

# CURRICULUM VITAE

IRINA STEPANOV

## IDENTIFYING INFORMATION

### Academic Rank

Distinguished McKnight University Professor  
Mayo Professor in Public Health  
Division of Environmental Health Sciences, School of Public Health, University of Minnesota  
Department of Otolaryngology, Head and Neck Surgery, Medical School, University of Minnesota

### Education

Degree	Institution	Date Degree Granted
B.S.	Moldova State University Chemistry	1997
Ph.D.	Moldova State University Chemistry/Industrial and Ecological Chemistry	2002

### Positions/Employment

#### Current

University of Minnesota, Twin Cities Professor, School of Public Health	2020 – present
Professor, Medical School	2020 – present
Associate Professor, School of Public Health	2016 – 2020
Assistant Professor, School of Public Health	2011 – 2016

#### Previous

University of Minnesota, Twin Cities Masonic Cancer Center Research Associate	2005 – 2011
Postdoctoral Associate	2003 – 2005
Moldova State University, Chisinau, Moldova Senior Lecturer	2000 – 2003
Research Fellow	1999 – 2003
Junior Scientist	1998 – 1999
State University of Medicine, Chisinau, Moldova Laboratory Assistant	1990 – 1991

### **Other professional roles and appointments**

Standing member, NIH Environmental Determinants of Disease Study Section	2023 – present
Director, Institute for Global Cancer Prevention Research	2020 – present
Faculty, MS and PhD Programs in Pharmacology	2020 – present
Lead, WHO TobLabNet Member Laboratory	2019 – present
WHO Tobacco Laboratory Network (TobLabNet) is a global tobacco testing laboratory network dedicated to advancing tobacco control	
Standing member, NIH/NCI Cancer Etiology Study Section	2019 – 2023
Co-Chair, Global Research Network, Society for Research on Nicotine and Tobacco	2019 – 2020
Consultant (SGE), FDA Center for Tobacco Products	2013 – present
Member, Masonic Cancer Center, University of Minnesota	2011 – present

### **Current Membership in Professional Organizations**

Society for Research on Nicotine and Tobacco	2011 – present
American Chemical Society	2006 – present
American Association for Cancer Research	2006 – present

## **HONORS AND AWARDS FOR RESEARCH/CREATIVE WORK, TEACHING, PUBLIC ENGAGEMENT, AND SERVICE**

### ***University of Minnesota***

Distinguished McKnight University Professor (2022)  
Mayo Professor in Public Health, School of Public Health (2020)  
Delta Omega Honorary Society in Public Health, Pi Chapter (2013)  
Masonic Scholar, Minnesota Masonic Charities (2011)  
Transdisciplinary Tobacco Use Research Center Trainee, University of Minnesota (2005-2007)

### ***External Sources***

Fellow, Society for Research on Nicotine and Tobacco (2020)  
Early Career Reviewer Program at the Center for Scientific Review, NIH (2012)  
Research Travel Fellowship for Young Investigators, U.S. Civilian Research and Development Foundation and Moldovan Research and Development Association (2003)  
State Prize for Young Investigators in the Field of Science and Technology, the Government of Moldova (2002)  
Research Travel Award for Young Investigators, American Chemical Society-Central European Environmental Chemistry Program (2001)

## **RESEARCH, SCHOLARSHIP, AND CREATIVE WORK**

### **Grants and Contracts**

**External Sources (federal or state grants, foundation awards, etc.)**

#### ***Received at the University of Minnesota:***

##### Current

Multiple-Principal Investigator with financial responsibility  
PIs: Irina Stepanov, Rajesh Dikshit (Tata Memorial Hospital)

NIH/NIEHS R01ES033220  
Biomarker phenotypes of air pollution and cancer risk in India  
09/23/2021 – 06/30/2026

Multiple-Principal Investigator  
PIs: Michele Allen, Irina Stepanov  
NIH/NCI T32CA163184  
Cancer Related Health Disparities Training Program  
09/01/2021 – 08/31/2026

Multiple-Principal Investigator  
PIs: Michael Steinberg (contact PI, Rutgers), Irina Stepanov, Carolyn Heckman (Rutgers)  
NIH/NCI R01CA260831  
Evaluating Cigarette Relighting Behavior: Prevalence, Correlates, Toxicant Exposure, and  
Implications for Cessation  
04/01/2022 – 03/31/2026

Multiple-Principal Investigator  
PIs: Samir Khariwala, Irina Stepanov, Pankaj Chaturvedi (Tata Memorial Hospital)  
NIH/Fogarty R01TW010651  
Analytical Capacity Building for the Study of Tobacco Carcinogen Exposures in India  
07/01/2017 – 06/30/2023

Multiple-Principal Investigator with financial responsibility  
PIs: Irina Stepanov, Dorothy Hatsukami  
NIH/Tobacco Regulatory Science R01 DA-051005  
Impact of Sugars on Tobacco Product Toxicity and Abuse Liability  
06/01/2020 – 05/31/2024

Multiple-Principal Investigator with financial responsibility  
PIs: Irina Stepanov, Dorothy Hatsukami  
NIH/NIDA U01 DA-045523  
Biomarkers of Exposure and Effect in SREC Users  
09/15/2017 – 08/31/2023

Project Leader, Core B  
PI: Dorothy Hatsukami  
NIH/NCI P01 CA 217806  
Consortium on Methods Evaluating Tobacco (COMET): Filter Ventilation and Product Standards  
9/01/2017 – 8/31/2023

Core Co-Leader  
PI: Stephen Hecht  
NIH/NCI P01 CA-138338-01  
Mechanisms of Ethnic/Racial Differences in Lung Cancer Due to Cigarette Smoking  
07/01/22 – 06/30/2027

Co-Investigator  
PI: Andrew Harris (Hennepin Healthcare Research Institute)  
NIH/NCI R01 DA-046318 [Minneapolis Med Research Fdn (NIDA prime)]  
Animal Models to Inform FDA Tobacco Regulation: Assessing the Relative Abuse Liability of  
Different Classes of Tobacco Products  
09/1/2018 – 03/31/2023

Co-Investigator

PI: Eric Donny (Wake Forest University) and Dorothy Hatsukami (UMN)

NIDA prime U54 DA-031659

Evaluating New Nicotine Standards for Cigarettes

09/15/2017 – 02/28/2023

Co-Investigator

PI: Dorothy Hatsukami

Hennepin Healthcare Research Institute

The Effect of Smokeless Tobacco on Wound Healing and the Effect of General Tobacco Products on Wound Healing

10/15/2019 – 10/15/2024

Subcontract Principal Investigator

PI: Theodore Wagener (Ohio State University)

NIH/NCI R01 CA194158

Examination of First and Second Generation E-cigarettes

09/30/2016 – 08/31/2023

Co-Investigator

PI: Lisa Peterson

NIH/NIEHS U2C ES-026533

Minnesota HHEAR Targeted Analysis Laboratory

09/30/2015 – 08/31/2024

Completed

Principal Investigator

PI: Irina Stepanov

NIH/NCI R01 CA-180880

Normicotine in Smokeless Tobacco as a Precursor for Carcinogen Exposure

05/01/2014 – 04/30/2021

Principal Investigator

PI: Irina Stepanov

NIH/NCI R01 CA-179246

Constituent Yields and Biomarkers of Exposure for Tobacco Product Regulation

09/02/2013 – 08/31/2019

Co-Investigator

PIs: Dorothy Hatsukami (UMN) and Peter Shields (Ohio State University)

NIH/NCI U19 CA157345

Models for Tobacco Product Evaluation

Subaward: Animal models for assessing the relative abuse liability of tobacco products

09/20/2012 – 08/31/2017

Co-Investigator

PI: Dorothy Hatsukami

NIH/NCI HHSN261201200392P (contract)

Global Tobacco Control and Prevention Network

09/17/2012 – 09/16/2013

Co-Investigator

PI: Stephen Hecht

NIH/NCI R37 CA081301-14

Metabolism of Carcinogenic Tobacco-Specific Nitrosamines

09/01/2012 – 02/28/2014

Co-Investigator

PI: Dorothy Hatsukami

NIH/NCI HHSN261201100513P (contract)

Tobacco Research and Monitoring Network

09/01/2011 – 08/31/2012

Co-Project Leader

PI: Stephen Hecht

NIH/NCI P01 CA-138338-01

Mechanisms of Ethnic/Racial Differences in Lung Cancer Due to Cigarette Smoking

Project 5: Metabolism of NNK among African-Americans

04/01/2010 – 03/31/2016

Co-Investigator

PI: Dorothy Hatsukami

NIH/NCI R01CA141531 (NIH/NCI)

Novel Determinants and Measures of Smokeless Tobacco Use

Administrative supplement: Tobacco Constituent Analysis of Novel Tobacco Products

09/01/2010 - 08/31/2011

Co-Investigator

PI: Dorothy Hatsukami

NIH/NCI HHSN261201000544P (contract)

Tobacco Research and Monitoring Network

09/01/2010 – 08/31/2011

Co-Investigator

PIs: Dorothy Hatsukami and Jian-Min Yuan

NIH/NCI R01-CA122244-01

Randomized Trial of PEITC as a Modifier of NNK Metabolism in Smokers

04/01/2008 – 01/31/2014

## University Sources

Principal Investigator

PI: Irina Stepanov

UMN Internal Pilot grant awarded with funds from P01 CA-217806

COMET Pilot Award: Particle size and lung distribution of smoke from ventilated and non-ventilated cigarettes

