. CONTACT INFORMATION**

Work address: Department of Cellular and Integrative Physiology  
 University of Nebraska Medical Center, Omaha, Nebraska-68198, USA  
 Email: [paraskumar.mishra@unmc.edu](mailto:paraskumar.mishra@unmc.edu)  
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 Website: <https://www.unmc.edu/physiology/faculty/mishra.html>

ORCID ID: <https://orcid.org/0000-0002-7810-9239>

**B. EDUCATION**

1995-1999: Bachelor of Science (Zoology Honors), Lalit Narayan Mithila University, India  
 1999-2001: Master of Science in Zoology, Banaras Hindu University, India  
 2001-2006: Ph.D. in Zoology, Banaras Hindu University, India  
 Evolutionary Studies in *Drosophila* Interspecific hybridization among four species of the  
*Drosophila bipectinata* complex  
 Dissertation Advisor: B. N. Singh, Ph.D., D.Sc.

**C. POSTGRADUATE TRAINING**

2007-2008: Postdoctoral Fellowship, Department of Biology, Emory University, Atlanta, GA  
 2008-2010: Research Associate, Department of Physiology & Biophysics, University of Louisville, KY

**D. ACADEMIC APPOINTMENTS**

2016- : Associate Professor (Tenured, effective 7/1/2016), Department of Cellular and Integrative  
 Physiology (CIP), University of Nebraska Medical Center (UNMC), Omaha, NE  
 2015-2018: Associate Professor (Courtesy), Department of Anaesthesiology, UNMC.  
 2015-2016: Associate Professor (Tenure-track), CIP, UNMC  
 2013-2015: Assistant Professor (Tenure-track), CIP, UNMC  
 2013-2015: Assistant Professor (Courtesy), Department of Anesthesiology, UNMC  
 2010-2013: Assistant Professor (Term-track), Department of Physiology and Biophysics, University of  
 Louisville, KY

**E. HONORS AND AWARDS**

2005: National Level Travel Award from the Department of Science and Technology of India for attending  
 an international conference  
 2005: National level Travel Award from the Indian National Science Academy for attending an  
 international conference  
 2010: Finalist for Harry Goldblatt New Investigator Award, HBPR, American Heart Association  
<https://www.ahajournals.org/doi/full/10.1161/hypertensionaha.111.169516>  
 2010: *Best Poster Award* in 2<sup>nd</sup> International Conference on H<sub>2</sub>S Biology and Medicine  
 2011: Satu Somani Award in Physiology, Association of Scientists of Indian origin in America  
 2014: Elected, Fellow of *American Physiological Society, Cardiovascular Section* (FCVS)  
 2014: New Investigator Award, University of Nebraska Medical Center  
<https://www.unmc.edu/news.cfm?match=16228>  
 2017: Excellence in Mentoring Award, University of Nebraska Medical Center  
 2017: Fellow of *American Heart Association* (FAHA)

2021: President, Midlands Society of Physiological Sciences, a chapter of American Physiological Society  
<https://msps-online.org/>

## F. SUMMARY OF RESEARCH, TEACHING, AND SERVICE

- Research:  
 Published 64 papers, 10 book chapters, 55 conference abstracts  
 Grant support: Present 4, past 6 including NIH R01.  
 Invited Lectures: a) Institutes: 20 including 1 international and 6 national institutes; b) Conference: 14: 6 internationals including 1 keynote speaker, and 8 nationals  
 Organizer of Scientific Sessions: 3
- Teaching:  
 Classroom: a) University of Louisville: Total contact hours 36. b) University of Nebraska Medical Center (UNMC): Total contact hours 114. Teaching evaluation at UNMC: Above average (>4 where 3 was average and highest 5 was excellent)  
 Course development and Director of course: 2  
 Mentoring: a) Undergraduate 6; Masters 3; Graduate 3, Postdoctoral fellow 7; Junior faculty 4  
 b) supervisory committee 14; comprehensive exam committee 13  
 c) Examiner of International Ph.D. Thesis: 1
- Service:  
 Grant Reviewer: a) International 5; b) National: NIH 20, VA 1, NASA 4, AHA 6; c) University 6  
 Editorial Board: Associate Editor 1; Consulting Editor 1; Guest Editor 2; Reviewer >30 journals  
 Book Reviewer: 2; Scientific Judge: >12  
 Committee member: National 2; University 2; Department 6  
 Leadership: a) President of 2021 Midlands Society of Physiological Sciences, an APS chapter  
 b) Chair of AHA Fellowship grants, few grant applications of NIH, c) Chair/co-Chair/Moderator of 6 scientific sessions

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## II. LEADERSHIP SUMMARY

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### A. TEACHING

- 1) GRADUATE PROGRAM ORGANIZATION  
Director: Cardiopulmonary Function in Health and Disease (IPMM916), UNMC  
 2020-present.
- 2) MASTER'S IN SCIENCE COURSE DEVELOPMENT  
Director: Molecular Mechanisms of Cardiovascular Pathophysiology (MEP 916)  
 This course starts in Fall 2022.
- 3) GRANT WRITING BOOTCAMP  
Instructor: Great Plains IDeA-CTR/CHVR Grant Writing Bootcamp.  
 2021 (Sept -Nov): Reviewed Aims page, Biosketch, and Research Strategy drafts of NIH RO1 applications for a small group (4 Junior investigators).

### B. RESEARCH

I have developed an independent research program focusing on understanding the molecular mechanisms of on diabetes cardiomyopathy. I have been successful in securing research funds from the National Institutes of Health (NIH), American Heart Association (AHA), and several other funding agencies. I have been successful in training mentees to secure research funds from NIH, AHA, and university. I have collaborated with leaders in the field of cell death mechanisms and published a guidelines paper on myocardial cell death, which received the 2020 Best Review article of *AJP-Heart and Circulatory Physiology*.

**C. SERVICE****ADMINISTRATIVE**

Role	Administration	Year
Director	Department Seminar Series	Jan 2016-June 2018
Chair	A Ross McIntyre Cardio-Renal Seminar Review Committee	July 2020-
Director	Department Equipment and Safety Operations	July 2020-
Chair	Faculty Recruitment Committee	April 2021-

**CHAIR/MODERATOR OF SCIENTIFIC SESSION**

Role	Scientific session	Year
Chair	MicroRNA and stem cell in muscle pathology, Experimental Biology (EB)	2013
Co-Chair	Matrix metalloproteinases in the cardiovascular system, EB meeting	2015
Chair	Autophagy and miRNA in diabetic heart failure, EB meeting	2015
Co-Chair	Dr. Bruce McManus Young Investigator Award, Int. Acad.CV Science	2015
Moderator	Autophagy and cardiovascular disease, AHA Scientific Session	2015
Moderator	Gene therapy and genome editing, College of Medicine Retreat, UNMC	2018

**PRESIDENT OF SOCIETY**

2021 Midlands Society of Physiological Sciences, a chapter of American Physiological Society

**CHAIR/CO-CHAIR OF STUDY SECTION**

Role	Study section	Year
Chair	Three applications in NIH SEP ZEG1 CVRS-L	March 2018
Co-Chair	AHA Basic Cell Genetics and Epigenetics	Feb 2018
Chair	AHA Basic Cell Genetics and Epigenetics	Oct 2018
Chair	AHA Basic Cell Genetics and Epigenetics	Oct 9, 2019
Chair	AHA Basic Cell Genetics and Epigenetics	Oct 21, 2019
Chair	Two applications in NIH study section F10A-K	July 21, 2021

**III. RESEARCH**

My research is focused on investigating how diabetes mellitus (DM) induces heart failure and how to prevent and treat DM-induced adverse cardiac remodeling to ameliorate diabetic cardiomyopathy (DMCM). My lab is interested in understanding metabolic remodeling, mitochondrial dysfunction, and pathophysiology of DMCM using rodent models. The cardiac homeostasis is perturbed due to differential expression of multiple genes in several molecular pathways in DMCM. One of my research interests is to use microRNA (miR), a regulatory non-coding RNA, for normalizing molecular signaling through optimization of gene expression to restore cardiac homeostasis in DMCM. We have investigated the roles of cardiac-specific miR-133a in preventing and improving cardiac remodeling in DMCM. In addition, we are examining the effects of exercise training, inhibiting matrix metalloproteinase-9 (MMP9), and supplementing hydrogen sulfide (H<sub>2</sub>S) to mitigate adverse remodeling in DMCM. With emerging knowledge on role of gut dysbiosis in heart failure, recently we are exploring the contribution of gut dysbiosis in DMCM in a collaborative project.

Complete List of Publications:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1BUMsLa0MVe5j/bibliography/44080859/public/?sortby=pubDate&sdirection=descending>

**A. RESEARCH IMPACT**

NIH iCITE: <https://icite.od.nih.gov/analysis>

Scopus Profile: <https://experts.nebraska.edu/en/persons/paras-kumar-mishra>

H-index: 27 (total citations 2159)

Research Gate Profile: [https://www.researchgate.net/profile/Paras\\_Mishra](https://www.researchgate.net/profile/Paras_Mishra)

## B. RESEARCH SUPPORT

ACTIVE GRANTS

1. *Gut dysbiosis in diabetic cardiomyopathy*  
NIH/NPOD PILOT GRANT  
NIH P20GM104320, PI: Janos Zempleni  
January 1, 2021- June 30, 2022  
Direct Costs/ Current: \$100,000; Year/ Total: 2/ \$200,000  
Role: Principal Investigator
2. *H<sub>2</sub>S Therapeutics for Myocardial Ferroptosis in Diabetes*  
UNMC Collaborative Initiative Grant  
July 1, 2021- June 30, 2023  
Direct Costs: Year/Total: 2/ \$149,924  
Role: Principal Investigator
3. *Maternal Diabetes and Mitochondrial Dysfunction in Fetal Heart*  
UNMC Collaborative Initiative Grant  
July 1, 2021- June 30, 2023  
Direct Costs: Year/Total: 2/ \$150,000  
Role: Co- Investigator (PI: Jennifer Wood)
4. *miRNA-based Therapeutic Strategy for Diabetic Breast Cancer*  
UNMC Collaborative Initiative Grant  
July 1, 2020- June 30, 2022  
Direct Costs: Year/Total: 2/ \$149,064  
Role: Co- Investigator (PI: Surabhi Chandra)

PAST GRANTS

1. *Inflammation, miRNA, and autophagy in diabetes*  
National Institutes of Health, R01 HL113281  
September 1, 2013- July 31, 2020  
Direct cost: Year/Total: 7/ \$1, 250,000  
Role: Principal Investigator
2. *Exercise and H<sub>2</sub>S mitigate homocysteine-mediated beta2-adrenergic receptor*  
National Institutes of Health, R01 HL116205  
July 1, 2014- December 31, 2019  
Direct cost: Year/Total: 6 / \$1, 250,000  
Role: Principal Investigator
3. *NHLBI UTHSCSA Cardiovascular proteomics Center*  
National Institutes of Health, R01 HL126796  
December 1, 2015- November 30, 2019  
Direct cost: Year/Total: 4 / \$1, 250,000  
Role: Co-Investigator (PI: Zucker IH / Wang HJ)
4. *Systems biology of fibroblast activation following myocardial infarction*  
National Institutes of Health, R01 HL129823  
July 1, 2020- April 30, 2021 (my participation period)  
Direct cost: Year/Total: 4 / \$1, 250,000  
Role: Collaborator (PI: Lindsey ML)
5. *Role of MMPs in miRNA-mediated diabetic cardiomyopathy*  
American heart Association Beginning Grant-In-Aid, 11BGIA 9690055  
July 1, 2011-June 30, 2013 (relinquished from May 30,2013 due to moving to UNMC)  
Direct cost: Year/Total: 2/\$130,000  
PI: Principal Investigator
6. *Targeted delivery of H<sub>2</sub>S to mitigate cell death in obesity/diabetes-induced cardiomyopathy*  
NIH/CHVR PILOT GRANT  
NIH U54GM115458, PI: Merry L Lindsey

January 1, 2020- June 30, 2021  
 Direct Costs/ Current: \$50,000  
 Role: Principal Investigator