Principal Investigator

PI: Irina Stepanov

Center for Global Health and Social Responsibility Faculty Mentor Award

In vitro studies of dual exposures to electronic cigarettes and tobacco cigarettes

Principal Investigator  
PI: Irina Stepanov  
Masonic Cancer Center Clinical and Translational Research Support  
Constituent Yields and Biomarkers of Exposure for Tobacco product Regulation

Principal Investigator  
PI: Irina Stepanov  
Masonic Cancer Center Research Support  
Smoking and Areca Nut Use in Head and Neck Carcinogenesis

Principal Investigator  
PI: Irina Stepanov  
Center for Global Health and Social Responsibility      Global Health Seed Grants  
Secondhand Smoke Exposure and Carcinogen Uptake in Elementary School Children in Nanning,  
Guangxi

Completed

Co-Investigator  
PI: Heather Nelson  
Masonic Cancer Center Internal Grants Program  
Functional Consequences of AHPRR Methylation in Smokers  
01/01/2015 – 12/31/2015

Co-Investigator  
PI: Timothy Church  
University of Minnesota Minnesota's Discovery, Research and Innovation Economy (MnDRIVE)  
Creation of a Parkinson Disease Registry and Initial Studies to Address Its Causes and Genetic  
Susceptibility  
07/01/2014 – 06/30/2016

Principal Investigator  
PI: Irina Stepanov  
Midwest Center for Occupational Health and Safety (MCOHS) Pilot Projects Research Training  
Program  
Inflammatory Signatures as Biomarkers for Disease Risk in Minnesota Iron Mining Workers  
05/01/2014 – 04/30/2015

Co-Investigator  
PI: Samir Khariwala  
Global Programs and Strategy Alliance Global Spotlight Major Award  
Tobacco Carcinogens and Oral Cancer in India  
04/01/2014 – 03/31/2016

Co-Investigator  
PIs: Michael Georgieff, Patricia McGovern  
Consortium on Law, Values and the Health Sciences, University of Minnesota  
Creating Evidence-based Public Health Guidance for Manganese Levels in Water  
07/01/2013 - 06/30/2014

Co-Investigator

PI: Deborah Ferrington  
Academic Health Center / Faculty Research Development Grant Program (FRD #11.22)  
Characterizing Mitochondrial DNA Damage in Age-Related Macular Degeneration  
01/01/2012 – 12/31/2013

## Publications

### *Refereed Journal Articles*

**NOTE:** In basic bio-medical research, both first and last authors are ranked as major contributors. The last author is usually the driving force, intellectually and often financially, behind the study.

1. Nikam, S. S., Gurjar, M., Singhavi, H., Patil, A., Singh, A., Villalta, P., Chaturvedi, P., Khariwala, S. S., Gota, V., **Stepanov, I.** (2021) Simultaneous analysis of urinary total 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol, N'-nitrosonornicotine, and cotinine by liquid chromatography-tandem mass-spectrometry. *Sci Rep*, 11(1), 20007, doi: 10.1038/s41598-021-99259-z.
2. Cigan, S. S., Murphy, S. E., Alexander, B. H., Stram, D. O., Hatsukami, D. K., Le Marchand, L., Park, S. L., **Stepanov, I.** (2021) Ethnic Differences of Urinary Cadmium in Cigarette Smokers from the Multiethnic Cohort Study. *Int J Environ Res Public Health*, 18, 2669, <https://doi.org/10.3390/ijerph18052669>
3. Heckman, C. J., Wackowski, O. A., Mukherjee, R., Hatsukami, D. K., **Stepanov, I.**, Delnevo, C. D., Steinberg, M. B., (2021) Cigarette Relighting: A Series of Pilot Studies Investigating a Common Yet Understudied Smoking Behavior. *Int J Environ Res Public Health*, 18, 6494, <https://doi.org/10.3390/ijerph18126494>
4. Tackett, A. P., Wallace, S. W., Smith, C. E., Turner, E., Fedele, D. A., **Stepanov, I.**, Lechner, W. V., Hale, J. J., Wagener, T. L. (2021) Harm Perceptions of Tobacco/Nicotine Products and Child Exposure: Differences between Non-Users, Cigarette-Exclusive, and Electronic Cigarette-Exclusive Users. *Tob Use Insights*, Vol 14: 1-8 doi.org/10.1177/1179173X21998362
5. Dator, R., Villalta, P. W., Thomson, N., Jensen, J., Hatsukami, D. K., **Stepanov, I.**, Warth, B., Balbo, S. (2020) Metabolomics Profiles of Smokers from Two Ethnic Groups with Differing Lung Cancer Risk. *Chem Res Toxicol*, 33, 2087–2098.
6. Adhikari, K., Pednekar, M. S., **Stepanov, I.**, Singh, A., Nikam, S., Singhavi, H., Gota, V., Ahluwalia, J. S., Chaturvedi, P., Gupta, P. C., Khariwala, S. S. (2020) Observed Circumvention of the Gutka Smokeless Tobacco Ban in Mumbai, India. *Tob Regul Sci*, 6(5), 331-335.
7. Carroll, D. M., **Stepanov, I.**, O'Connor, R., Luo, X., Cummings, K. M., Rees, V. W., Bickel, W. K., Berman, M. L., Ashley, D. L., Bansal-Travers, M., Shields, P. G., Hatsukami, D. K. (2020) Impact of Cigarette Filter Ventilation on U.S. Smokers' Perceptions and Biomarkers of Exposure and Potential Harm. *Cancer Epidemiol Biomarkers Prev*. DOI: 10.1158/1055-9965.EPI-20-0852
8. Sharma, A. K., DeBusk, W. T., **Stepanov, I.**, Gomez, A., and Khariwala, S. S. (2020) Oral microbiome profiling in smokers with and without head and neck cancer reveals variations between health and disease. *Cancer Prev Res (Phila)* 13, 463-474.

9. Peterson, L. A., Balbo, S., Fujioka, N., Hatsukami, D. K., Hecht, S. S., Murphy, S. E., **Stepanov, I.**, Tretyakova, N., Turesky, R. J., and Villalta, P. W. (2020) Applying tobacco, environmental and dietary-related biomarkers to understand cancer etiology and evaluate prevention strategies. *Cancer Epidemiol Biomarkers Prev.* cebp.1356.2019. doi: 10.1158/1055-9965.EPI-19-1356
10. Meier, E., Vandrey, R., Rubin, N., Pacek, L. R., Jensen, J. A., Donny, E. C., Hecht, S. S., Carmella, S. G., Murphy, S. E., Luo, X., **Stepanov, I.**, Ikuemonisan, J., Severson, H., Al'absi, M., and Hatsukami, D. K. (2020) Cigarette smokers versus co-users of cannabis and cigarettes: exposure to toxicants. *Nicotine Tob Res* 22, 1383-1389.
11. Meier, E., Lindgren, B. R., Anderson, A., Reisinger, S. A., Norton, K. J., Jensen, J., Strayer, L., Dick, L., Tang, M. K., Chen, M., Carmella, S. G., Hecht, S. S., Murphy, S. E., Yang, J., **Stepanov, I.**, O'Connor, R. J., Shields, P. G., and Hatsukami, D. K. (2020) A randomized clinical trial of snus examining the effect of complete versus partial cigarette substitution on smoking-related behaviors, and biomarkers of exposure. *Nicotine Tob Res* 22, 473-481.
12. Loken, B., Borgida, E., Wang, T., Madzelan, M. K., Williams, A. L., Hatsukami, D., and **Stepanov, I.** (2020) Can the public be educated about constituents in smokeless tobacco? A three-wave randomized controlled trial. *Nicotine Tob Res.* ntr241, <https://doi.org/10.1093/ntr/ntr241> manuscript]
13. Dator, R., Villalta, P. W., Thomson, N., Jensen, J., Hatsukami, D. K., **Stepanov, I.**, Warth, B., and Balbo, S. (2020) Metabolomics profiles of smokers from two ethnic groups with differing lung cancer risk. *Chem Res Toxicol* 33, 2087-2098.
14. Carroll, D. M., Cigan, S., Ikuemonisan, J., Hammonds, T., Stepanov, I., St Helen, G., Benowitz, N., and Hatsukami, D. K. (2020) Relationships between race, gender, and spot urine levels of biomarkers of tobacco exposure vary based on how creatinine is handled in analyses. *Nicotine Tob Res.* ntaa117. doi: 10.1093/ntr/ntaa117
15. Luo, K., *Stepanov, I.*, and Hecht, S. S. (2019) Chemical biomarkers of exposure and early damage from potentially carcinogenic airborne pollutants. *Annals of Cancer Epidemiology* 3, doi:10.21037/ace.22019.21008.21001. [Contributed to literature search, data interpretation, and manuscript drafting and editing]
16. Tomar, S. L., Hecht, S. S., Jaspers, I., Gregory, R. L., and **Stepanov, I.** (2019) Oral health effects of combusted and smokeless tobacco products. *Adv Dent Res* 30, 4-10.
17. Jain, V., Alcheva, A., Huang, D., Caruso, R., Jain, A., Lay, M., O'Connor, R., and Stepanov, I. (2019) Comprehensive chemical characterization of Natural American Spirit cigarettes. *Tobacco Regulatory Science* 5, 381-399.
18. Carroll DM, Allenzara A, Jensen J, Stepanov I, Hecht S, Murphy S, Luo X, Donny E, Hatsukami DK. (2019) Biomarkers of Exposure and Potential Harm among Natural American Spirit Smokers. *Tobacco Regulatory Science* 5, 339-351.
19. Ma, B., Villalta, P. W., Hochalter, J. B., **Stepanov, I.**, and Hecht, S. S. (2019) Methyl DNA phosphate adduct formation in lung tumor tissue and adjacent normal tissue of lung cancer patients. *Carcinogenesis* 40, 1387-1394.
20. Ma, B., **Stepanov, I.**, and Hecht, S. S. (2019) Recent studies on dna adducts resulting from human