### C. PUBLICATIONS

#### RESEARCH ARTICLE (\* corresponding author)

1. **Mishra PK**, Singh BN. Genetic basis of hybrid male sterility among three closely related species of *Drosophila*. *Indian Journal of Experimental Biology* 43:455-461, 2005.
2. **Mishra PK**, Singh BN. Why hybrid males are sterile in *Drosophila*? *Current Science* 89:1813-1819, 2005.
3. **Mishra PK**, Singh BN. Genetic interactions underlying hybrid male sterility in the *Drosophila bipectinata* species complex. *Genes and Genetic Systems* 81: 193-200, 2006.
4. **Mishra PK**, Singh BN. Unique phenotypes and variation in the sex comb patterns and their evolutionary implications in the *Drosophila bipectinata* species complex (Diptera: Drosophilidae). *European Journal of Entomology* 103: 805-815, 2006.
5. **Mishra PK**, Singh BN. *Drosophila bipectinata* species complex: study of phylogenetic relationship among four members through the analyses of morphology of testes and seminal vesicles. *Journal of Zoological Systematics and Evolutionary Research* 44: 175-179, 2006.
6. **Mishra PK**, Singh BN. Assessing the putative roles of X-autosome and X-Y interactions in hybrid male sterility of the *Drosophila bipectinata* species complex. *Genome* 50: 653-659, 2007.
7. Kumar M, Tyagi N, Moshal KS, Sen U, Kundu S, **Mishra PK**, Givvimani S, Tyagi SC. Homocysteine decreases blood flow to the brain due to vascular resistance in carotid artery. *Neurochemical International* 53:214-219, 2008.
8. **Mishra PK**, Tyagi N, Kundu S, Tyagi SC. MicroRNAs are involved in homocysteine induced cardiac remodeling. *Cell Biochemistry and Biophysics* 55: 153-162, 2009.
9. Tyagi N, **Mishra PK**, Tyagi SC, Homocysteine, hydrogen sulfide, and NMDA receptor in heart failure. *Indian Journal of Biochemistry and Biophysics* 46: 441-446, 2009.
10. Kundu S, Kumar M, Sen U, **Mishra PK**, Tyagi N, Metreveli N, Lominadze D, Rodriguez W, Tyagi SC. Nitrotyrosylation, remodeling and endothelial myocyte uncoupling in iNOS, cystathionine beta synthase (CBS) knockouts and iNOS/CBS double knockout mice. *Journal of Cell Biochemistry* 106: 119-126, 2009.
11. Moshal KS, Kumar M, Tyagi N, **Mishra PK**, Metreveli N, Rodriguez WE, Tyagi SC. Restoration of contractility in hyperhomocysteinemia by cardiac-specific deletion of NMDA-R1. *American Journal of Physiology, Heart and Circulatory Physiology* 296: H887-892, 2009.
12. **Mishra PK**, Tyagi N, Sen U, Givvimani S, Tyagi SC. H<sub>2</sub>S ameliorates oxidative and proteolytic stresses and protects the heart against adverse remodeling in chronic heart failure. *American Journal of Physiology, Heart and Circulatory Physiology* 298: H451-456, 2010.
13. Givvimani S, Tyagi N, Sen U, **Mishra PK**, Qipshidze N, Munjal C, Vacek JC, Abe OA, Tyagi SC. MMP2/TIMP2/TIMP4 Versus MMP9/TIMP3 in transition from compensatory hypertrophy and angiogenesis to decompensatory heart failure. *Archives of Physiology and Biochemistry* 116: 63-72, 2010.
14. **Mishra PK**, Metreveli N, Tyagi SC. MMP9 gene ablation and TIMP4 mitigates PAR1 mediated cardiomyocytes dysfunction: a plausible role of dicer and miRNA. *Cell Biochemistry and Biophysics* 57: 67-76, 2010.
15. Qipshidze N, Metreveli N, **Mishra PK**, Lominadze D, Tyagi SC. Hydrogen sulfide mitigates cardiac remodeling during myocardial infarction via improvement of angiogenesis. *International Journal of Biology* 8: 430-441, 2010.
16. **\*Mishra PK**, Givvimani S, Metreveli N, Tyagi SC. Attenuation of beta2-adrenergic receptors and homocysteine metabolic enzymes cause diabetic cardiomyopathy. *Biochemical and Biophysical Research Communication* 15: 175-181, 2010.

17. Givvimani S, Qipshidze N, Tyagi N, **Mishra PK**, Sen U, Tyagi SC. Synergism between arrhythmia and hyperhomocysteinemia in structural heart disease. *International Journal of Physiology, Pathophysiology and Pharmacology* 3: 107-119, 2011.
18. Basu P, Qipshidze N, Sen U, Givvimani S, Munjal C, **Mishra PK**, Tyagi SC. Chronic hyperhomocysteinemia causes vascular remodeling by instigating vein phenotype in artery. *Archives of Physiology and Biochemistry* 117: 270-282, 2011.
19. **\*Mishra PK**, Awe O, Metreveli N, Qipshidze N, Joshua IG, Tyagi SC. Exercise mitigates the homocysteine- beta2 adrenergic receptor interactions to ameliorate contractile dysfunction in diabetes. *International Journal of Physiology, Pathophysiology and Pharmacology* 3:97-106, 2011.
20. Sen U, Sathur PB, Kundu S, Givvimani S, Coley D, **Mishra PK**, Qipshidze N, Tyagi N, Metreveli N, Tyagi SC. Increased endogenous H<sub>2</sub>S generation by CBS, CSE, and 3MST gene therapy improves ex vivo renovascular relaxation in hyperhomocysteinemia. *American Journal of Physiology, Cell Physiology* 303: C41-51, 2012.
21. **\*Mishra PK**, Chavali V, Metreveli N, Tyagi SC. Ablation of MMP9 induces survival and differentiation of cardiac stem cell into cardiomyocytes in the diabetic heart, a role of extracellular matrix. *Canadian Journal of Physiology and Pharmacology* 90: 353-360, 2012.
22. Chavali V, Tyagi SC, **Mishra PK\***. MicroRNA-133a regulates DNA methylation in diabetic cardiomyocytes. *Biochemical and Biophysical Research Communication* 425:668-672, 2012.
23. Chavali V, Tyagi SC, **Mishra PK\***. Differential expression of dicer, miRNA and inflammatory markers in diabetic Ins2+/- Akita hearts. *Cell Biochemistry and Biophysics* 68: 25-35, 2014.
24. Zheng H, Liu X, Li Y, **Mishra PK**, Patel KP. Attenuated dopaminergic tone in the paraventricular nucleus contributing to sympatho-excitation in rats with type2 diabetes. *American Journal of Physiology, Regulatory, Integrative, and Comparative Physiology* 306: R138-148, 2014.
25. Keshewani V, Nandi SS, Sharawat SK, Shahshahan HR, **Mishra PK\***. Hydrogen sulfide mitigates homocysteine mediated pathological remodeling by inducing miR-133a in cardiomyocytes. *Molecular and Cellular Biochemistry* 404: 241-250, 2015.
26. Keshewani V, Chavali V, Hackfort BT, Tyagi SC, **Mishra PK\***. Exercise ameliorates high fat diet induced cardiac dysfunction by increasing interleukin 10. *Frontiers in Physiology* 6: 124, 2015.
27. Nandi SS, Duryee MJ, Thiele GM, Anderson DR, **Mishra PK\***. Induction of autophagy markers is associated with attenuation of miR-133a in diabetic heart failure patients undergoing mechanical unloading. *American Journal of Translational Research* 7(4) 683-696, 2015. \*Corresponding author.
28. Prathipati P, Metreveli N, Nandi SS, Tyagi SC, **Mishra PK\***. Ablation of matrix metalloproteinase-9 prevents cardiomyocytes contractile dysfunction in diabetics. *Frontiers in Physiology* 7:93, 2016.
29. Nandi SS, Zheng H, Sharma NS, Shahshahan HR, Patel KP, **Mishra PK\***. Lack of miR-133a decreases contractility in diabetic hearts: a role for novel crosstalk between tyrosine aminotransferase and tyrosine hydroxylase. *Diabetes* 65 (10): 3075-90, 2016.
30. Sharma NM, Nandi SS, Zheng H, **Mishra PK**, Patel KS. A novel role for miR-133a in centrally mediated activation of the renin-angiotensin system in congestive heart failure. *American Journal of Physiology, Heart and Circulatory Physiology*. 312 (5): H968-979, 2017. Highlighted as an APSselect article, a platform for the best articles in physiological research\_ Link: <http://apsselect.physiology.org/>
31. Nandi SS\*, **Mishra PK\***. H<sub>2</sub>S and homocysteine control a novel feedback regulation of cystathionine beta synthase and cystathionine gamma lyase in cardiomyocytes. *Scientific Reports*. 7: 3639, 2017.
32. Keshewani V, Shahshahan HR, **Mishra PK\***. Cardiac transcriptome profiling of diabetic Akita mice using microarray and next generation sequencing. *PLOS ONE*. 12 (8): e0182828, 2017.
33. Krishnan B, Massilamany C, Basvalingappa RK, Gangaplara A, Rajasekaran RA, Afzal MZ, Sharghi VK, Zhou Y, Eiethoven J J, Nandi SS, **Mishra PK**, Sobel RA, Strande JL, Steffen D, Reddy J. Epitope mapping of SERCA2a identifies an antigenic determinant that induces mainly atrial myocarditis in A/J mice. *Journal of Immunology*. 200 (2): 523-537, 2018.
34. Nandi SS, Shahshahan HR, Shang Q, Kutty S, Boska M, **Mishra PK\***. MiR-133a mimic alleviates T1DM-induced systolic dysfunction in Akita: A MRI-based study. *Frontiers in Physiology*, 9:1275, 2018.
35. Yadav SK and **Mishra PK\***. Isolation, characterization and differentiation of cardiac stem cells from the adult mouse heart. *J. Vis. Exp.* (143), e58448, 2019.

36. Kambis TN, Shahshahan HR, Kar S, Yadav SK, **Mishra PK\***. Transgenic expression of miR-133a in the diabetic Akita heart prevents cardiac remodeling and cardiomyopathy. *Frontiers in Cardiovascular Medicine*, 6:45, 2019.
37. Kar. S, Shahshahan HR, Kambis TN, Yadav SK, Zhen Li, Lefer DJ, **Mishra PK\***. Hydrogen sulfide ameliorates homocysteine-induced cardiac remodeling and dysfunction. *Frontiers in Integrative Physiology*, 10:598, 2019.
38. Kar. S, Shahshahan HR, Hackfort BT, Yadav SK, Yadav R, Kambis TN, Lefer DJ, **Mishra PK\***. Exercise training promotes cardiac hydrogen sulfide biosynthesis and mitigates pyroptosis to prevent high-fat diet-induced diabetic cardiomyopathy. *Antioxidants*, 11; 8 (12), pii: E638, 2019.
39. Yadav SK, Kambis TN, Kar S, Park SY, **Mishra PK\***. MMP9 mediates acute hyperglycemia-induced human cardiac stem cell death by upregulating apoptosis and pyroptosis in vitro. *Cell Death and Disease*. 13; 11(3):186, 2020.
40. Park SY, Pekas E, Headid RJ, Son WM, Wooden TK, Song J, Layec G, Yadav SK, **Mishra PK**, Pipinos I I. Acute mitochondrial antioxidant intake improves endothelial function, antioxidant enzyme activity, and exercise tolerance in peripheral artery disease patients. *American Journal of Physiology, Heart and Circulatory Physiology*. 319(2): H456-H467, 2020.
41. Yadav SK, **Mishra PK\***. Intracellular matrix metalloproteinase-9 mediates epigenetic modifications and autophagy to regulate differentiation in human cardiac stem cells. *Stem Cells*. 39; 497-506, 2021.
42. Kambis TN, Shahshahan HR, **Mishra PK\***. Metabolites and genes behind cardiac metabolic remodeling in mice with type 1 diabetes mellitus. *International Journal of Molecular Science*. 23 (3), 1392, 2022.
43. Park SY, Pekas E, Anderson C, Kambis TN, **Mishra PK**, Schieber MN, Wooden TK, Thompson J, Kim KS, Pipinos I I. Impaired microcirculatory function, mitochondrial respiration, and oxygen utilization in skeletal muscle of claudicating patients with peripheral artery disease. *American Journal of Physiology, Heart and Circulatory Physiology* 2022. PMID: 35333113.