- exposure to tobacco smoke. *Toxics* 7, 16.
21. Khariwala, S. S., Rubin, N., **Stepanov, I.**, Nollen, N., Ahluwalia, J. S., Nelson, H. H., and Hatsukami, D. K. (2019) "Cold turkey" or pharmacotherapy: Examination of tobacco cessation methods tried among smokers prior to developing head and neck cancer. *Head Neck* 41, 2332-2339.
  22. Harris, A. C., Muelken, P., Swain, Y., Palumbo, M., Jain, V., Goniewicz, M. L., **Stepanov, I.**, and LeSage, M. G. (2019) Non-nicotine constituents in e-cigarette aerosol extract attenuate nicotine's aversive effects in adolescent rats. *Drug Alcohol Depend* 203, 51-60.
  23. Amente, S., Di Palo, G., Scala, G., Castrignano, T., Gorini, F., Coccozza, S., Moresano, A., Pucci, P., Ma, B., **Stepanov, I.**, Lania, L., Pelicci, P. G., Dellino, G. I., and Majello, B. (2019) Genome-wide mapping of 8-oxo-7,8-dihydro-2'-deoxyguanosine reveals accumulation of oxidatively-generated damage at DNA replication origins within transcribed long genes of mammalian cells. *Nucleic Acids Res* 47, 221-236.
  24. Talhout, R., Richter, P. A., **Stepanov, I.**, Watson, C. V., and Watson, C. H. (2018) Cigarette design features: Effects on emission levels, user perception, and behavior. *Tob Regul Sci* 4, 592-604.
  25. Gupta PC, Ray CS, Papke RL, Stepanov I, Khariwala SS, Chaturvedi P, Gupte HA, Pednekar MS. (2018) Perspectives on areca nut with some global implications: Symposium report. *Translational Research in Oral Oncology* 3, 1-8.
  26. **Stepanov, I.**, and Woodward, A. (2018) Heated tobacco products: things we do and do not know. *Tob Control* 27, s7-s8.
  27. Stein, J. S., Koffarnus, M. N., **Stepanov, I.**, Hatsukami, D. K., and Bickel, W. K. (2018) Cigarette and e-liquid demand and substitution in e-cigarette-naïve smokers. *Exp Clin Psychopharmacol* 26, 233-243.
  28. Singhavi, H., Ahluwalia, J. S., **Stepanov, I.**, Gupta, P. C., Gota, V., Chaturvedi, P., and Khariwala, S. S. (2018) Tobacco carcinogen research to aid understanding of cancer risk and influence policy. *Laryngoscope Investig Otolaryngol* 3, 372-376.
  29. Murphy, S. E., von Weyarn, L. B., Parenteau, M., **Stepanov, I.**, Tiirikainen, M., LeMarchand, L., and Park, S. L. (2018) Influence of UGT2B10 genotype on urinary excretion of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol-*N*-glucuronide by African American smokers. *Chem Res Toxicol* 31, 168-175.
  30. Murphy, S. E., Park, S. L., Balbo, S., Haiman, C. A., Hatsukami, D. K., Patel, Y., Peterson, L. A., **Stepanov, I.**, Stram, D. O., Tretyakova, N., Hecht, S. S., and Le Marchand, L. (2018) Tobacco biomarkers and genetic/epigenetic analysis to investigate ethnic/racial differences in lung cancer risk among smokers. *NPJ Precis Oncol* 2, 17.
  31. Ma, B., Zarth, A. T., Carlson, E. S., Villalta, P. W., Upadhyaya, P., **Stepanov, I.**, and Hecht, S. S. (2018) Identification of more than 100 structurally unique DNA-phosphate adducts formed during rat lung carcinogenesis by the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. *Carcinogenesis* 39, 232-241.
  32. Ma, B., Zarth, A. T., Carlson, E. S., Villalta, P. W., Upadhyaya, P., **Stepanov, I.**, and Hecht, S. S.

- (2018) Methyl DNA phosphate adduct formation in rats treated chronically with 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone and enantiomers of its metabolite 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol. *Chem Res Toxicol* 31, 48-57.
33. Khariwala, S. S., Hatsukami, D. K., **Stepanov, I.**, Rubin, N., and Nelson, H. H. (2018) Patterns of tobacco cessation attempts and symptoms experienced among smokers with head and neck squamous cell carcinoma. *JAMA Otolaryngol Head Neck Surg* 144, 477-482.
  34. Kelley, D. E., Boynton, M. H., Noar, S. M., Morgan, J. C., Mendel, J. R., Ribisl, K. M., **Stepanov, I.**, Nylander-French, L. A., and Brewer, N. T. (2018) Effective message elements for disclosures about chemicals in cigarette smoke. *Nicotine Tob Res* 20, 1047-1054.
  35. Harris, A. C., Muelken, P., Smethells, J. R., Yershova, K., **Stepanov, I.**, Olson, T. T., Kellar, K. J., and LeSage, M. G. (2018) Effects of nicotine-containing and "nicotine-free" e-cigarette refill liquids on intracranial self-stimulation in rats. *Drug Alcohol Depend* 185, 1-9.
  36. Cigan, S. S., McGovern, P. M., Choudhary, K., Miller, N. C., Georgieff, M., Rao, R., and **Stepanov, I.** (2018) Toenail manganese as a potential biomarker for in utero and early childhood exposure studies. *Sci Rep* 8, 17034.
  37. Bustamante, G., Ma, B., Yakovlev, G., Yershova, K., Le, C., Jensen, J., Hatsukami, D. K., and **Stepanov, I.** (2018) Presence of the carcinogen *N'*-nitrosonornicotine in saliva of e-cigarette users. *Chem Res Toxicol* 31, 731-738.
  38. Miller N, McGovern PM, Stepanov I, Sullivan SM, Mongin SJ, Rao R, Georgieff M. (2018) Maternal manganese exposure and subsequent infant cognition. *Minnesota Medicine May/June 2018*, 36-39.
  39. Berman, M. L., Bickel, W. K., Harris, A. C., LeSage, M. G., O'Connor, R. J., **Stepanov, I.**, Shields, P. G., and Hatsukami, D. K. (2018) Consortium on Methods Evaluating Tobacco: Research tools to inform U.S. Food and Drug Administration regulation of snus. *Nicotine Tob Res* 20, 1292-1300.
  40. Balbo, S., and **Stepanov, I.** (2018) The Wild West of e-cigarettes. *Chem Res Toxicol* 31, 823-824. [Co-wrote paper]
  41. Wagener, T. L., Floyd, E. L., **Stepanov, I.**, Driskill, L. M., Frank, S. G., Meier, E., Leavens, E. L., Tackett, A. P., Molina, N., and Queimado, L. (2017) Have combustible cigarettes met their match? The nicotine delivery profiles and harmful constituent exposures of second-generation and third-generation electronic cigarette users. *Tob Control* 26, e23-e28.
  42. **Stepanov, I.**, Abrams, J., Jain, V., Walter, K., and Kittner, D. L. (2017) Variations of toxic and carcinogenic constituents in nasvai: call for systematic research and regulation. *Tob Control* 26, 355-356.
  43. Sangaraju, D., Boldry, E. J., Patel, Y. M., Walker, V., Stepanov, I., Stram, D., Hatsukami, D., and Tretyakova, N. (2017) Isotope dilution nanoLC/ESI<sup>+</sup>-HRMS<sup>3</sup> quantitation of urinary N7-(1-hydroxy-3-buten-2-yl) guanine adducts in humans and their use as biomarkers of exposure to 1,3-butadiene. *Chem Res Toxicol* 30, 678-688.
  44. Stepanov I, Gupta PC, Parascandola M, Yershova K, Jain V, Dhumal G, Hatsukami DK. (2017) Constituent variations in smokeless tobacco purchased in Mumbai, India. *Tobacco Regulatory Science* 3, 305-314.

45. Morgan, J. C., Byron, M. J., Baig, S. A., **Stepanov, I.**, and Brewer, N. T. (2017) A response from Morgan, Byron, Baig, Stepanov and Brewer. *J Behav Med* 40, 684.
46. Morgan, J. C., Byron, M. J., Baig, S. A., **Stepanov, I.**, and Brewer, N. T. (2017) How people think about the chemicals in cigarette smoke: a systematic review. *J Behav Med* 40, 553-564.
47. Ma, B., Zarth, A. T., Carlson, E. S., Villalta, P. W., **Stepanov, I.**, and Hecht, S. S. (2017) Pyridylhydroxybutyl and pyridyloxobutyl DNA phosphate adduct formation in rats treated chronically with enantiomers of the tobacco-specific nitrosamine metabolite 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol. *Mutagenesis* 32, 561-570.
48. Khariwala, S. S., Ma, B., Ruszczak, C., Carmella, S. G., Lindgren, B., Hatsukami, D. K., Hecht, S. S., and **Stepanov, I.** (2017) High level of tobacco carcinogen-derived DNA damage in oral cells is an independent predictor of oral/head and neck cancer risk in smokers. *Cancer Prev Res (Phila)* 10, 507-513.
49. Jain, V., Garg, A., Parascandola, M., Chaturvedi, P., Khariwala, S. S., and **Stepanov, I.** (2017) Analysis of alkaloids in areca nut-containing products by liquid chromatography-tandem mass spectrometry. *J Agric Food Chem* 65, 1977-1983.
50. Stepanov I, Hatsukami D. (2016) Call to establish constituent standards for smokeless tobacco products. *Tobacco Regulatory Science* 2, 9-30.
51. Yuan, J. M., **Stepanov, I.**, Murphy, S. E., Wang, R., Allen, S., Jensen, J., Strayer, L., Adams-Haduch, J., Upadhyaya, P., Le, C., Kurzer, M. S., Nelson, H. H., Yu, M. C., Hatsukami, D., and Hecht, S. S. (2016) Clinical trial of 2-phenethyl isothiocyanate as an inhibitor of metabolic activation of a tobacco-specific lung carcinogen in cigarette smokers. *Cancer Prev Res (Phila)* 9, 396-405.
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#### ***Non-refereed Journal Articles or Book Chapters***

1. **Stepanov, I.**, Hatsukami, D. K. *Chemical characterization of smokeless tobacco products and relevant exposures in users*. In: *Smokeless Tobacco Products: Characteristics, Usage, Health Effects, and Regulatory Implications*, W.P. Pickworth (Ed.), pp 121-150. Elsevier, 2020.
2. **Stepanov I.**, Brinkman M. *Updated priority list of toxicants in combusted tobacco products*. Report on the Scientific Basis of Tobacco Product Regulations: Seventh Report of a WHO Study Group. WHO Technical report series 1015. WHO Press, World Health Organization 2019.
3. Talhout R, Richter PA, **Stepanov I.**, Watson CV, Watson CH. *Cigarette characteristics and design features*. Report on the Scientific Basis of Tobacco Product Regulations: Sixth Report of a WHO Study Group. WHO Technical report series 1001; pp 3-40. WHO Press, World Health Organization 2017.
4. **Stepanov I.**, Soeteman-Hernández L.G., Talhout R. *Research and monitoring the evolution of new tobacco products, including products with potentially “modified risks”*. Report on the Scientific Basis of Tobacco Product Regulations: Fifth Report of a WHO Study Group. WHO Technical report series 989; pp 91-161. WHO Press, World Health Organization 2015.
5. Stanfill S., **Stepanov I.** *Chapter 3: A Global View of Smokeless Tobacco Products*. *Smokeless Tobacco and Public Health: A Global Perspective*. Bethesda, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institutes of Health, National Cancer Institute. NIH Publication No. 14-7983; 2014.

#### **Presentations, Posters, and Exhibits**

##### ***Invited Presentations at Professional Meetings, Conferences, etc.***

1. **Stepanov I.** Tobacco product landscape and the continuum of risk. *Invited talk*, Ohio State University Environmental Science Graduate Program Seminar Series, April 5, 2019, Columbus, OH
2. **Stepanov I.** Chemical analysis of smokeless tobacco and areca nut. *Invited symposium presentation*, 4th National Conference on Tobacco or Health, February 9, 2019, Mumbai, India



3. **Stepanov I.** Smokeless tobacco constituents: Carcinogenicity and variations across products. *Invited talk*, AADR Conference on Oral Health Effects of Tobacco Products: Science and Regulatory Policy. September 14, 2018, Bethesda, MD
4. **Stepanov I.** Toxic and carcinogenic constituents in Camel Snus and other U.S. smokeless tobacco products. *Invited presentation*, FDA Tobacco Products Scientific Advisory Committee Meeting, September 13-14, 2018, Silver Spring, MD
5. **Stepanov I.** Aerosol Characterization and Biomarkers; Use Behavior. *Invited presentation*, NIH-organized ENDS Measurement Workshop, July 25–26, 2018, Rockville, MD
6. **Stepanov I.** Role of Pre-Clinical Research in Informing Tobacco Control Policy. *Plenary talk*, Kuala Lumpur Nicotine Addiction International Conference, July 9-11, 2018, Kuala Lumpur, Malaysia.
7. **Stepanov I.** Nicotine: How much do we know? *Invited symposium presentation*, Kuala Lumpur Nicotine Addiction International Conference, July 9-11, 2018, Kuala Lumpur, Malaysia.
8. Khariwala S, **Stepanov I.** (joint presentation) Analytical Capacity Building for the Study of Tobacco Carcinogen Exposures in India. *Invited talk*, Special meeting of the Fogarty International Center on funded tobacco research projects. Baltimore, MD, February 21, 2018.
9. **Stepanov I.** Toxic and carcinogenic potential of areca nut products. *Invited talk*, special symposium Concerns on Areca Nut, organized by Healix Sekhsaria Institute for Public Health, Mumbai, India, February 1, 2018.
10. **Stepanov I.** Update on the priority list for testing and regulation of selected contents and emissions in combusted tobacco products. *Invited presentation*, Meeting of the WHO Study Group on Tobacco Product Regulation, Minneapolis, MN, December 5 – 7, 2017.
11. **Stepanov I.** Cigarette standards to reduce toxic and/or addictive potential. *Invited panelist*, Expert Panel “Tobacco Product Standards for Combustible Products: Nicotine and Beyond”, Food and Drug Law Institute, Annual conference: Exploring Advanced Topics in Food and Drug Law, Washington, DC, May 4-5, 2017.
12. **Stepanov I.** Potential standards for conventional tobacco products. *Invited panelist*, Expert Panel “Global Implications of Product Standards”, Global Tobacco and Nicotine Forum, New York, September 13, 2017.
13. McGovern P, **Stepanov I.** (joint presentation) Manganese, Biomarkers of Exposure, and Infant Brain Development”. *Invited talk*, Minnesota Department of Health Source Water Protection Unit Meeting, May 25, 2017.
14. **Stepanov I.** Application of biomarkers in tobacco research studies. *Invited talk*, Guangxi CDC, Nanning, China, July 27, 2017.
15. McGovern P, **Stepanov I.** (joint presentation) Manganese, Biomarkers of Exposure, and Infant Brain Development”. *Invited talk*, Minnesota Department of Health Source Water Protection Unit Meeting, October 25, 2016.
16. **Stepanov I.** Consumer Perceptions of Smokeless Tobacco Constituents as a Function of Public Display Format. *Invited presentation*, Special meeting on the NIH Administrative Supplements for Tobacco Regulatory Research on the Public Display of Harmful and Potentially Harmful Constituents, November 8, 2016
17. **Stepanov I.** Recent advances in HPB-releasing DNA adduct analyses in oral cells from smokers. *Invited talk*, Center of Excellence in Environmental Toxicology, Perelman School of Medicine, University of Pennsylvania, October 20, 2016.
18. **Stepanov I.** Global diversity of tobacco products: Chemical composition, related exposures, and health outcomes. *Invited symposium presentation*, International Tobacco Control Summit Forum, Hunan Cancer Hospital, Changsha, China, May 16, 2016.
19. **Stepanov I.** Constituent yields and biomarkers of exposure for tobacco product regulation. *Invited talk*, NCI Division of Cancer Control and Population Sciences New Grantee Workshop, Rockville, MD, November 4-5, 2015.

20. **Stepanov I.** Coherence of human findings with animal tumor studies. *Invited workshop presentation*, FDA, Center for Tobacco Products, Biomarkers of Tobacco Exposure: A Public Workshop. Silver Spring, MD, August 3, 2015.
21. **Stepanov I.** Cigarette smoke constituents: brand variations and exposures in smokers. *Invited talk*, Center for Regulatory Research on Tobacco Communication, University of North Carolina – Chapel Hill, April 28, 2015
22. **Stepanov I.** Research on tobacco exposures and health outcomes. *Invited talk*, MSP Corporation, Minneapolis, MN, April 20, 2015.
23. **Stepanov I.** Research on tobacco exposures and health outcomes. *Invited talk*, Advanced Center for Research on Cancer, Mumbai, India, April 9, 2015.
24. **Stepanov, I.** Biomarkers of exposure to tobacco constituents: tools for tobacco regulatory research. *Symposium presentation*, 248<sup>th</sup> American Chemical Society National Meeting, Division of Chemical Toxicology, San Francisco, CA, August 10-14, 2014.
25. **Stepanov I.** Application of biomarkers in the development of tobacco regulatory science. *Invited talk*, Stephenson Cancer Center, University of Oklahoma, July 24-25, 2014.
26. **Stepanov I.** Tobacco constituents 101. *Invited talk*, Center for Regulatory Research on Tobacco Communication, University of North Carolina – Chapel Hill, May 5, 2014.
27. **Stepanov, I.** Building a Global Tobacco Product Surveillance Network. *Invited symposium presentation*, International Conference on Public Health Priorities in the 21st Century: The Endgame For Tobacco. New Delhi, India, September 9-12, 2013.
28. **Stepanov, I.** Analysis of TSNAs in Cigarette Filler and Smokeless Tobacco. *Invited workshop presentation*, Tobacco Product Analysis Workshop: FDA, Center for Tobacco Products, Washington, DC, July 30-31, 2013.
29. **Stepanov, I.** Toxic and carcinogenic constituents in U.S. smokeless tobacco products. *Invited talk*, Healis - Sekhsaria Institute for Public Health, Mumbai, India, March 21, 2013.
30. **Stepanov, I., Biener L.** Resources and Infrastructure for Collaboration. Presentation at the World Conference on Tobacco or Health. Workshop: Accelerating Global Research and Collaboration on Smokeless Tobacco. Singapore, March 19-24, 2012.
31. **Stepanov, I.** Toxic and carcinogenic constituents in dissolvable tobacco products. Presentation to the Food and Drug Administration, Tobacco Product Scientific Advisory Committee meeting. Washington, DC, January 18-20, 2012.
32. **Stepanov, I.** Tobacco Monitoring and Research Network: Snus Database. International Smokeless Tobacco Meeting. Atlanta, Georgia, December 8-9, 2010.