REVIEW ARTICLE (\* corresponding author)

44. **Mishra PK**, Tyagi N, Kumar M, Tyagi SC, MicroRNA as a therapeutic target for cardiovascular disease. *Journal of Cellular and Molecular Medicine* 13: 778-789, 2009.
45. Sen U, **Mishra PK**, Tyagi N, Tyagi SC. Homocysteine to hydrogen sulfide or hypertension. *Cell Biochemistry and Biophysics* 57: 49-58, 2010.
46. **Mishra PK**, Singh SR, Joshua IG, Tyagi SC. Stem cells as a therapeutic target for diabetes. *Frontiers of Bioscience*. 15: 461-477, 2010.
47. **Mishra PK**, Tyagi N, Sen U, Joshua IG, Tyagi SC. Synergism in hyperhomocysteinemia and diabetes: role of PPAR gamma and tempol. *Cardiovascular Diabetology* 9: 49-62, 2010.
48. Tyagi AC, Sen U, **Mishra PK\***. Synergism of miRNA and stem cell: a novel therapeutic approach for diabetic mellitus and cardiovascular diseases. *Current Diabetes Reviews* 7: 367-376, 2011.
49. Chavali V, Tyagi SC, **Mishra PK\***. Predictors and prevention of diabetic cardiomyopathy. *Diabetes Metabolic Syndrome and Obesity: Targets and Therapy* 6: 151-160, 2013.
50. **Mishra PK**, Givvimani S, Chavali V, Tyagi SC. Cardiac matrix: a clue for future therapy. *Biochemical Biophysical Acta, Molecular Basis of Disease* 1832: 2271-2276, 2013.
51. Nandi SS, **Mishra PK\***. Harnessing fetal and adult genetic reprogramming for therapy of heart disease. *Journal of Nature and Science* 1 (4): e71, 2015.
52. Hackfort BT, **Mishra PK\***. Emerging role of hydrogen sulfide-microRNA crosstalk in cardiovascular disease. *American Journal of Physiology, Heart and Circulatory Physiology* 310: H802-H812, 2016.
53. Prathipati P, Nandi SS, **Mishra PK\***. Stem cell-derived exosomes, autophagy, extracellular matrix turnover, and miRNAs in cardiac regeneration during stem cell therapy. *Stem Cell Reviews and Reports* 13 (1): 79-91, 2017.
54. **Mishra PK\***, Ying W, Nandi SS, Bandyopadhyay GK, Patel KS, Mahata SK\*. Diabetic cardiomyopathy: an immunometabolic perspective. *Frontiers in Endocrinology, section Cellular Endocrinology*. 8: 72, 2017.

55. Kar S, Kambis TN, **Mishra PK\***. Hydrogen sulfide-mediated cell death signaling in diabetic cardiomyopathy. *American Journal of Physiology, Heart and Circulatory Physiology*. 316:H1237-H1252, 2019.
56. **Mishra PK\***, Adameová A, Hill JA, Baines CP, Kang PM, Downey JM, Narula J, Takahashi M, Abbate A, Pirstine HC, Su S, Higa JK, Kawasaki NK, Matsui T. Guidelines for evaluating myocardial cell death. *American Journal of Physiology, Heart and Circulatory Physiology*, 317 (5): H891-922, 2019. **Winner of the AJP- Heart and Circulatory Physiology 2020 Best Review Article Award** (Downloads>10,800 times, citations 56) <https://journals.physiology.org/doi/full/10.1152/ajpheart.00259.2019>
57. **Mishra PK\***, Tandon R, Byrareddy SN. Diabetes and COVID-19 risk: an miRNA perspective. *American Journal of Physiology, Heart and Circulatory Physiology*.319 (3): H604-H609: 2020. PMID: 32762561. <https://journals.physiology.org/doi/full/10.1152/ajpheart.00489.2020> (Downloads >5600 times, citation 7)
58. Klionsky DJ, ---**Mishra PK**--- et al. Guidelines for the use and interpretation of assays for monitoring autophagy (4<sup>th</sup> edition). *Autophagy*, 17 (1): 1-382, 2021. PMID: 33634751.
59. Agic MB, Chalise U, Daseke MJ, Konfrst SR, Salomon JD, **Mishra PK**, Lindsey ML. Infarct in the heart: what's MMP-9 got to do with it? *Biomolecules*. 11: 491, 2021. INVITED ARTICLE
60. Kambis TN, Tofilau HMN, Gawargi FI, Chandra S, **Mishra PK\***. Regulating polyamine metabolism by miRNAs in diabetic cardiomyopathy. *Current Diabetes Reports*. 21 (12):52, 2021. PMID: 34902085.

## EDITORIAL/PERSPECTIVE (\* corresponding author)

61. **Mishra PK**. Is miR-133a a promising therapeutic target for heart failure? *Journal of Diabetes and Metabolism* 5: 8: e118, 2014.
62. Das A, Reis F, **Mishra PK**. mTOR signaling in Cardiometabolic disease, cancer, and Aging 2018. *Oxidative Medicine and Cellular Longevity*, Feb 4; 9692528, 2019. doi: 10.1155/2019/9692528. PMID: 30863483.
63. **Mishra PK\*** and Nemer G. The non-coding genome and cardiovascular disease. *Frontiers in Cardiovascular Medicine*. 6:98, 2019. doi:10.3389/fcvm.2019.00098. PMID: 31380396.
64. **Mishra PK**. Why the diabetic heart is energy inefficient: ketogenesis and ketolysis perspective. *American Journal of Physiology, Heart and Circulatory Physiology*. 2021. PMID: 34533402. <https://journals.physiology.org/doi/full/10.1152/ajpheart.00260.2021> (downloads>1000 times)

## BOOK CHAPTER (\* corresponding author)

1. Moshal KS, Kumar M, Tyagi N, **Mishra PK**, Kundu S, Tyagi SC. Oxidative and proteolytic stress in homocysteine associated cardiovascular diseases. In H. Sauer et al (Eds); Studies on cardiovascular disorders. Springer Science+ Business Media, LLC, 139-148, 2010.
2. **Mishra PK**, Singh SR, Sharma R, Tyagi SC. Stem cell for myocardial regeneration. In Singh SR et al (Eds); Stem Cells: organogenesis and cancer. Transworld Research Network, 119-126, 2010.
3. **Mishra PK**, Kuypers NJ, Singh SR, Diaz N, Chavali V, Tyagi SC. Cardiac stem cell niche, MMP9, and culture and differentiation of embryonic stem cells. In Kursad T (Ed): Stem cells and niche. Springer, 1035: 153-163, 2013. PMID: 23959989
4. **Mishra PK**, Tyagi SC. MicroRNomics of diabetic cardiomyopathy. In Turan B and Dhalla NS (Eds): Diabetic cardiomyopathy, Springer 9: 179-188, 2014.
5. Chavali V, Nandi SS, Singh SR, **Mishra PK\***. Generating double knockout mice to model genetic intervention in diabetic cardiomyopathy in humans. In Singh SR (Editor): Mouse Genetics: Methods and Protocols, Springer, 1194:385-400, 2014. PMID: 25064116
6. Nandi SS, **Mishra PK\***. Targeting miRNA for therapy of juvenile and adult diabetic cardiomyopathy. In Mettinger KL, Rameshwar P and Kumar V (Editors): Exosomes, Stem Cells and MicroRNA: Aging, Cancer, and Age-Related Disorders, Springer, 978-3-319-74470-4. Adv Exp Med Biol. 1056:47-59, 2018. PMID: 29754174
7. Yadav SK, **Mishra PK\***. Isolation, characterization, and differentiation of mouse cardiac progenitor cells. In Singh SR and Pranela Rameshwar (Editors): Somatic Stem Cells: Methods and Protocols", Second Edition. Springer, 978-1-4939-8696-5. Methods Mol Biol. 1842: 183-191, 2018. PMID: 30196409



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10. **Mishra PK**. Cardiac regenerative therapy in diabetes: challenges and potential therapeutics. In Haider KH (Editor): *Stem Cells: Latest Advances*. Springer, 2021. ISBN 978-3-030-77051-8.

#### BOOK EDITOR

1. Singh SR, **Mishra PK**, Hou SX. Editors, *Stem Cells: Organogenesis and Cancer*, Transworld Research Network, ISBN: 978-81-7895-487-5; 2010.

#### PUBLISHED ABSTRACTS AND CONFERENCE PROCEEDINGS

1. **Mishra PK**, Metreveli N, Givvimani S, Kundu S, Tyagi N, Qipshidze N, Sen U, Basu P, Abe OA, Gillespie WM, Munjal C, Vacek J, Tyagi SC. Down regulation of dicer involved in MMP-9 mediated cardiomyocytes dysfunction. *Hypertension*, 54: e26 - e127; 2009.
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5. **Mishra PK**, Metreveli N, Givvimani S, Panguluri SK, Sen U, Tyagi N, Basu P, Munjal C, Joshua IG, Tyagi SC. Ablation of MMP-9 ameliorates miR-1 and -133 mediated cardiac dysfunction in insulin2 mutant diabetic mice. *Hypertension*, 56: e50 - e166; 2010.
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11. **Mishra PK**, Givvimani S, Sen U, Abe OA, Tyagi N, Basu P, Munjal C, Tyagi SC. Role of dicer in diabetic cardiomyopathy through dysregulation of MMP-9 and TIMP-4. *FASEB J*, 24: 978.19; 2010.
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26. **Mishra PK**, Joshua IG, Tyagi SC. Exercise mitigates beta-2 adrenergic receptor dysfunction by decreasing homocysteine in diabetes. *FASEB J*, 26: 1076.2, 2012.
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29. Chavali V, Diaz, N L, Tyagi SC, **Mishra PK**. MiR-133a ameliorates cardiac stem cells survival and differentiation in Insulin2 mutant diabetic mice. *FASEB J*, 27: 1151.2, 2013.
30. Chavali V, Harris JM, Givvimani S, Qipshidze N, Murphy LA, Tyagi G, Metreveli N, Tyagi SC, **Mishra PK**. Exercise ameliorates high fat diet mediated inflammation, DNA methylation and heart failure in female mice. *FASEB J*, 27: 1134.6, 2013.
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33. **Mishra PK**. Abrogation of MMP9 ameliorates cardiac dysfunction in diabetes. *J Clin Expt. Cardiology*, 4: 82, 2013.
34. Nandi S, Liu X, Sharma N, Chavali V, Patel K, **Mishra PK**. miR-133a ameliorates cardiac dysfunction in diabetes: possibly by restoring beta-adrenergic receptor function and expression. *FASEB J*, 28: 1078.6, 2014.
35. Nandi S, **Mishra PK**. MiR-133a alleviates cardiac autophagy by targeting AMPK in Ins2+/- diabetic mice. *FASEB J*, 28: 868.3, 2014.
36. **Mishra PK**, Nandi S, Chavali V. Mdivi-1 mitigates cardiac dysfunction by attenuating mitophagy in diabetes. *FASEB J*, 28: 1155.3, 2014.
37. Wang H, **Mishra PK**, Nandi SS, Cornish KG, Zucker IH. Cardiac sympathetic afferent denervation improves cardiac inflammation and ameliorates cardiac remodeling in Post-MI rats. *Hypertension*, 64: A487, 2014.

38. Sharma N, Nandi SS, Zheng H, **Mishra PK**, Patel KP. Reduced miR-133a results in upregulation of angiotensinogen in the paraventricular nucleus of rats with chronic heart failure. *FASEB J*, 29:829.2, 2015.
39. Sharawat S, Nandi SS, Keshewani V, Shahshahan HR, **Mishra PK**. Mdivi-1 mitigates ROS and mitophagy, improves healthy mitochondrial pool in hyperglycemic cardiomyocytes. *FASEB J*, 29:1040.4, 2015.
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41. **Mishra PK**. Novel cardioprotective role of miR-133a. *Current Research Cardiology*, 2:125, 2015.
42. Nandi SS, **Mishra PK**. MiR-133a regulates cardiac autophagy in diabetics. *Current Research Cardiology*, 2:121, 2015.
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44. Hackfort BT, Prathipati P, **Mishra PK**. Role of hydrogen sulfide in the regulation of DNA methyl transferases in cardiomyocytes. *Current Research Cardiology*, 2:140, 2015.
45. Prathipati P, Hackfort BT, Nandi SS, Shahshahan HR, **Mishra PK**. Ablation of MMP9 alleviates mitophagy and mitigates cardiac dysfunction in diabetics. *Current Research Cardiology*, 2:144, 2015.
46. Nandi SS, **Mishra PK**. Ablation of MMP9 upregulates autophagic flux in the diabetic heart. *FASEB J*, 2017; 31, 1013.6.
47. Nandi SS, **Mishra PK**. Hydrogen sulfide controls CBS-CTH feedback regulation by inducing miR-133a and suppressing SP1 in a dose dependent manner in cardiomyocytes. *FASEB J*, 2017; 31, 1079.7.
48. Yadav SK, **Mishra PK**. Ablation of MMP9 mitigates high glucose-induced cardiac stem cell death. *Circulation*, 2017, 136: A20116.
49. Nandi SS, **Mishra PK**. Cardiac-specific overexpression of miR-133a in the diabetic heart mitigates mitochondrial abnormality by targeting TIM17a. *FASEB J*, 2018; 32, 752.5.
50. Yadav SK, **Mishra PK**. Ablation of MMP9 prevents cardiac pyroptosis of Ins2<sup>+/-</sup> T1DM mice heart. *FASEB J*, 2018; 32, 838.5.
51. Kambis TN, Yadav SK, **Mishra PK**. Cardiac-specific overexpression of miR-133a decreases pyroptosis in Ins2<sup>+/-</sup> T1DM mice heart. *FASEB J*, 2018; 32, 838.12.
52. Kar S, Yadav SK, Goyal R, Lefer DJ, **Mishra PK**. Hydrogen sulfide protects the heart against homocysteine-induced remodeling by regulating autophagy and pyroptosis. *Circulation Research*, 2019. Vol 125, Issue Suppl\_1. DOI: 10.1161/res.125.suppl\_1.433.
53. Kar S, Shahshahan HR, **Mishra PK**. Hydrogen sulfide protects the heart against ferroptotic cell death in diabetic cardiomyopathy. *Circulation Research*, 2020. Vol 127, Issue Suppl\_1. DOI: 10.1161/res.127.suppl\_1.501.
54. Kambis TN, **Mishra PK**. Diabetes mellitus-induced metabolic remodeling is alleviated by transgenic overexpression of miR-133a in the heart. *Circulation Research*, 2020. Vol 127, Issue Suppl\_1. DOI: 10.1161/res.127.suppl\_1.501.
55. Shahshahan HR, **Mishra PK**. Cardiomyocyte-specific transgenic MMP9 overexpression induces cardiac remodeling. *The FASEB Journal*, 2021. Vol 35, Issue Suppl\_1. DOI: 10.1096/fasebj.2021.35. S1.04281.

#### SELECTED ORAL/PRESENTATION

1. Shahshahan HR, Hackfort BT, **Mishra PK** (2021). Cardiac-specific transgenic MMP9 overexpression induces cardiac remodeling. Experimental Biology meeting. April 27-30. Virtual.
2. Kar S, Shahshahan HR, **Mishra PK** (2020). Hydrogen sulfide protects the heart against ferroptosis in diabetic cardiomyopathy. Presented at 2020 Iowa Physiological Society and Midlands Society of Physiological Sciences Scientific Sessions. Virtual meeting. October 30-31 (Received Outstanding Graduate Student Oral Presentation Award).
3. Yadav SK, **Mishra PK** (2019). Ablation of MMP9 prevents cardiac pyroptosis of Ins2<sup>+/-</sup> T1DM mice heart. Presented at "The Midlands Society of Physiological Sciences". Omaha, NE, October 26 (Received 1<sup>st</sup> Prize in Poster Presentation in Postdoctoral category).

4. Kar S, Yadav SK, Goyal R, Lefer DJ, **Mishra PK** (2019). Hydrogen sulfide protects the heart against homocysteine-induced remodeling by regulating autophagy and pyroptosis. Presented at “The Midlands Society of Physiological Sciences”. Omaha, NE, October 26 (Received 1<sup>st</sup> Prize in Poster Presentation in Predoctoral category).
5. Kar S, Yadav SK, Goyal R, Lefer DJ, **Mishra PK** (2019). Hydrogen sulfide protects the heart against homocysteine-induced remodeling by regulating autophagy and pyroptosis. AHA BCVS meeting, Boston, July 20- August 1.
6. Shahshahan HR, Kar S, **Mishra PK** (2018). Hydrogen sulfide protects against homocysteine-induced cardiac remodeling and dysfunction. Presented in Nebraska Physiological Society meeting, Omaha, NE, October 2018. (Received Poster Award in Graduate category).
7. Yadav SK, **Mishra PK** (2018). Ablation of MMP9 prevents cardiac pyroptosis of Ins2<sup>+/-</sup> T1DM mice heart. Presented in Nebraska Physiological Society meeting, Omaha, NE, 2018. (Received Poster Award in Postdoctoral category).
8. Nandi SS, **Mishra PK** (2018). Cardiac-specific overexpression of miR-133a in the diabetic heart mitigates mitochondrial abnormality by targeting TIM17a. Experimental Biology meeting, San Diego, CA. (Selected for the Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award).
9. Yadav SK, **Mishra PK** (2018). Ablation of MMP9 prevents cardiac pyroptosis of Ins2<sup>+/-</sup> T1DM mice heart. Experimental Biology meeting, San Diego, CA.
10. Kambis TN, Yadav SK, **Mishra PK** (2018). Cardiac-specific overexpression of miR-133a decreases pyroptosis in Ins2<sup>+/-</sup> T1DM mice heart. Experimental Biology meeting, San Diego, CA.
11. Marta P, Yadav R, Nandi SS, Shahshahan HR, **Mishra PK** (2017). Role of homocysteine and hydrogen sulfide donors on cell death signaling in HL1 cardiomyocytes. Presented in Nebraska Physiological Society meeting 2017, Omaha, NE. (Received Poster Award in undergraduate category).
12. Nandi SS, **Mishra PK** (2017). MiR-133a improves beta-adrenergic receptors sensitivity in hyperglycemic cardiomyocytes. American Diabetes Association Scientific Session meeting, San Diego, CA, June 9-13.
13. Nandi SS, **Mishra PK** (2017). Ablation of MMP9 upregulates autophagic flux in the diabetic heart. Experimental Biology meeting, Chicago, IL, April 25. (Received Research Recognition Award of APS. Also, Winner of the 2017 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award).
14. Nandi SS, **Mishra PK** (2017). Hydrogen sulfide controls CTH-CBS feedback regulation by inducing miR-133a and suppressing SP1 in a dose-dependent manner in cardiomyocytes. Experimental Biology meeting, Chicago, IL, April 26.
15. Zucker IH, Rozanski GJ, **Mishra PK**, Wang H (2017). Cardiac spinal sensory endings mediate remodeling in the post MI state. U-CARS Utah Cardiac Recovery Symposium, University of Utah School of Medicine, UT, January 12-13.
16. Nandi SS, **Mishra PK** (2016). Hydrogen sulfide controls CTH-CBS feedback regulation by inducing miR-133a and suppressing SP1 in a dose-dependent manner in cardiomyocytes. Nebraska Physiological Society meeting, Omaha, NE, October 15.
17. Nandi SS, **Mishra PK** (2015). MiR-133a regulates cardiac autophagy in diabetics. Annual meeting of the international academy of cardiovascular sciences (IACS): North American Section” held in Omaha, NE, September 10-12 (Received the Morris Karmazyn Award for the Best Poster in Translational Medicine).
18. Sharma NM, Nandi SS, Liu X, Zheng H, **Mishra PK**, Patel KP (2015). Upregulation of angiotensinogen in the paraventricular nucleus of the hypothalamus during chronic heart failure: Role of miR-133a. Annual meeting of the international academy of cardiovascular sciences (IACS): North American Section” held in Omaha, NE, September 10-12 (Received the Eric Olson Young Faculty Award).
19. Hackfort BT, Prathipati P, **Mishra PK** (2015). Role of hydrogen sulfide in the regulation of DNA methyl transferases in cardiomyocytes. Nebraska Physiological Society meeting, held in University of South Dakota, SD, October 10 (Received the Best Poster Presentation Award).
20. Prathipati P, Hackfort BT, Nandi SS, Shahshahan HR, **Mishra PK**. Ablation of MMP9 alleviates mitophagy and mitigates cardiac dysfunction in diabetics. Nebraska Physiological Society meeting, held in University of South Dakota, SD, October 10 (Received the Oral Presentation Award).
21. Nandi SS, **Mishra PK** (2015). MiR-133a mitigates mitophagy in Ins2<sup>+/-</sup> diabetic heart. Experimental Biology, March 28- April1, Boston, MA (Selected for the Oral Presentation).

22. Wang Hanjun, **Mishra PK**, Nandi SS, Cornish KG, Zucker IH (2014). Cardiac sympathetic denervation improves cardiac inflammation and ameliorates cardiac remodeling in post-MI rats. AHA, High Blood Pressure Research, San Francisco, CA, September 9-12
23. Nandi SS, Chavali V, **Mishra PK** (2014). MiR-133a alleviates cardiac autophagy by targeting AMPK in Ins2+/- diabetic mice. Experimental Biology, April 26-30, San Diego, CA (Selected for the Oral Presentation).
24. Nandi SS, Liu X, Zheng H, Sharma H, Chavali V, Patel KS, **Mishra PK** (2014). MiR-133a ameliorates cardiac dysfunction in diabetes: possibly by restoring  $\beta$ -adrenergic receptor function and expression. Experimental Biology, April 26-30, San Diego, CA (Selected for the Oral Presentation).
25. **Mishra PK**, Nandi SS, Chavali V (2014). Mdivi-1 mitigates cardiac dysfunction by attenuating mitophagy in diabetes. Experimental Biology, April 26-30, San Diego, CA
26. Chavali V, Nandi SS, **Mishra PK** (2013). Mitochondrial division inhibitor (Mdivi-1) ameliorates diabetic cardiomyopathy by attenuating mitophagy and DNA methylation. Nebraska Physiological Society Meeting, October 4, University of Nebraska, Omaha, NE
27. Nandi SS, Chavali V, **Mishra PK** (2013). MiR-133a mitigates autophagy by regulating AMPK/mTOR signaling and ameliorates diabetic cardiomyopathy. Nebraska Physiological Society Meeting, University of Nebraska, Omaha, NE, October 4,
28. Chavali V, Metreveli N, Tyagi S, **Mishra PK** (2013). Mitochondrial division inhibitor (Mdivi-1) mitigates autophagy and DNA methylation and ameliorates diabetic cardiomyopathy. The cardiovascular Forum for Promoting Centers of Excellence and Young Investigators, Louisville, KY, August 15-17 (Selected for the James Willerson Clinical Award Lecture).
29. **Mishra PK**, Chavali V, Metreveli N, Tyagi SC (2013). Ablation of MMP9 ameliorates epigenetic modifications and mitigates diabetic cardiomyopathy. Experimental Biology, April 20-24, Boston, USA.
30. Qipshidze N, **Mishra PK**, Tyagi SC (2013). Mitochondrial division inhibitor (Mdivi-1) ameliorates post-myocardial infarction via stimulating stem cell by elevating levels of miR-499 in diabetes. Experimental Biology, April 20-24, Boston, MA
31. Chavali V, Diaz NL, Tyagi SC, **Mishra PK** (2013). MiR-133a ameliorates cardiac stem cell survival and differentiation in Insulin 2 mutant diabetic mice. Experimental Biology, April 20-24, Boston, MA
32. Chavali V, Harris J M, Givvimani S, Qipshidze N, Murphy LA, Tyagi G, Metreveli N, Tyagi SC, **Mishra PK** (2013). Exercise ameliorates high fat diet mediated inflammation, DNA methylation and heart failure in female mice. Experimental Biology, April 20-24, Boston, MA
33. **Mishra PK**, Chavali V, Metreveli N, Tyagi SC (2012). Targeted deletion of MMP9 mitigates autophagy mediated contractile dysfunction in Insulin 2 mutant diabetic mice. AHA, Scientific Session, November 3-7, Los Angeles, CA.
34. **Mishra PK**, Metreveli N, Chavali V, Tyagi N, Qipshidze N, Sen U, Joshua IG, Tyagi SC. (2012). Role of MMP9 in cardiac stem cell differentiation and autophagy. Experimental Biology, April 21-25, San Diego, CA
35. Chavali V, Tyagi N, Tyagi SC, **Mishra PK**. (2012). MiR-133 as an epigenetic regulator of diabetic heart failure. Experimental Biology, April 21-25, San Diego, CA
36. **Mishra PK**, Chavali V, Sathur P, Qipshidze N, Tyagi SC (2012). H<sub>2</sub>S ameliorates homocysteine mediated attenuation of miR-133 and  $\beta$ 2-AR in diabetic hearts. 2<sup>nd</sup> International Conference on H<sub>2</sub>S Biology and Medicine, September 20-22, Atlanta, GA. Selected for the BEST POSTER AWARD.
37. Qipshidze N, **Mishra PK**, Givvimani S, Sen U, Tyagi SC (2012). Hydrogen sulfide protects coronary vasospasm after myocardial infarction and eliminates myocardial infarction zone by promoting to grow new vessels. 2<sup>nd</sup> International Conference on H<sub>2</sub>S Biology and Medicine, September 20-22, Atlanta, GA
38. **Mishra PK**, Chavali V, Metreveli N, Tyagi SC (2012). Targeted deletion of MMP9 mitigates autophagy mediated contractile dysfunction in Insulin2 mutant diabetic mice. Scientific Session, American heart Association, November 3-7, Los Angel, CA
39. Tyagi N, Narayanan N, **Mishra PK**, Qipshidze N, Givvimani S, Tyagi SC (2012). Epigenetic reprogramming of mitochondrial dysfunction in hyperhomocysteinemia. Experimental Biology, April 21-25, San Diego, CA
40. **Mishra PK**, Joshua IG, Tyagi SC. (2012). Exercise mitigates beta2-adrenergic receptor dysfunction by decreasing homocysteine in diabetes. Experimental Biology, April 21-25, San Diego, CA