***Internal Seminars – University of Minnesota (presented by I. Stepanov)***

1. **Stepanov I.** E-cigarettes: Variations in nicotine delivery and toxicity profiles. Webinar series, Minnesota Center for Chemical and Mental Health, June 14, 2019.
2. **Stepanov I.** Current landscape of tobacco products and the continuum of risk. Tobacco Research Programs Seminar Series, University of Minnesota, October 9, 2018
3. **Stepanov I.** Current landscape of tobacco products and the continuum of risk. Pulmonary Citywide Conference, University of Minnesota, May 29, 2018
4. **Stepanov I.** Development and application of biomarkers in cancer research. Research overview for NCI-CURE Interns, Masonic Cancer Center, July 1, 2017.
5. **Stepanov I.** Carcinogen Exposures and Health Outcomes. Research overview for NCI-CURE Interns, Masonic Cancer Center, February 16, 2017.
6. **Stepanov I.** Public health journey toolkit: Passion, purpose, opportunities. School of Public Health New Student Orientation, Faculty Engagement Session (TED-like talk), August 31, 2016
7. **Stepanov I.** Biomarker Studies. Translational Biomarker Focus Group, Masonic Cancer Center, February 16, 2016.

8. **Stepanov I.** Building Analytical Research Capacity for Tobacco Studies in India. Tobacco Research Studies Group, Tobacco Research Programs, February 9, 2016.
9. **Stepanov I.** Carcinogenic constituents in tobacco products: Brand variations and exposures in users. Cancer Center Seminar Series, Masonic Cancer Center, February 17, 2015.
10. **Stepanov I.** Changes in Human Exposure Due to Changes in Constituent Levels in Tobacco Products. Tobacco and Obesity Research: Parallel Paths? Prevention and Etiology Program, Masonic Cancer Center, February 11, 2015.
11. **Stepanov I.** Tobacco constituent analyses: A target and a tool in transdisciplinary tobacco research. Tobacco Research Studies Group, Tobacco Research Programs, January 13, 2015.
12. **Stepanov I.** E-cigarettes: Research needs. Community Advisory Board meeting, Masonic Cancer Center, December 15, 2014.
13. **Stepanov I.** Carcinogens and nicotine in noncombustible tobacco: Global diversity of products and health outcomes. Environmental health Seminar Series, November 21, 2013
14. **Stepanov I.** Non-Combustible Tobacco: Diversity of Products, Research Needs, and Opportunities for Cancer Prevention. Cancer Prevention and Control Seminar, November 11, 2013
15. **Stepanov I.** Randomized trial of PEITC as a modifier of NNK metabolism in smokers. Masonic Cancer Center, University of Minnesota Cancer Prevention and Control Fall Retreat “Translational Science: Lung Cancer as a Model. October 12, 2012
16. **Stepanov I.** Toxic and carcinogenic constituents in smokeless tobacco products. Tobacco Studies Group Seminar. September 4, 2012
17. **Stepanov I.** Randomized trial of PEITC as a modifier of NNK metabolism in smokers: Project status update. Minnesota Chemoprevention Consortium Meeting. December 7, 2011
18. **Stepanov I.** Toxicants and carcinogens in smokeless tobacco: Beyond nicotine and nitrosamines. Transdisciplinary Tobacco Use Research Center Lectures. January 9, 2009.
19. **Stepanov I.** Relationship of human toenail nicotine, cotinine, and 4 (methylnitrosamino)-1-(3-pyridyl)-1-butanol to levels of these biomarkers in plasma and urine. 2007 Cancer Center Spring Poster Session and Symposium. May 16, 2007.
20. **Stepanov I.** Tobacco-Specific N-Nitrosamines: Occurrence and Biomarker Applications. Cancer Center Carcinogenesis and Chemoprevention Program Meeting. June 9, 2005.

***Abstracts Presented at Professional Meetings, Conferences, etc. (presented by I. Stepanov unless indicated otherwise)***

1. **Stepanov I.** Oral cell-based biomarkers for assessing e-cigarette-derived exposures and effects. 257<sup>th</sup> American Chemical Society National Meeting, Orlando, FL, March 31-April 4, 2019.
2. **Stepanov I,** Gupta P, Chaturvedi P, Cheong SC, Ayo-Yusuf O, Khariwala SS, Parascandola M. Global diversity of areca nut-containing and smokeless tobacco products. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA.
3. **Stepanov I,** Geng W, Meng J, Wagener T, Fedele D. Biomarker applications to characterize secondhand exposures in children. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA.
4. Alcheva A., Kapphahn R., Jensen J., Cigan S., Murphy S., Hatsukami D., **Stepanov I.** Mitochondrial DNA content in oral mucosa cells from African-American and White smokers. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA. *Presented by A. Alcheva.*
5. Cigan S.S., Jensen J., Murphy S.E., Hatsukami D., **Stepanov I.** Differences in urinary cadmium levels in African American and White smokers. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA. *Presented by S. Cigan.*
6. Ikuemonisan J., Yakovlev G., Petersen A., Jensen J., Yershova K., Murphy S., Hatsukami D., **Stepanov I.** Mouth-level exposure to nicotine and tobacco-specific N-nitrosamines in African-

- American and White smokers. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA. *Presented by J. Ikuemonisan.*
7. Jain A., Caruso R., Yershova K., O'Connor R., **Stepanov I.** Analyses of nicotine and tobacco-specific nitrosamines in spent filters from machine-smoked cigarettes: effect of smoking intensity and filter ventilation. Annual Meeting of the Society for Research on Nicotine and Tobacco, February 19-23, 2019, San Francisco, CA. *Presented by A. Jain.*
  8. Jain A, Yakovlev G, Ma B, **Stepanov I.** Investigation of the effect of 2-phenethyl isothiocyanate (PEITC) on the levels of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing DNA adducts in oral cells of smokers. 256<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 19-23, 2018. *Presented by A. Jain.*
  9. Ruszczak C, Ma B, Jensen J, Hatsukami D, **Stepanov I.** DNA damage induced by oxidative stress and lipid peroxidation in leukocyte DNA from African-American and Caucasian smokers. 256<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 19-23, 2018. *Presented by C. Ruszczak.*
  10. Jain V, **Stepanov I.** Analysis of beta-carbolines in smokeless tobacco products by liquid chromatography-tandem mass-spectrometry. 66<sup>th</sup> American Society for Mass Spectrometry, San Diego, CA, June 3-7, 2018. *Presented by V. Jain.*
  11. **Stepanov I.** Harmful constituents in smokeless tobacco products and laboratory testing methods. 17<sup>th</sup> World Conference on Tobacco or Health, Cape Town, South Africa, March 7-9, 2018.
  12. **Stepanov I.** Reducing tobacco-specific nitrosamines in cigarettes. 17<sup>th</sup> World Conference on Tobacco or Health, Cape Town, South Africa, March 7-9, 2018.
  13. **Stepanov I**, Jain V, Alcheva A. Toxicants and carcinogens in Natural American Spirit cigarettes. 24<sup>th</sup> Society for Research on Nicotine and Tobacco Annual Meeting, Baltimore, MD, February 21-24, 2018.
  14. Sullivan SM, Ma B, Alexander BH, Mandel JH, **Stepanov I.** Relationship between extracellular iron and circulating inflammation markers in plasma of Minnesota taconite workers. 26<sup>th</sup> EPICOH Conference, August 28-31, 2017, Edinburgh, UK. *Presented by S. Sullivan.*
  15. Arauz RE, Mandel JH, Ma B, Lindgren BL, **Stepanov I.** Occupational exposure to dust components and alterations in immune/inflammation markers among taconite workers in Minnesota. 26<sup>th</sup> EPICOH Conference, August 28-31, 2017, Edinburgh, UK. *Presented by R. Arauz.*
  16. Ma B, Ruszczak C, Villalta PW, Wauchope OR, Marnett LJ, **Stepanov I.** Simultaneous determination of a major peroxidation-derived DNA adduct, M<sub>1</sub>dG and its oxidized metabolite 6-oxo-M<sub>1</sub>dG, in human leukocyte DNA by liquid chromatography nanoelectrospray-high resolution tandem mass spectrometry. 254<sup>th</sup> American Chemical Society National Meeting, Washington, DC, August 20-24, 2017. *Presented by C. Ruszczak.*
  17. **Stepanov I**, Hatsukami D. Establishing Limits for Cigarette Smoke Constituent Levels per Milligram Nicotine. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017.
  18. Bustamante G, Yakovlev G, Yershova K, Ma B, Jensen J, Hatsukami D, **Stepanov I.** Presence of the oral and esophageal carcinogen N'-nitrosornicotine in saliva of e-cigarette users. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017.
  19. Khariwala S. Ma B, Ruszczak C, Carmella S, Hecht S, **Stepanov I.** High levels of oral nitrosamine-derived DNA adducts in smokers who develop oral/head and neck cancer. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017. *Presented by S. Khariwala.*
  20. Wagener T, Floyd E, **Stepanov I**, Driskill L, Frank S, Meier E, Leavens E, Tackett A, Molina N, Queimado L. Combustible cigarettes have met their match: the nicotine delivery profile of second- and third-generation electronic cigarettes. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017. *Presented by T. Wagener.*
  21. Yakovlev G, Gupta PC, Etteldorf A, Khariwala S, **Stepanov I.** Differences across products marketed