41. Tyagi N, Qipshidze N, Munjal C, Metreveli N, Dankowski A, **Mishra PK**, Sen U, Lominadze D, Givvimani S, Tyagi SC (2011). Hydrogen sulfide ameliorates mitochondrial MMP-9 mediated mitochondrial remodeling in cerebral ischemia. *Experimental Biology*, April 9-13, Washington, DC
42. **Mishra PK**, Awe O, Metreveli N, Qipshidze N, Munjal C, Tyagi N, Tyagi SC. (2011). Exercise ameliorates diabetic cardiomyopathy by inducing beta2-adrenergic receptors and miR-133a, and attenuating MMP-9. *Experimental Biology*, April 9-13, Washington, DC
43. Munjal C, Tyagi N, Qipshidze N, **Mishra PK**, Givvimani S, Sen U, Lominadze D, Tyagi SC (2011). The siRNA targeting MMP-9 mitigates homocysteine- induced disruption of barrier integrity in human intestinal microvascular cells. *Experimental Biology*, April 9-13, Washington, DC
44. Sen U, Qipshidze N, Givvimani S, **Mishra PK**, Munjal C, Tyagi N, Tyagi SC (2011). Hydrogen sulfide mitigates homocysteine- mediated mitophagy. *Experimental Biology*, April 9-13, Washington DC
45. Qipshidze N, **Mishra PK**, Metreveli N, Lominadze D, Tyagi SC (2011). Hydrogen sulfide improves angiogenesis and regulates cardiac function and structure during myocardial infarction in mice. *Experimental Biology*, April 9-13, Washington, DC
46. **Mishra PK**, Metreveli N, Givvimani S, Panguluri SK, Sen U, Tyagi N, Basu P, Munjal C, Joshua IG, Tyagi SC. (2010). Ablation of MMP-9 ameliorates miR-1 and -133 mediated cardiac dysfunction in insulin2 mutant diabetic mice. The Best of AHA specialty conference. (**Best of HBPR 2010**). Scientific session of AHA, Chicago, IL
47. Kandel M, Tyagi N, Qipshidze N, Munjal C, Basu P, Givvimani S, Abe O, **Mishra PK**, Sen U, Tyagi SC (2010). Folic acid mitigated homocysteine-mediated decrease in bone blood flow and bone remodeling. *Experimental Biology*, April 24-28, Anaheim, CA
48. Givvimani S, Jala R, **Mishra PK**, Sen U, Tyagi N, Qipshidze N, Munjal C, Tyagi SC. (2010). Functional heterogeneity in vascular remodeling (MMP-9<sup>-/-</sup> and PAR-1<sup>-/+</sup>) in hyperhomocysteinemic (CBS<sup>-/+</sup>) and diabetic (Akita, Ins2<sup>-/+</sup>) mice. *Experimental Biology*, April 24-28, Anaheim, CA
49. **Mishra PK**, Givvimani S, Sen U, Abe OA, Tyagi N, Basu P, Munjal C, Tyagi SC. (2010). Role of dicer in diabetic cardiomyopathy through dysregulation of MMP-9 and TIMP-4. *Experimental Biology*, Anaheim, CA, April 24-28
50. Tyagi N, Qipshidze N, Givvimani S, Kandel M, **Mishra PK**, Sen U, Johar A, Tyagi SC (2010). Tetrahydrocurcumin ameliorates mtMMP-9 mediated mitophagy and mitochondria remodeling in Stroke. *Experimental Biology*, April 24-28, Anaheim, CA
51. Munjal C, Falcon JF, Qipshidze N, **Mishra PK**, Tyagi SC (2010). DDAH-2 & eNOS in Mesenteric Vascular Remodeling: Role of Fenugreek. *Experimental Biology*, April 24-28, Anaheim, CA
52. Basu P, Qipshidze N, Sen U, **Mishra PK**, Tyagi SC (2010). Blood flow regulates vasculature by maintaining elastin /collagen and MMP/ TIMP ratio. *Experimental Biology*, April 24-28, Anaheim, CA
53. **Mishra PK**, Metreveli N, Givvimani S, Kundu S, Tyagi N, Qipshidze N, Sen U, Basu P, Abe OA, Gillespie WM, Munjal C, Vacek J, Tyagi SC (2009). Downregulation of dicer involved in MMP-9 mediated cardiomyocytes dysfunction. 63<sup>rd</sup> High Blood Pressure Research Conference, September 23-26, Chicago, IL
54. Tyagi N, S Kundu, N. Qipshidze, **Mishra PK**, S. Givvimani, S. Tyagi (2009). Cardiac- specific deletion of N-methyl-D-aspartate R1 ameliorates mitochondrial connexin-43 translocation and mitochondrial MMP-9 activity in hyperhomocysteinemia. Basic cardiovascular Sciences Conference. July 20-23, Las Vegas, NV
55. Kumar M, Givvimani S, Sathnur PB, **Mishra PK**, Kundu S, Rodriguez-Alvarez WE, Tyagi N, Sen U, Tyagi SC (2009). Cerebro-protective role of tetra-hydro-curcumin in hyperhomocysteinemic ischemic mice by regulating NF-kB. *Experimental Biology*, April 18-22, New Orleans, LA
56. Tyagi N, Givvimani S, Kumar M, Kundu S, Gillespie W M, **Mishra PK**, Sathnur P, Lominadze D, Sen U, Tyagi SC (2009). Curcumin reduces matrix metalloproteinase-9 expression and ameliorates blood brain barrier dysfunction in stroke. Brain & Brain PET 09 conference Chicago, IL
57. **Mishra PK** Tyagi N, Kumar M, Kundu S, Givvimani S, Sen U, Tyagi SC (2009). Role of microRNAs in homocysteine-induced oxidative stress. *Experimental Biology*, April 18-22, New Orleans, LA

## D. INVITED LECTURES AT INSTITUTIONS

COMMUNITY

1. A potential new therapeutic strategy for diabetes-induced heart failure. North Omaha Community Care Council meeting. September 8, 2021

UNIVERSITY

2. Role of MMP9 in diabetic cardiomyopathy. Institute of Cellular Therapeutics, University of Louisville, Louisville, Kentucky. January 2013.
3. Multifaceted role of miR-133 in the heart. Department seminar in the Department of surgery at UNMC. September 2013.
4. Novel regulatory mechanisms of diabetic cardiomyopathy. Department of Internal Medicine, UNMC. January 2014.
5. Role of miRNA in cardiac remodeling. M.D. /Ph.D. Scholar Program Luncheon meeting at UNMC. April 2014.
6. Regulating the regulators of autophagy in diabetic hearts. The Nebraska Gateway to Nutrigenomics Seminar series, University of Nebraska-Lincoln. October 2014.
7. Mechanism of pathological cardiac remodeling in diabetics. Department of Pharmacology, UNMC. April 2014.
8. Autophagy and miRNA in diabetic heart failure. Cardiology Grand Round at UNMC. February 2015.
9. MicroRNA: From Bench side to clinical trials. Department of Genetics, Cell Biology and Anatomy. November 2016.
10. A novel therapeutic strategy for diabetic cardiomyopathy. VA Medical Center, NE. December 2016.
11. Programming death for life: unique mechanisms for cell death. Cellular and Integrative Physiology, UNMC. August 2017.
12. Cell death at the heart of diabetes. Department of surgery, UNMC. September 2019.
13. Micromanaging the “sweet” heart to prevent heart failure. VA Medical Center, NE. February 2022.

NATIONAL

14. MicroRNA and MMP9 in the diabetic heart. Department of Physiology, Wayne State University, Detroit, Michigan. November 2012.
15. MicroRNA and MMP9 in the diabetic heart. Department seminar at the Cellular and Integrative Physiology, UNMC. January 2013.
16. MicroRNA and MMP9 in the diabetic heart. Learner Research Institute, Cleveland Clinic, Cleveland, Ohio. January 2013.
17. Regulating autophagy in diabetic hearts. School of Medicine Basic Biomedical Sciences, University of South Dakota. September 2016.
18. MicroRNomics of diabetic cardiomyopathy: From regulatory RNA to therapeutic candidate. Department of Functional Tissue Engineering, North Carolina University, North Carolina. August 2018.
19. Micromanaging cardiac remodeling to develop treatment for diabetic cardiomyopathy. Vascular Biology Center Research Seminar series at the Medical College of Georgia. Augusta. February 2019.

INTERNATIONAL

20. MicroRNA at the Heart of Diabetes. International Webinar organized by the South Asian University, Faculty of Life Sciences and Biotechnology, New Delhi, India. August 26, 2021.

## E. INVITED LECTURE AT CONFERENCES

NATIONAL

1. Ablation of MMP9 ameliorates miR-1, and miR-133 mediated cardiac dysfunction in Insulin 2mutant diabetic mice. Harry Goldblatt Award Lecture, AHA Hypertension Council, November 2010
2. Exercise ameliorates diabetic cardiomyopathy by inducing beta-2 adrenergic receptors and miR-133a, and attenuating MMP9. Experimental Biology meeting Featured topic “Fibroblast-cardiomyocyte signaling”, April 2011.
3. Exercise mitigates beta2-adrenergic receptor dysfunction by decreasing homocysteine in diabetes. Experimental Biology meeting Featured topic “Effect of exercise and nutritional perturbations on cumulative muscle protein synthesis”, April 2012.

4. Ablation of MMP9 ameliorates epigenetic modifications and mitigates diabetic cardiomyopathy. Experimental Biology meeting Featured topic "MicroRNA and stem cell in muscle pathophysiology", April 2013.
5. Cardioprotective role of miR-133a in diabetic hearts. The Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators, Louisville, Kentucky, August 2013.
6. Novel cardioprotective role of miR-133a. Annual Meeting of the International Academy of Cardiovascular Sciences: North American section, Omaha, Nebraska, September 2015.
7. MicroRNA-autophagy axis in diabetic hearts. 9<sup>th</sup> Global Diabetologists Annual Meeting and Medicare Expo, Dallas, Texas, January 2016.
8. A novel role for cardiac tyrosine aminotransferase in miR-133a-mediated regulation of contractility of diabetic hearts. Annual meeting of the International Academy of Cardiovascular Sciences: North American section, 5<sup>th</sup> Annual Forum to Promote Young Investigators and Centers of Excellence in Cardiovascular Sciences, Orlando, Florida, September 2017.

#### INTERNATIONAL

9. Genetic deletion of MMP9 induces miRNA and ameliorates heart failure in diabetics. International symposium on "Population genetics and chromatin dynamics, Banaras Hindu University, Varanasi, INDIA, January 2012.
10. Cardioprotective role of miR-133 in diabetic hearts. 2nd Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators, Winnipeg, Manitoba, CANADA, September 2014.
11. MICRO-managing cardiac autophagy to ameliorate diabetic cardiomyopathy. Trends in Biochemical and Biomedical Research: Advances and Challenges, Banaras Hindu University, Varanasi, INDIA, February 2018.
12. Pyroptosis in diabetic cardiomyopathy. International conference on Emerging Research in Bioscience, Guru Ghasidas Vishwavidyalaya, INDIA, October 2018.
13. miRNA at the Heart of diabetes and COVID-19. Diabetes Conclave 2021, VIRTUAL, March 2021.  
<https://diabetesconference.mindauthors.com/speakers/>

#### **KEYNOTE SPEAKER**

14. Role of miRNA in prevention of diabetes-induced heart failure. International e-Conference on Recent Advances in Life Sciences with Reference to Disease, Disorder and Adaptations. Lalit Narayan Mithila University, INDIA, July 2021.  
<https://www.youtube.com/watch?v=RbrUTHVbUjA> (starts at 1:14:56)

#### F. ORGANIZING SCIENTIFIC SESSIONS / CONFERENCES

1. Euro Weight Loss-2015, Frankfurt, GERMANY, August 2015
2. Annual meeting of the International Academy of Cardiovascular Sciences: North American Section, Nebraska, USA, September 2015. In addition to organization, deliver a talk, and co-chaired a scientific session
3. Midlands Physiological Society Scientific Session, October 2021, Nebraska, USA.

#### G. SOCIAL MEDIA: Podcasts for the *American Journal of Physiology (AJP)- Heart and Circulatory Physiology*

##### AUTHOR

1. October 23, 2019: Guidelines for Evaluating Myocardial Cell Death  
<https://ajpheart.podbean.com/e/guidelines-for-evaluating-myocardial-cell-death/>

##### CONTENT EXPERT

2. July 15, 2016: miR-140 and Right heart Hypertrophy  
<https://ajpheart.podbean.com/e/mir140-and-right-heart-hypertrophy/?comments=true>
3. March 23, 2018: MicroRNA translocation into the Mitochondria  
<https://ajpheart.podbean.com/e/micrna-translocation-into-the-mitochondria/>

##### HOST

4. August 6, 2021: Cardiomyocyte-specific Txnip C247S mutation improves left ventricular functional reserve in streptozotocin-induced diabetic mice.



## IV. TEACHING

### A. CLASSROOM LECTURES

#### UNIVERSITY OF LOUISVILLE, KENTUCKY

- 2010 to 2012: Methods in Physiology Research course: 3 contact hours/class/week x 4 = 12 contact hours/year. The first hour of the class was dedicated to lecture-based learning on principles of flow cytometry and its applications in basic science and pharmacology industry. The second and third hours of the class were practical demonstration of flow cytometry. This included sample preparation, selecting experimental controls, loading samples in the flow cytometry instrument, acquiring, analyzing, and presenting data. Students also learnt about good versus bad data and troubleshooting in flow cytometry.

Total contact hours: 36

#### UNIVERSITY OF NEBRASKA MEDICAL CENTER, NEBRASKA

- 2013: Cardiopulmonary Function in Health and Disease course (CIP/IPMM 916): 2 contact hours. Mechanism of cardiac hypertrophy
- 2014-2021: PA/PT Intermediate/Graduate Physiology course (CIP 606/608): 11 contact hours/year. Sensory Systems Physiology.
- 2015, 2017-2020: Cardiopulmonary Function in Health and Disease course: 2x2 = 4 contact hours. Mechanism of cardiac hypertrophy, Advanced technique on miRNA assay/autophagy
- 2015: Graduate Physiology Recitation (CIP 807): 1 contact hour
- 2017-2018,2021: Graduate Physiology II (IPMM 802): 1 contact hour. Sensory Systems Physiology.

Total contact hours: 114

*TEACHING EVALUATION: 1=Poor, 3= Average, 5= Excellent*

#### PA/PT INTERMEDIATE / GRADUATE PHYSIOLOGY (CIP 606/608)

Year	Number of students	Criteria	Score
2014	89	Organized presentation of course materials	4.09
		Keeping student attention	3.15
		Well Prepared for teaching	4.08
		Visual aids to complement verbal teaching	3.81
		Overall performance	3.72
2015	85	Organized presentation of course materials	4.28
		Keeping student attention	3.84
		Well Prepared for teaching	4.28
		Visual aids to complement verbal teaching	4.26
		Overall performance	4.18
2016	122	Organized presentation of course materials	4.54
		Keeping student attention	4.06
		Well Prepared for teaching	4.63
		Visual aids to complement verbal teaching	4.31
		Overall performance	4.43

2017	124	Organized presentation of course materials	4.55
		Keeping student attention	3.87
		Well Prepared for teaching	4.63
		Visual aids to complement verbal teaching	4.45
		Overall performance	4.28
2018	128	Organized presentation of course materials	4.21
		Keeping student attention	3.88
		Well Prepared for teaching	4.57
		Visual aids to complement verbal teaching	4.38
		Overall performance	4.21
2019	133	Organized presentation of course materials	4.45
		Keeping student attention	3.97
		Well Prepared for teaching	4.72
		Visual aids to complement verbal teaching	4.47
		Overall performance	4.37
2020	123	Organized presentation of course materials	4.67
		Keeping student attention	4.57
		Well Prepared for teaching	4.78
		Visual aids to complement verbal teaching	4.75
		Overall performance	4.74
2021	124	Organized presentation of course materials	4.39
		Keeping student attention	4.35
		Well Prepared for teaching	4.68
		Visual aids to complement verbal teaching	4.37
		Overall performance	4.41
<u>Average of 8 years: 4.29. Average of last three years: 4.51</u>			

#### CARDIOPULMONARY FUNCTION IN HEALTH AND DISEASE (CIP/IPMM 916)

Year	Students	Criteria	Score
2017	5	Well Prepared for teaching	5.0
		Enthusiasm for teaching	5.0
		Communication skill and subject materials	5.0
		Overall performance	5.0
2018	5	Organization and teaching preparation	4.4
		Interest and enthusiasm	4.6
		Course material and subject information	4.6
		Overall performance	4.4
2019	5	Organization and teaching preparation	4.5
First part Evaluation		Interest and enthusiasm	5.0

		Course material and subject information	4.5
		Overall performance	4.8
Second part Evaluation		Organization and teaching preparation	5.0
		Interest and enthusiasm	5.0
		Course material and subject information	5.0
		Overall performance	5.0
2020	7	Organized presentation of course materials	4.86
		Keeping student attention	4.86
		Well Prepared for teaching	4.86
		Visual aids to complement verbal teaching	4.86
		Overall performance	4.86
<hr/>			
Average of 4 years: 4.81; Average of last 3 years: 4.76			

**B. DIRECTOR DEPARTMENT SEMINAR**

2016-2018: Director of Department Seminar course, Cellular and Integrative Physiology (CIP), UNMC.

**C. CHAIR JOURNAL CLUB OF CIP GRADUATE STUDENTS**

2016-2018: 1 contact hour/week journal club with all CIP graduate students. Guiding students for department seminar and organizing graduate student seminar in the department.

**D. MENTOR OF TRAINEES/FELLOWS****1. Primary Mentor****UNDERGRADUATE STUDENT**

Year	Name	Degree/Research	Institution
2012	Lawrence A. Murphy	B.S./Summer Research	Dept. of Physiology & Biophysics, University of Louisville, KY
2013	Pranay Velachery	Junior /Summer Research	Dept. of Cellular and Integrative Physiology, UNMC, NE
2014	Vikash Mudgapalli	Sophomore/Summer Research	Dept. of Cellular and Integrative Physiology, UNMC, NE
2014	Santosh Ramini	Sophomore/Summer Research	Dept. of Cellular and Integrative Physiology, UNMC, NE
2017	Patrick Martha	B.S./Summer Research	Dept. of Cellular and Integrative Physiology, UNMC, NE
2018	Keerthi Shaik	B.S./Summer Research	Dept. of Cellular and Integrative Physiology, UNMC, NE

## M.S. STUDENT

Year	Name	Thesis title	Institution
2011-12	Camille Brunson	The role of MMP9 in diabetic cardiomyopathy	Dept. of Physiology & Biophysics, University of Louisville, KY
2011-12	Leiberh Noel Diaz	The role of Matrix Metalloproteinase-9 on stem cell survival and differentiation in diabetic microenvironment	Dept. of Physiology & Biophysics, University of Louisville, KY
2011-12	Jessica Harris	Exercise mitigated autophagy in the diabetic heart	Dept. of Physiology & Biophysics, University of Louisville, KY

## Ph.D. STUDENT

Year	Name	Thesis title	Institution
2018-20	Sumit Kar	Cardioprotective roles of hydrogen sulfide donors in diabetic cardiomyopathy	Dept. of Cellular and Integrative Physiology, UNMC, NE
2017-	Tyler N Kambis	TBD	Dept. of Cellular and Integrative Physiology, UNMC, NE
2022-	Flobater I Gawargi	TBD	Dept. of Cellular and Integrative Physiology, UNMC, NE

## Ph.D. / M.D. Ph.D. ROTATING STUDENT

Year	Name	Degree	Institution
2013	Shamma S. Rahman	Ph.D.	UNMC
2014	Denise A. Cobb	Ph.D.	UNMC
2015	Paul Sarjo	Ph.D.	UNMC
2015	Anyum Ma	Ph.D.	UNMC
2016	Ahmad M. Wafi	Ph.D.	UNMC
2016	Stephan J. Haller	M.D./Ph.D.	UNMC
2017	Salma Sharmin	Ph.D.	UNMC
2017	Kambis N. Tyler	Ph.D.	UNMC
2017	Hannah L. Harris	Ph.D.	UNMC
2018	Sydney E. Greer	Ph.D.	UNMC
2018	Kristina Pravoverov	M.D./Ph.D.	UNMC
2018	Brady Betten	Ph.D.	UNMC
2018	Sumit Kar	Ph.D.	UNMC
2021	Deepan Chatterjee	Ph.D.	UNMC
2021	Brigham J. Killips	Ph.D.	UNMC
2021	Flobater I Gawargi	Ph.D.	UNMC

## POSTDOCTORAL FELLOW

Year	Name	Publications
2011- 14	Vishalakshi Chavali	Published 4 research (two 1 <sup>st</sup> , two co-author) and 2 review articles (one 1 <sup>st</sup> and one co-author), and 2 book chapters (one 1 <sup>st</sup> and one co-author). She has also published 7 conference-based abstracts. She has poster/Oral presentations at national and local conferences/meetings.
2013- 18	Shyam S Nandi	Published 7 research (Four 1 <sup>st</sup> and three co-author), 3 review articles (one 1 <sup>st</sup> and two co-author), 2 book chapter (one 1 <sup>st</sup> and one co-author), and 13 conference-based abstracts
2014-15	Varun Keshewani	Published 3 first-author research papers
2015-16	Priyanka Prathipati	Published 1 first-author research and 1 first-author review articles, and 1 conference-based abstract.
2015-16	Bryan T Hackfort	Published 1 co-author research article and 1 first –author review article
2017-18	Roopali Yadav	Published 1 co-author paper
2017-20	Santosh Yadav	Published 8 research papers (four 1 <sup>st</sup> author and four co-author) and 1 conference-based abstract

## 2. Primary Trainee's honors and awards

### PREDOCTORAL FELLOWS

- Sumit Kar, Ph.D. completed in December 2020
  - 2018: Poster Presentation Award, Nebraska Physiological Society Meeting, Omaha, NE
  - 2019: 1<sup>st</sup> Prize in Poster Presentation Award, Midlands Society of Physiological Sciences meeting, Omaha, Omaha, NE
  - 2019: 1<sup>st</sup> Place Winner at the NATIONAL LEVEL competition for “The Science Coalition’s Fund It Forward Student Video Challenge”. The Fund It Forward Student Video Challenge is a contest for undergraduate and graduate students currently enrolled in The Science Coalition (TSC) member institutions. Participants were asked to create a video to tell the story of why science matters and remind members of Congress that now is the time to invest in research for the future of the USA. The winner was decided by the votes of over 2,000 participants from across the country.
  - Jointly received the 1<sup>st</sup> place in Graduate category by TSC.  
<https://www.sciencecoalition.org/2019/12/11/the-science-coalition-announces-winners-of-2019-fund-it-forward-student-video-challenge/>  
 Link to the video: <https://youtu.be/YUQTSIPw6b0>
  - 2020: Outstanding Graduate Oral Presentation, Midlands Society of Physiological Society and Iowa Physiological Society meeting. His abstract was one of the four abstracts were selected for the “oral presentation”. Among the four-oral presentation, he was winner of the “Beckman Coulter Life Sciences Outstanding Graduate Oral Presentation”.
  - Other recognitions: UNMC today:  
<https://www.unmc.edu/news.cfm?match=24839>  
<https://www.unmc.edu/news.cfm?match=26638>
  - 2020: Received UNMC Program of Excellent Assistantship
  - Completed Ph.D. in December 2020 and immediately joined leadership position in a company. Currently, Associate Director, Translational Medicine at Revolution Medicines, San Francisco.