- as “snus” in Sweden, US, and India. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017. *Presented by G. Yakovlev.*
22. Yershova K, Lindgren B, **Stepanov I.** Constituent yields in the smoke of roll-your-own cigarettes: The effect of tobacco type, tube characteristics, and smoking intensity. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017. *Presented by K. Yershova.*
  23. Morgan J, Byron J, Baig S, **Stepanov I,** Brewer N. How people think about the chemicals in cigarette smoke: a systematic review. 23rd Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017. *Presented by J. Morgan.*
  24. Ma, B., Mandel, J.H., Alexander, B.H., Ramachandran, G., **Stepanov I.** Applying biomarker-based approach to investigate the role of inflammation in disease risk among Minnesota iron mining workers. 25<sup>th</sup> EPICOH - X2016 – RHICOH, September, 4-8, 2016 Barcelona, Spain. *Presented by B. Alexander.*
  25. Ma, B., Ruszczak, C., Jain, V., Khariwala, S.S., Dove, R., **Stepanov, I.** Improved method for the analysis of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing DNA adducts by liquid chromatography nanoelectrospray-high resolution tandem mass spectrometry. 252<sup>nd</sup> American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016. *Presented by C. Ruszczak.*
  26. Jain, V., Garg, A., Chaturvedi, P., Parascandola, M., **Stepanov, I.** Quantification of alkaloids in areca nut-containing products by liquid chromatography-tandem mass-spectrometry. 252<sup>nd</sup> American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016. *Presented by V. Jain.*
  27. Ma, B., Zarth, A., Villalta, P., Upadhyaya, P., **Stepanov, I.**, Hecht, S. Pyridylhydroxybutyl DNA phosphate adduct formation in rats treated chronically with the tobacco-specific lung carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. 252<sup>nd</sup> American Chemical Society National Meeting, Philadelphia, PA, August 21-25, 2016. *Presented by B. Ma.*
  28. Yakovlev, G., **Stepanov, I.**, Variation of toxic and carcinogenic constituents in U.S. moist snuff and snus. NIH Tobacco Regulatory Science Conference, Bethesda, MD, May 16-18, 2016. *Presented by G. Yakovlev.*
  29. **Stepanov, I.**, Yakovlev, G., Jensen, J., Yershova, K., Murphy, S., Hatsukami, D. Changes in tobacco constituent exposures in smokers switching to cigarettes with low nitrosamine per milligram nicotine yields. NIH Tobacco Regulatory Science Conference, Bethesda, MD, May 16-18, 2016. *Presented by D. Hatsukami.*
  30. **Stepanov, I.**, Yershova, K., Hatsukami, D. Tobacco-specific N-nitrosamines in U.S. cigarettes: ‘per nicotine’ yield variations by brand and smoking machine regimen. 22<sup>nd</sup> Society for Research on Nicotine and Tobacco Annual Meeting, Chicago, IL, March 2-5, 2016. *Presented by K. Yershova.*
  31. Jain, A., Yakovlev, G., Upadhyaya, P., Patel, Y., Jensen, J., Hatsukami, D., **Stepanov, I.** Urinary biomarkers of 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone metabolic activation in African-American and European-American smokers. 250<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 16-20, 2015. *Presented by A. Jain.*
  32. Ma, B., Villalta, P.W., Zarth, A., Kotandeniya, D., Upadhyaya, P., **Stepanov, I.**, Hecht, S.S. Analysis of phosphate adducts in hepatic and pulmonary DNA of rats treated with 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone. 250<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 16-20, 2015. *Presented by B. Ma.*
  33. Ma, B., Jing, M., Villalta, P.W., Kappahn, R.J., Ferrington, D.A., **Stepanov, I.** Simultaneous determination of 8-oxo-2'-deoxyguanosine and 8-oxo-2'-deoxyadenosine in human retinal pigment epithelium DNA by liquid chromatography nanoelectrospray-tandem mass spectrometry. 250<sup>th</sup> American Chemical Society National Meeting, Boston, MA, August 16-20, 2015. *Presented by B. Ma.*
  34. Saha, S., Harris, A.C., LeSage, M.G., **Stepanov, I.** Analysis of harman and norharman in tobacco products by liquid chromatography-tandem mass spectrometry. 21<sup>st</sup> Society for Research on Nicotine and Tobacco Annual Meeting, Philadelphia, PA, February 25-28, 2015. *Presented by K. Yershova.*
  35. **Stepanov, I.** Cigarette Smoke Constituents: Brand Variations and Exposures in Smokers. 21<sup>st</sup> Society

- for Research on Nicotine and Tobacco Annual Meeting, Philadelphia, PA, February 25-28, 2015.
36. **Stepanov, I.**, Gupta, P.C., Ayo-Yusuf, L., Hatsukami, D., Parascandola, M. Pilot international collaborative study on smokeless tobacco product characteristics and constituent levels. 3<sup>rd</sup> National Conference on Tobacco or Health, Mumbai, India, December 15-16, 2014. *Presented by P.C. Gupta.*
  37. Ma, B., **Stepanov, I.**, Villalta, P.W., Hecht, S.S. Identification of phosphate adducts formed by pyridyloxobutylation of DNA by 4-(acetoxymethylnitrosamino)-1-(3-pyridyl)-1-butanone, a chemically activated form of a tobacco specific carcinogen. 248<sup>th</sup> American Chemical Society National Meeting, San Francisco, CA, August 10-14, 2014. *Presented by B. Ma.*
  38. Jain, V., Villalta, P., Ma, B., **Stepanov, I.** Novel high resolution tandem mass spectrometry method for the analysis of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing DNA adducts in human oral cells. 248<sup>th</sup> American Chemical Society National Meeting, San Francisco, CA, August 10-14, 2014. *Presented by V. Jain.*
  39. Ma, B., Villalta, P.W., **Stepanov, I.** Analysis of malondialdehyde-deoxyguanosine adduct in human leukocyte DNA by liquid chromatography nanoelectrospray-high resolution tandem mass spectrometry. 246<sup>th</sup> American Chemical Society National Meeting, Indianapolis, IN, September 8-12, 2013. *Presented by B. Ma.*
  40. Villalta, P.W., Flynn, E., Hecht, S.S., **Stepanov, I.** Analysis of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing adducts in human DNA by high resolution tandem mass spectrometry. 244<sup>th</sup> American Chemical Society National Meeting, Philadelphia, PA, August 19-23, 2012. *Presented by P. Villalta.*
  41. Wang, Y., **Stepanov, I.**, Hecht, S.S. Analysis of 4-hydroxy-4-(3-pyridyl)-butanoic acid in smokers urine by liquid chromatography-electrospray ionization-tandem mass spectrometry. 244<sup>th</sup> American Chemical Society National Meeting, Philadelphia, PA, August 19-23, 2012. *Presented by M. Jing.*
  42. Hecht, S.S., James-Yi, S., O'Sullivan, G., **Stepanov, I.**, Wang, M., Zhang, S., Kassie, F., Carmella, S.G., Upadhyaya, P., Balbo, S. DNA binding of the smokeless tobacco constituent (*S*)-*N'*-nitrosornicotine [(*S*)-NNN] predicts its oral cavity carcinogenicity in rats. 244<sup>th</sup> American Chemical Society National Meeting, Philadelphia, PA, August 19-23, 2012. *Presented by S. Balbo.*
  43. Knezevich, A., Yuan, J.M., Carmella, S.G., Hatsukami, D.K., Hecht, S.S., **Stepanov, I.** Evaluation of toxicant exposure in U.S. smokers after short-term switching to commercial low-nitrosamine cigarettes. American Association for Cancer Research Annual Meeting 2012, Chicago, IL, March 31 – April 4, 2012. *Presented by A. Knezevich.*
  44. Balbo, S., James-Yi, S., O'Sullivan, G., **Stepanov, I.**, Wang, M., Kassie, F., Carmella, S., Upadhyaya, P., Wettlaufer, C., Knezevich, A., Hecht, S.S. (*S*)-*N'*-Nitrosornicotine, a constituent of smokeless tobacco, is a potent oral tumorigen in rats.. American Association for Cancer Research Annual Meeting 2012, Chicago, IL, March 31 – April 4, 2012. *Presented by S. Balbo.*
  45. **Stepanov, I.** Tobacco carcinogen exposure and cancer risk: Application of biomarkers. V International Conference-Symposium on Ecological Chemistry, Chisinau, Moldova, March 2-3, 2012.
  46. **Stepanov, I.**, Knezevich, A., Zhang, L., Watson, C., Hatsukami, D.K., Hecht, S.S. Carcinogenic nitrosamines in U.S. cigarettes: Three decades of remarkable neglect by the tobacco industry. 242<sup>nd</sup> American Chemical Society National Meeting, Denver, CO, August 28 – September 1, 2011.
  47. **Stepanov, I.**, Knezevich, A., Muzic, J., Hatsukami, D., Hecht, S.S. Nornicotine nitrosation in human saliva and its relation to endogenous formation of *N'*-nitrosornicotine in oral nicotine replacement therapy users. American Association for Cancer Research Annual Meeting 2011, Orlando, FL, April 2-6, 2011.
  48. Yuan, J.M., Knezevich, A., Wang, R., Gao, Y.T., Hecht, S.S., **Stepanov, I.** Urinary levels of the tobacco-specific carcinogen *N'*-nitrosornicotine and its glucuronide are strongly associated with esophageal cancer risk in smokers in the Shanghai Cohort Study. American Association for Cancer Research Annual Meeting 2011, Orlando, FL, April 2-6, 2011. *Presented by Y. M. Yuan.*
  49. **Stepanov, I.**, Muzic, J., Jensen, J., Hatsukami, D., Hecht, S.S. Analysis of 4-hydroxy-1-(3-pyridyl)-1-butanone-releasing DNA adducts in human exfoliated oral mucosa cells by liquid chromatography-electrospray ionization-tandem mass spectrometry. 240<sup>th</sup> American Chemical Society National