- Tyler N. Kambis
  - 2019: 1<sup>st</sup> Place Winner at the National Level competition for “The Science Coalition’s Fund It Forward Student Video Challenge”. He and Sumit Kar jointly won this for the Graduate Student category
  - 2019: Received UNMC Program of Excellent Assistantship
  - 2019-present: Graduate student representative for UNMC’s chapter of the Student Alliance for Global Health
  - 2019-present: Executive Board Member of Coalition Rx focused on providing policy briefs and biomedical perspective
  - 2020-present: Member of UNMC Legislative Team for selection of priority state legislation.
  - 2020-present: Member of American Physiological Society Cardiovascular Section Trainee Committee
  - 2020-2021: PRESIDENT, UNMC student Delegate. Head student for State policy advocacy
  - 2020: Placed second in Research! America 2020 Flash Talks Competition at the NATIONAL LEVEL COMPETITION. Tyler was one of the 10 people ranging from Graduate Students to Young Investigators selected by the Research! America 2020 to compete in the Flash Talks Competition for 3 minutes. His talk was on “Using the wrong fuel for the right job” where he draws a comparison between our world’s energy crises with the diabetic heart’s energy crisis. The Featured speakers in this Forum included high profile people including CNN’s Dr. Sanjay Gupta, global health issue adviser Dr. Anthony Fauci, and NIH Director Dr. Francis Collins.  
<https://www.researchamerica.org/news-and-events/events/national-health-research-forum>  
<https://www.unmc.edu/news.cfm?match=26235>
  - Awarded a Research! America CIVIC ENGAGEMENT MICROGRANT to facilitate dialogue between public officials, community leaders, and the public around issues of common scientific concerns.
  - 2021: Awarded a Ruth L Kirschstein Predoctoral Individual National Research Service Grant, the National Institutes of Health grant F31 in July.
  - 2021: Recognized as a Shepherd University FINEST UNDER 40 ALUMNI:  
[https://www.shepherd.edu/suaa/alumnihighlights?fbclid=IwAR2ZYCR7R\\_8pGIFdVfuSZDAvLZOAd\\_oxcFrqfECIS1\\_0xGelfpfWcVtro](https://www.shepherd.edu/suaa/alumnihighlights?fbclid=IwAR2ZYCR7R_8pGIFdVfuSZDAvLZOAd_oxcFrqfECIS1_0xGelfpfWcVtro)
  - 2021: 1<sup>st</sup> Place in the Oral Presentations of Graduate Category in the 2021 Midlands Society of Physiological Sciences Scientific session.
  - 2021: Recognized UNMC “GRADUATE STUDENT OF DISTINCTION” based on appointment to a standing committee of a national society- American Physiology Society, and national fellowship, NIH F31.

## POSTDOCTORAL FELLOWS

- Vishalakshi Chavali, Ph.D.
  - 2013: Finalist for the James Willerson Clinical Award Lecture, Cardiovascular Forum for Promoting Centers of Excellence and Young Investigators Conference, KY
- Shyam Sundar Nandi, Ph.D.
  - 2015: Best Poster Award in Translational Medicine, Annual Meeting of the International Academy of Cardiovascular Sciences: North American Section, NE
  - 2017: UNMC Postdoctoral Excellence in Research Award  
[https://www.unmc.edu/news.cfm?match=21046&pk\\_campaign=email&pk\\_kwd=Dr\\_Nandi\\_receives\\_postdoctoral\\_research\\_award](https://www.unmc.edu/news.cfm?match=21046&pk_campaign=email&pk_kwd=Dr_Nandi_receives_postdoctoral_research_award)
  - 2017: “Research recognition Award” from American Physiological Society Cardiovascular Section (APS, CV section), based on Experimental Biology meeting abstract and scientific achievements.
  - 2018: Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award from APS, CV Section, based on Experimental Biology meeting abstract and scientific achievements.
- Priyanka Prathipati, Ph.D.
  - 2015: Oral Presentation Award, Nebraska Physiological Society meeting, Omaha, NE
- Bryan T. Hackfort, Ph.D.
  - 2015: Best Poster Presentation Award, Nebraska Physiological Society meeting, Omaha, NE
- Santosh K. Yadav, Ph.D.
  - 2018: Poster Presentation Award, Nebraska Physiological Society Meeting, Omaha, NE

- 2019: 1<sup>st</sup> Prize in Poster Presentation Award, Midlands Society of Physiological Sciences meeting, Omaha, NE
- 2019-present: Elected, Vice President of UNMC Postdoctoral Association
- 2020-21: Elected, Council member of the Midlands Society of Physiological Sciences.

#### SUMMER STUDENT

- Patrick Marta, High School Summer Trainee
  - 2017: Poster presentation Award, Nebraska Physiological Society meeting, Omaha, NE

#### STAFF

- Hamid R. Shahshahan, Research Technologist
  - 2017 UNMC Chancellor's Council "Silver U Award".
  - 2020 UNMC Chancellor's Council "Gold U Award".

[https://www.unmc.edu/news.cfm?match=25787&pk\\_campaign=email&pk\\_kwd=Hamid\\_Shahshahan\\_is\\_Gold\\_U\\_recipient\\_for\\_June](https://www.unmc.edu/news.cfm?match=25787&pk_campaign=email&pk_kwd=Hamid_Shahshahan_is_Gold_U_recipient_for_June)

### 3. Primary Trainee's grant

#### *I. Targeting metabolic remodeling and mitochondrial dysfunction in the diabetic heart*

National Institutes of Health F31 Fellowship

January 2021- January 2023

Direct cost: Year/Total: 2/\$67,576

PI: Tyler N. Kambis

#### *II. Targeting ferroptotic death in diabetic cardiomyopathy with H<sub>2</sub>S*

UNMC Program of Excellent Assistantship for Graduate Students

July 1, 2020-June 30, 2022 (relinquished from December 2020 due to completion of PhD)

Direct cost: Year/Total: 2/\$51,000

PI: Sumit Kar

#### *III. Ameliorating mitochondrial damage by miR-133a in the T1DM heart*

UNMC Program of Excellent Assistantship for Graduate Students

July 1, 2019-June 30, 2021 (relinquished from January 2021 due to F31 fellowship)

Direct cost: Year/Total: 2/\$51,000

PI: Tyler N Kambis

#### *IV. Mitochondrial abnormalities and its regulation by miRNA in diabetic hearts*

American heart Association Postdoctoral Award

July 1, 2016-June 30, 2018

Direct cost: Year/Total: 2/\$82,000

PI: Shyam Sundar Nandi

### E. CO-MENTOR / MENTOR OF FACULTIES

Year	Name	Project	Institution
2019-present	Song-Young Park	Mentor. Discussing individual development plan is required for researchers at the undergraduate institutions	Assistant Professor, School of Health and Kinesiology, UNO.
2020-present	Arpita Chatterjee	Co-Mentor. Radiation-induced cardiotoxicity in diabetes.	Instructor, Biochemistry and Molecular Biology, UNMC
2021-present	Andrew Hamann	Co-Mentor. miRNA in cardiomyopathy. Received AHA, Career Development Grant in 2021	Research Assistant Professor, College of Engineering, UNL
2021-present	Shuai Li	Co-Mentor. Autophagy in peripheral artery disease.	Instructor, Surgery, UNMC

Received AHA, Career  
Development Grant in 2021

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## CO-MENTORED GRANTS:

- I. *Autophagy in peripheral artery disease: clinical relation and treatment potential*  
American Heart Association Career Development Award  
July 1, 2021-June 30, 2024  
Direct Costs: Year/Total: 3/ \$231,000  
PI: Shui Li  
Instructor, University of Nebraska Medical Center
- II. *Engineering cells to produce miRNA-loaded and cardiomyocyte-targeting exosomes*  
American Heart Association Career Development Award  
December 1, 2021- November 30, 2024  
Direct Costs: Year/Total: 3/ \$300,000  
PI: Andrew Hamann  
Research Assistant Professor and Biomedical Engineer, University of Nebraska-Lincoln

## F. THESIS/DISSERTATION COMMITTEE

Year	Name	Thesis degree	Institution
2011	Jonathan Vacek	<i>summa cum laude</i>	Physiology and Biophysics, University of Louisville
2011	Nicole S. Stivers	M.S	Cellular and Integrative Physiology, UNMC
2013-2015	Derek Passer Mentors: Irving H. Zucker (UNMC) and Ibrahim J. Domian (Harvard University)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation:</u> <i>Atypical Protein Kinase C dependent polarized Cell Division is required for Myocardial Trabeculation</i>
2014-2016	Yuan Ying (Mentor: Babu Padanilam)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation:</u> <i>The role of P53 signaling in unilateral ureteral obstruction induced Fibrogenesis</i>
2016-2020	Anyum Ma (Mentor: Irving H. Zucker)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation:</u> <i>The Role of central ACE2 and Nrf2 in Sympatho-excitation: Responses to Central Ang II</i>
2016-2020	Ahmed Wafi (Mentor: Irving H. Zucker)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation:</u> <i>Exercise and Nrf2 in Chronic heart Failure</i>
2017-2019	Ke Liao (Mentor: Shilpa Buch)	Ph.D.	Pharmacology and Experimental Neuroscience, UNMC <u>Dissertation:</u> <i>Role of Circular-RNA in Morphine-mediated Microglial Activation: Implication for Cognitive Impairment and Memory Loss</i>



2018-	Cassandra M. Moshfegh (Mentor: Adam case)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation: TBD</u>
2019-20	Steven Scott (Mentor: Song-Young Park)	M.S.	School of Health and Kinesiology, University of Nebraska-Omaha, NE
2020-21	Hadassha Tofilau (Mentor: Surabhi Chandra)	M.S.	Department of Biology, University of Nebraska-Kearney, NE
2020-21	TeSean Wooden (Mentor: Song-Young Park)	M.S.	School of Health and Kinesiology, University of Nebraska-Omaha, NE
2020-	Weilun Ai (Mentor: Saraswathi Viswanathan)	Ph.D.	Internal Medicine, UNMC <u>Dissertation: TBD</u>
2020-	Corrine F. Monaco (Mentor: John Davis)	Ph.D.	OB/GYN, UNMC <u>Dissertation: TBD</u>
2020-	Mane Polite R (Mentor: Rebekah Gundry)	Ph.D.	Cellular and Integrative Physiology, UNMC <u>Dissertation: TBD</u>

#### G. COMPREHENSIVE EXAMINATION COMMITTEE

Year	Student	Degree	Department
2015	Yuan Ying	Ph.D.	Cellular and Integrative Physiology, UNMC
2017	Anyum May	Ph.D.	Cellular and Integrative Physiology, UNMC
2018	Ke Liao	Ph.D.	Pharmacol & Experimental Neuroscience, UNMC
2019	Zhiqui Xia	Ph.D.	Cellular and Integrative Physiology, UNMC
2020	Sumit Kar	Ph.D.	Cellular and Integrative Physiology, UNMC
2020	Cassandra M. Moshfegh	Ph.D.	Cellular and Integrative Physiology, UNMC
2020	Tyler N. Kambis	Ph.D.	Cellular and Integrative Physiology, UNMC
2021	Upendra Chalise	Ph.D.	Cellular and Integrative Physiology, UNMC
2022	Joshua McDowell	Ph.D.	Biochemistry and Molecular Biology, UNMC
2022	Weilun Ai	Ph.D.	Internal Medicine, UNMC
2022	Molly N. Schieber	M.D./ Ph.D.	Vascular Surgery, UNMC
2022	Kajal Kamara	Ph.D.	Cellular and Integrative Physiology, UNMC

#### CHAIR OF THE COMPREHENSIVE EXAMINATION COMMITTEE

Year	Student	Degree	Department
2017	Ahmed Wafi	Ph.D.	Department of Cellular and Integrative Physiology, UNMC
2020	Sydney E. Greer	Ph.D.	Department of Genetics, Cell Biology, & Anatomy, UNMC
2022	Corrine F. Monaco	Ph.D.	Department of Obstetrics/Gynecology, UNMC

## H. ORAL QUALIFYING EXAMINATION COMMITTEE

Year	Student	Degree	Department	Title
2015	Derek Passer	Ph.D.	Cellular and Integrative Physiology, UNMC	Atypical Protein Kinase C dependent polarized Cell Division is required for Myocardial Trabeculation
2016	Yuan Ying	Ph.D.	Cellular and Integrative Physiology, UNMC	The role of P53 signaling in unilateral ureteral obstruction-induced fibrogenesis
2019	Ke Liao	Ph.D.	Pharmacol. & Expt. Neuroscience, UNMC	Role of Circular-RNA in Morphine-mediated Microglial Activation: Implication for Cognitive Impairment
2020	Anyum Ma	Ph.D.	Cellular and Integrative Physiology, UNMC	The Role of central ACE2 and Nrf2 in Sympatho-excitation: Responses to Central Ang II
2020	Ahmed Wafi	Ph.D.	Cellular and Integrative Physiology, UNMC	Exercise and Nrf2 in Chronic heart Failure