- Meeting, Boston, MA, August 22-26, 2010.
50. **Stepanov, I.**, Villalta, P.W., Knezevich, A., Jensen, J., Hatsukami, D., Hecht, S.S. Analysis of 21 polycyclic aromatic hydrocarbons in smokeless tobacco by gas chromatography-mass spectrometry. 238<sup>th</sup> American Chemical Society National Meeting, Washington, DC, August 16-20, 2009.
  51. Hecht, S.S., Wang, M., Upadhyaya P., **Stepanov, I.**, Lao, Y., Villalta, P.W., Hatsukami, D.K., Carmella, S.G. Tobacco carcinogen biomarkers for investigating tobacco and cancer. 238<sup>th</sup> American Chemical Society National Meeting, Washington, DC, August 16-20, 2009. *Presented by S. Hecht.*
  52. **Stepanov, I.**, Hecht, S.S. Mitochondrial DNA adducts in the lung and liver of F344 rats chronically treated with 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone and (S)-4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol. American Association for Cancer Research Annual Meeting 2009, Denver, CO, April 18-22, 2009.
  53. **Stepanov, I.**, Carmella, S.G., Briggs, A., Hertsgaard, L., Hatsukami, D., Hecht, S.S. Endogenous formation of the carcinogen *N'*-nitrosornicotine in users of oral nicotine replacement therapy products. American Association for Cancer Research Annual Meeting 2009, Denver, CO, April 18-22, 2009.
  54. Stepanov I., Upadhyaya, P., Feuer, R., Jensen, J., Hatsukami, D.K., Hecht, S.S. Extensive metabolic activation of the tobacco-specific carcinogen 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone in smokers. American Association for Cancer Research Annual Meeting 2008, San Diego, CA, April 12-16, 2008.
  55. **Stepanov, I.**, Hecht, S.S. Detection and quantitation of *N'*-nitrosornicotine in human toenails by liquid chromatography-electrospray ionization-tandem mass spectrometry. 2007 AACR International Conference on Frontiers in Cancer Prevention Research, Philadelphia, PA, December 5-8, 2007.
  56. **Stepanov, I.**, Lindgren, B., Hecht, S.S., Benowitz, N., Peyton, J.III, and Wilson, M. Relationship of human toenail nicotine, cotinine, and 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol to levels of these biomarkers in urine and plasma. Chemistry in Cancer Research: A Vital Partnership, San Diego, CA. February 4-7, 2007.
  57. **Stepanov, I.**, Jensen, J., Hatsukami, D., Hecht, S.S. Metabolites of Nicotine and a Tobacco-Specific Nitrosamine, 4-(Methylnitrosamino)-1-(3-Pyridyl)-1-Butanone, in Human Toenails, 97<sup>th</sup> American Association for Cancer Research Annual meeting, Washington, DC. April 1-2, 2006.
  58. Hecht, S.S., Upadhyaya, P., Wang, M., **Stepanov, I.**, Lao, Y., Villalta, P.W., Carmella, S.G. Tobacco carcinogen biomarkers: Development and application. 232<sup>nd</sup> American Chemical Society National Meeting, San Francisco, CA, September 10-14, 2006. *Presented by S. Hecht.*
  59. **Stepanov, I.**, Hecht, S.S. Tobacco-specific Nitrosamines and Their Pyridine-*N*-Glucuronides in the Urine of Smokers and Smokeless Tobacco Users, 96<sup>th</sup> American Association in Cancer Research Annual meeting, Anaheim, CA. April 16-20, 2005.

## TEACHING AND CURRICULUM DEVELOPMENT

### University of Minnesota

#### *Courses, seminars, and instructional units taught*

PubH 6160: Principles of Toxicology II (Since Spring 2018)

PubH 6162: Biomarkers (Since Fall 2013)

PubH 6100: Topics course: Biomarkers in Public Health Research (Spring 2013)

PubH 6140: Occupational and Environmental Epidemiology – one lecture (Spring 2013)

PubH 6112: Risk Analysis: Application to Risk- Based Decision Making – one lecture (Spring 2012)

#### *Curriculum Development*

Principles of Toxicology II (PubH 6160): revision of the course curriculum, 2018

Biomarkers (PubH 6162): developed the course, 2013

***Faculty Development Activities regarding teaching***

Early Career Teaching Program, Center for Teaching and Learning, University of Minnesota (2013-2014 academic year).

“Designing Courses to Support Student Learning and Teacher Satisfaction”, series of workshops at the Center for Teaching and Learning, University of Minnesota (Fall 2011)

**Moldova State University**

***Courses, seminars, and instructional units taught***

Basics of Ecology (Fall 2000 – Spring 2001)

Metrology and Standardization (Fall 2000 – Spring 2001)

Ecotoxicology (Spring 2002 – Spring 2003)

Chemical Control of Cosmetics and Pharmaceuticals (Spring 2002 – Spring 2003)

***Curriculum Development***

Basics of Ecology (course, seminars)

Metrology and Standardization (course, seminars, laboratories)

Ecotoxicology (course, seminars)

Chemical Control of Cosmetics and Pharmaceuticals (course, seminars, laboratories)

**Other teaching activities**

“Variety of smokeless tobacco products, their contents and constituents”. Lecture as part of the Online Certificate Course, Global Knowledge Center – Smokeless Tobacco, World Health Organization, May 10, 2019.

Organizer and co-Chair, Pre-Conference Training Workshop “Research to Inform the Development and Implementation of Tobacco Control Policies and Interventions”, World Conference on Tobacco or Health, Cape Town, South Africa, March 6, 2018 (51 participants from 23 countries)

Coordinated the development of the Knowledge Center, an online platform of research training resources (through the Society for Research on Nicotine and Tobacco), 2016-2018

“Tobacco Biomarker Assay”, Virtual laboratory tour and panel discussion, Basic Science and Global Health Networks, Society for Research on Nicotine and Tobacco, July 20, 2016.

What are you known for? Being mindful of your evolving “story” as you navigate tenure-track”. Masonic Cancer Center Junior Faculty meeting, University of Minnesota, April 17, 2015

Honors Research Series Panel, University Honors Program, March 9, 2015

“Why Minnesota?” Presentation to prospective students at the Division of Environmental Health Sciences, University of Minnesota, March 9, 2015

Guest speaker at a career development workshop with the Health Careers Center, University of Minnesota, May 1, 2014

Invited panelist for the Data to Action Workshop, International Conference on Public Health Priorities in the 21st Century: The Endgame For Tobacco. New Delhi, India, September 10, 2013

Guest speaker at a career development workshop with the 2013 Cancer and Health Disparities Summer Internship Program, University of Minnesota, July 22, 2013.

Application of biomarkers in public health research. M.S./Ph.D. Program Seminar at the University of the Moldovan Academy of Sciences, Chisinau, Moldova, March 2012.

Application of biomarkers in public health research. M.S./Ph.D. Program Seminar at Moldova State University, Chisinau, Moldova, March 2012.