## I. EXAMINER OF INTERNATIONAL THESIS

2020: Ph.D. student, Department of Biophysics, All India Institutes of Medical Sciences, New Delhi, INDIA

## V. SERVICE

## A. PROFESSIONAL AFFILIATIONS

Year	Society	Selected Roles
2013-18	Nebraska Physiological Society	Council Member
2017-	American Heart Association	Fellow of American Heart Association Council on Hypertension and Basic Cardiovascular Sciences
2014-2019	American Physiological Society Midlands Society of Physiological Sciences	Fellow, Cardiovascular Section Council Member
2020	Midlands Society of Physiological Sciences	President-Elect
<b>Membership</b>		
2009-13	American Heart Association	Council on Basic Cardiovascular Sciences
2010-	American Physiological Society	Cardiovascular Section
2014-	American Heart Association	Council on Hypertension
2016-	American Heart Association	Council on Basic Cardiovascular Sciences
2017	American Society for Pharmacology and Experimental Therapeutics	
2017	American Diabetes Association	

## B. GRANT REVIEWER

**INTERNATIONAL**

Year	Country	Funding agency	Details
2014	United Kingdom	Diabetes UK Research Grant	Reviewed one grant proposal from the University of Oxford
2017	India	Institutes Challenge Grant	Reviewed one grant proposal from the Indian Institute of Technology, Kharagpur
2019 (February)	Saudi Arabia	Ministry of Education's Research Development Office (RDO)'s International Collaboration Grant (ICG) Program. ICG's Research Capability grant (RCG) provides funding in support of basic research within the scope of designated priority research fields for the Kingdom's R & D ecosystem.	American Association for the Advancement of Science (AAAS) worked with RDO to design peer review criteria.  Reviewed 5 proposals related to Biogenomics-Inflammation.
2019 (March)	Saudi Arabia	Ministry of Education's RDO. ICG's Research Capability grant.	American Association for the Advancement of Science (AAAS) worked with RDO to design peer review criteria. Reviewed 7 proposals related to Biogenomics- cardiovascular disease
2020 (December)	Luxembourg, Europe	INTER EUROSTARS	The Luxemburg National Research Fund for multiannual research program Reviewed one grant proposal from the Luxemburg Institute of Health

**NATIONAL**

## NATIONAL INSTITUTES OF HEALTH (NIH)

Year	Study section name	Role
2013 (July)	Diabetes Complications Consortium, NIDDK Study Section	Mail Reviewer
2016 (Feb)	Cardiac Contractility and Heart Failure study section	Ad-hoc Member
2017 (March)	Special Emphasis Panel ZRG1 EMNR-S (02)	Ad-hoc Member
2017 (August)	Special Emphasis Panel CVRS-02	Ad-hoc Member
2017 (Oct)	NHBLI Program Project	Ad-hoc Member
2017 (Dec)	Special Emphasis Panel ZRG1 CVRS-L (80) R15 AREA	Ad-hoc Member
2018 (March)	Special Emphasis Panel ZRG1 CVRS-L (80) R15 AREA	Ad-hoc Member
2018 (April)	Special Emphasis Panel CVRS-02	Ad-hoc Member
2018 (June)	Cardiovascular SBIR/STTR ZRG1-CVRS-C-10	Ad-hoc Member
2018 (July)	Special Emphasis Panel ZRG1 CVRS S (80) R15	Ad-hoc Member
2018 (Oct)	Special Emphasis Panel ZRG1 CVRS C (02)	Ad-hoc Member
2018 (Nov)	Cardiovascular SBIR/STTR ZRG1-CVRS-C-10	Ad-hoc Member
2018 (Dec)	DP5 ZRG1 PSE-H 70	Ad-hoc Member

2019 (March)	Special Emphasis Panel ZRG1 CVRS-K (80) R15	Ad-hoc Member
2019 (Nov)	Cardiovascular SBIR/STTR ZRG1-CVRS-C-10	Ad-hoc Member
2020 (June)	MIM study section	Ad-hoc Member
2021 (March)	NRSA Fellowship F10A-K	Ad-hoc Member
2021 (July)	Fellowship F10A-K	Ad-hoc Member
2021 (Nov)	Cardiovascular Science SBIR ZRG VH-N (11)	Ad-hoc Member
2022 (March)	Physiology and pathobiology of Cardiovascular and Respiratory Systems Fellowship ZRG1 F10A-K 20	Ad-hoc Member

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**DEPARTMENT OF VETERANS AFFAIRS (VA)**


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Year	Study section name	Role
2019 (May)	ZRD1 CARA-R 01 1. Cardiovascular Studies	Ad-hoc Member

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**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)**


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Year	Study section name	Role
2019 (January)	BION-M2	Ad-hoc Member
2019 (May)	Musculoskeletal-Cardiovascular ROSBio	Ad-hoc Member
2020 (May)	ROSBio 2020 Flight and Ground	Ad-hoc Member
2021 (June)	ROSES Program Element E.12	Ad-hoc Member

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**AMERICAN HEART ASSOCIATION**


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Year	Study section name	Role
2011	Basic Cell Genetics and Epigenetics	Member
2012	Basic Cell Genetics and Epigenetics	Member
2014 (Sept)	Basic Cell Genetics and Epigenetics	Member
2014 (Oct)	Clinical, Behavioral Science	Ad-hoc Member
2015 (Oct)	Innovative Research Grant, Basic Sciences 1	Ad-hoc Member
2016 (Oct)	Basic Cell Genetics and Epigenetics	Member

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**UNIVERSITY**


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Year	University name	Study section name and application
2016	University of Nebraska Medical Center	Genetics, Graduate Fellowship applications
2017	Cleveland Clinic	Lerner College of Medicine, Ohio Cancer Research grant application
2017	University of Nebraska Medical Center	Cell Biology-II, Pre-doctoral fellowship application
2017	University of Florida	College of Pharmacy, Research grant application
2017	Indiana University	Indiana Alzheimer Disease Center, Indiana University of Medicine grant application
2018	University of Nebraska Medical Center	Drug Development, Pre-doctoral fellowship application

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**C. EDITORIAL BOARD OF JOURNAL**


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Year	Journal	Activity
2011-21	<i>International Journal of Physiology, Pathophysiology and Pharmacology</i>	Associate Editor
2015-20	<i>American Journal of Physiology- Heart and Circulatory Physiology</i>	Editorial Board
2017	<i>Frontiers in Cardiovascular Medicine</i> Special issue: The Non-coding Genome and Cardiovascular Disease	Guest Editor

2018	<i>Oxidative medicine and Cellular Longevity</i> Special issue: mTOR Signaling in Cardiometabolic Disease, Cancer, and Aging	Guest Editor
2018-	<i>Frontiers in Integrative Physiology</i>	Associate Editor
2021	<i>Frontiers in Cell and Developmental Biology</i> Section: Cell Death and Survival	Guest Editor
2021-	<i>American Journal of Physiology- Heart and Circulatory Physiology</i>	Consulting Editor

#### D. REVIEWER OF JOURNAL

	Year	Journal	Activity
1	2013-	<i>AJP- Heart and Circulatory Physiology</i>	Reviewer
2	2014-	<i>AJP- Regulatory, Integrative and Comparative Physiology</i>	Reviewer
3	2014-	<i>BBA- Molecular Basic of Disease</i>	Reviewer
4	2014-	<i>BioMed Research International</i>	Reviewer
5	2014-	<i>Canadian Journal of Physiology &amp; Pharmacology</i>	Reviewer
6	2014-	<i>Cardiovascular Diabetology</i>	Reviewer
7	2014-	<i>Cardiovascular Research</i>	Reviewer
8	2014-	<i>Cell Biochemistry and Biophysics</i>	Reviewer
9	2014-	<i>Cell Death and Disease</i>	Reviewer
10	2014-	<i>Circulation</i>	Reviewer
11	2014-	<i>Comparative Biochemistry and Physiology</i>	Reviewer
12	2014-	<i>Current Diabetes Review</i>	Reviewer
13	2014-	<i>Diabetes Research and Clinical Practice</i>	Reviewer
14	2014-	<i>Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy</i>	Reviewer
15	2014-	<i>European Journal of Heart Failure</i>	Reviewer
16	2014-	<i>Food and Chemical Toxicity</i>	Reviewer
17	2014-	<i>Genome</i>	Reviewer
18	2014-	<i>International Journal of Biology</i>	Reviewer
19	2014-	<i>International Journal of Molecular Medicine</i>	Reviewer
20	2014-	<i>Journal of Cellular and Molecular Medicine</i>	Reviewer
21	2014-	<i>Journal of Cardiovascular Translational Research</i>	Reviewer
22	2014-	<i>Journal of Molecular and Cellular Cardiology</i>	Reviewer
23	2014-	<i>Journal of Stem Cell Research and Therapy</i>	Reviewer
24	2014-	<i>Life Sciences</i>	Reviewer
25	2014-	<i>Molecular and Cellular Biochemistry</i>	Reviewer
26	2014-	<i>Molecular Biology Reports</i>	Reviewer
27	2014-	<i>Neurochemistry International</i>	Reviewer
28	2014-	<i>Oxidative Medicine and Cellular Longevity</i>	Reviewer
29	2014-	<i>PLOS One</i>	Reviewer
30	2014-	<i>Recent Patents on Biotechnology</i>	Reviewer
31	2014-	<i>Reproductive Sciences</i>	Reviewer
32	2016-	<i>Scientific reports</i>	Reviewer
33	2020-	<i>Theranostics</i>	Reviewer
34	2014-	<i>Toxicological Sciences</i>	Reviewer
35	2014-	<i>Tissue Engineering</i>	Reviewer

#### E. BOOK REVIEWER

Year	Publisher	Book title	Editor(s)
2018	Elsevier	MicroRNA in Regenerative Medicine	Chandan K. Sen
2021	Elsevier	Cellular, Molecular and Environmental Contribution in Cardiac Remodeling: from preclinical to clinical perspective	Rahul Mallick and Asim K. Duttaroy

## F. SCIENTIFIC JUDGE

Year	Meeting	Role
2009-12	Research Louisville Forum, University of Louisville, Louisville, KY	Poster Judge
2011	Third Annual Graduate Research Symposium at University of Louisville, Louisville, KY	Poster Judge
2014-18	Nebraska Physiological Society, Omaha, NE	Poster Judge
2015-17,19	Midwest Student Biomedical Research Forum, Omaha, NE	Poster Judge
2015	Annual meeting of the international academy of cardiovascular sciences (IACS): North American section, September 10-12, Omaha, NE	Abstract Judge for four award categories
2016	American Physician Scientists Association Midwest Regional Meeting	Poster Judge
2018	Nebraska Physiological Society, Omaha, NE	Abstract Judge for oral presentation
2018	Annual Research Symposium, Department of Biochemistry and Molecular Biology, UNMC, Omaha, NE	Poster Judge
2020-2021	GCBA/MGCB/BISB Student Research Forum, UNMC, Omaha, NE	Poster Judge
2020	Midlands Society of Physiological Sciences	Presentation Judge
2020	College of Medicine Retreat, UNMC, Omaha, NE	Poster Judge
2020-2021	Nebraska Junior Academy Sciences Physiology Award, Research program, Omaha, NE	Presentation Judge

## G. COMMITTEE MEMBER

## NATIONAL

Year	Committee	Member
2015-18	American Physiological Society	Member, Fellowship Committee of Cardiovascular Section
2019-	American Physiological Society	Member, Awards Committee of Cardiovascular Section

## UNIVERSITY

Year	Committee	Member
2014-	Mouse Genome Engineering Core Advisory Committee	Member
2015- 2021	Research and Development Committee	Member

## DEPARTMENT

Year	Committee	Member
2014-20	Alice Cumming Award Committee	Member
2014-15	Faculty Recruitment Committee, Department of Physiology	Member
2014- June 2020	Review Committee, A Ross McIntyre Cardio-Renal Seminar	Member
2020-March 2021	Faculty Recruitment Committee, Department of Physiology	Member
2020-	IPMM Graduate Program Committee	Member
2020- 21	MGCB Graduate Program Committee	Member

H. COMMUNITY ACTIVITY

2005-: Colleague promotion and tenure letters: >10 evaluation recommendation letters given

2002-: Other letters of support (e.g., grant or permanent resident applications): >20 letters given

2010: 4 weeks volunteer at the University of Louisville Hospital, Louisville, KY

2010: Donated blood at the American Red Cross Blood Camp, Louisville, KY

2018: Donated blood at the American Red Cross Blood Camp, Omaha, NE