## ADVISING AND MENTORING

### Undergraduate Student Activities

#### *Undergraduate research projects (UROPS, directed research, lab participation, etc.)*

Sena Hanson (Brown University, Linking Internships and Knowledge (LINK) Program)

Ivana Kamenchouk (UMN, Summer intern)

Abdi Farah (UMN, Cancer Disparities Summer Internship Program)

Mula Lay (Washington Technology Magnet High School, CURE Cancer Program)

Jeyani Narayan (East Ridge High School, Honors Mentor Connection program)

Andrew Etteldorf (Summer intern)

David Wen (Summer student)

Brad Lieberman (Summer student)

Ryan Baumgartner (Directed research)

John Muzic (Directed research)

### Graduate Student Activities

#### *Master's Theses Directed*

Shannon Sullivan (MPH, January 2017)

Thesis: "Biomarkers of in-utero and early childhood exposure to manganese"

Fadume Ashiro (MPH, graduated May 2016)

Thesis: "Screening for cervical cancer and HPV infection among Somali immigrant women in Minnesota: Recommendations to increase screening rates"

Kriti Choudhary (MPH, graduated May 2015)

Thesis: "Inflammatory and Immunologic Biomarkers for Assessing Risk of Infectious Diseases in Smokers"

#### *Master's Student Advisees*

Derek King (MPH, 2021)

Stephen Campbell (MPH, 2018)

Channy Chan (MPH, 2019)

Jessica Leigh Hellmer (MS, 2018)

Olaoluwa Lediju (MPH, 2015)

Fadume Ashiro (MPH, 2016)

Kriti Choudhary (MPH, 2015)

Ning Lee (MS)

#### *Master's Committees Served on*

Sierra Palmer (MPH, May 2019)

Thesis "Examining the interplay between temperament, complex learning, and coping in primates"

Channy Chan (MPH, April 2019)

Thesis "Effects of Tylosin on the Proliferation of Antibiotic Resistant Bacteria in a Simulated River Water Ecosystem"

Jessica Hellmer (MS, September 2018)

Thesis "Analysis of feeding competition, distribution and range in two tick species in Iowa"

A. Candace Derenge (MPH, ASU-UMN PHAP program, May 2018)

Thesis "Listening to Twitter Chatter About Juul Use in Schools"

Shannon Sullivan (MPH, January 2017)

Thesis "Biomarkers of in-utero and early childhood exposure to manganese"

Zeke McKinney, MPH (June 2015)

Thesis “Effects of Taconite Mining Silica and Respirable Dust Exposure on an Inflammatory DNA Adduct Biomarker, M<sub>1</sub>dG”

Jianji Chen (MS, June 2015)

Thesis “A pilot proteomic study of pyridyloxobutylated protein adduct formation”

Kriti Choudhary (MPH, May 2015)

Thesis: “Inflammatory and Immunologic Biomarkers for Assessing Risk of Infectious Diseases in Smokers”

Donna Coetzee (MPH, March 2015)

Thesis “Neurodevelopmental Effects of Manganese on Children: Literature Review”

Margarita Omeonu (MPH, May 2014)

Thesis “Description and Evaluation of Culture Independent Diagnostics for Diagnosis of Campylobacter in Minnesota”

### ***Doctoral Dissertations Directed***

Eleanore Hansen, (Molecular and Systems Toxicology PhD, exp. 2024)

Thesis “Sugars in tobacco products: Impact on product toxicity and abuse liability” (draft)

Aleksandra Alcheva, (Molecular and Systems Toxicology PhD, exp. 2022)

Thesis “Oral microbiome as potential tool for assessing effects of tobacco-associated exposures” (draft)

Shannon Cigan (Environmental and Occupational Epidemiology PhD, 2019)

Thesis “ Urinary cadmium and lung cancer risk in smokers from the Multiethnic Cohort Study”

### ***Doctoral Students Advised (Academic advising for all or part of graduate student’s program)***

Eleanore Hansen, PhD student, Molecular and Systems Toxicology, expected 2024

Aleksandra Alcheva, PhD student, Molecular and Systems Toxicology, expected 2022

Shannon Cigan, PhD candidate, Environmental and Occupational Epidemiology, 2019

Yan Zhong (Rotation supervisor)

### ***Doctoral Committees Served on***

Valeria Guidolin (Regulatory Toxicology PhD candidate)

“Identification and Quantification of DNA Modifications as Biomarkers for Precision Medicine in Patients Treated with DNA Alkylating Drugs”

Rony Arauz (Occupational Medicine PhD, graduated in 2018)

“Airborne particulates exposure assessments and potential impact on inflammatory markers and health outcomes in taconite workers in Minnesota”

Yuyin Zhou (PhD candidate, Department of Food Science and Nutrition)

“Roles of aldehydes in the associations between antibiotics usage and colorectal carcinogenesis”

### ***Post-doctoral fellows supervised***

Michael Appenteng (June 2021 – present)

Samantha Case (February 2021 – present)

Vipin Jain (September 2013 – June 2019)

Bin Ma (June 2012 – January 2019)

Hamid Baniyadi (May 2014 – June 2015)

Subhrakanti Saha (March 2014 – December 2014)

Meng Jing (June 2012 – February 2014)

Yaohua Wang (September 2010 – February 2012)

## **Other Teaching/Instructional/Educational/Advising Contributions**

### ***Trainees, Mentees, Advisees, employees***

Mentoring and advising Muniswary Subramaniyan, research assistant trainee at the Nicotine Addiction Research & Collaborating Centre (NARCC), University of Malaya

Mentoring and advising Sampada Nikam, research fellow in the Advanced Center for Treatment, Research & Education in Cancer (ACTREC) and PhD student in Clinical Oncology at Tata Memorial Centre, India

Mentoring and supervising Christopher Ruszczak, Researcher 2, employee in Stepanov Laboratory at the Masonic Cancer Center, University of Minnesota (since 2015)

Mentoring and supervising Anshu Jain, Researcher 4, employee in Stepanov Laboratory at the Masonic Cancer Center, University of Minnesota (since 2014)

Mentoring and supervising Katrina Yershova, Researcher 2, employee in Stepanov Laboratory at the Masonic Cancer Center, University of Minnesota (since 2011)

Mentoring and supervising Galina Yakovlev, Researcher 2, employee in Stepanov Laboratory at the Masonic Cancer Center, University of Minnesota (2013-2016)

Mentoring and supervising Aleksandar Knezevich, Junior Scientist, employee in Stepanov Laboratory at the Masonic Cancer Center, University of Minnesota (2008-2012)

### ***Visiting Scholars Hosted***

Sampada Nikam, January – March 2019

Affiliation: Advanced Center for Training, Research, and Education in Cancer, Mumbai, India.

Keyuri Adhikari, June – July 2018

Affiliation: Healix - Sekhsaria Institute for Public Health, Mumbai, India

Yang Tang, June – August 2018

Affiliation: Center for Disease Control, Guangxi, China

## **SERVICE AND PUBLIC OUTREACH**

### **Service to the Discipline/Profession/Interdisciplinary Area(s)**

#### ***Editorships***

Guest Editor, *Tobacco Control, Special Issue on Heated Tobacco Products*, 2018

Editorial Board, *Scientific Reports (Nature Publishing Group)*, 2015 – 2020

Associate Editor, *Tobacco Regulatory Science*, 2014 – 2020

#### ***Ad-hoc Journal Reviewer Experience***

*Journal of Analytical Toxicology, BMJ Open, Biomarkers, Mutation Research, Journal of Environmental Research and Public Health, Analytical Methods, Chemistry Central Journal, Food and Chemical Toxicology, Analytical Chemistry, Journal of Agricultural and Food Chemistry, Cancer Epidemiology Biomarkers & Prevention, Environmental Toxicology, Current Biomarker Findings, Chemical Research in Toxicology, International Journal of General Medicine, BMC Public Health, Tobacco Control, Regulatory Toxicology and Pharmacology, Human & Experimental Toxicology, Environmental Science & Technology, Nicotine & Tobacco Research, Journal of Chromatography B*

#### ***Other publication reviewer experience***

Expert review of a book proposal "Tobacco Smoke Biomarkers", CRC Press and Taylor & Francis Asia Pacific, November 2013

Expert review of a chapter for the monograph "Smokeless Tobacco and Public Health in India", to be published by the Public Health Foundation of India, the WHO South-East Asia Region, and

CDC. December 2012

***Committee memberships***

Co-Chair, Toxicity Special Interest Group (SIG), Tobacco Regulatory Science (since 2020)

Co-Chair, Global Research Network, Society for Research on Nicotine and Tobacco (since 2019)

Councilor (Alternate), Division of Chemical Toxicology, American Chemical Society (since 2017)

Advisory Board, Global Health Network, Society for Research on Nicotine and Tobacco (since 2016)

Co-Chair, Education Subcommittee, Global Health Network, Society for Research on Nicotine and Tobacco (2016-2018)

Executive Committee Members-At-Large, Division of Chemical Toxicology, American Chemical Society (since 2014).

Communications Committee, Division of Chemical Toxicology, American Chemical Society (since 2011).

Professional Development Committee, Division of Chemical Toxicology, American Chemical Society (since 2009).

***Review panels for external funding agencies, foundations, etc.***

National Institutes of Health, Center for Scientific Review, Cancer Etiology (CE) Study Section, standing member, since July 1, 2019

National Institutes of Health, Center for Scientific Review, Cancer Etiology (CE) Study Section, October 25-26, 2018

National Institutes of Health, Cutting-Edge Basic Research Awards (CEBRA) Review Panel, ZDA1 SXM-M (09), October 24, 2018

National Institutes of Health, Special Emphasis Panel/Scientific Review Group, ZDA1-JXB-N (12), July 20, 2018

National Institutes of Health, Multi-site R01 Special Emphasis Panel, ZCA1 RPRB-Z (O3), June 14, 2018

National Institutes of Health, Special Emphasis Panel/Scientific Review Group, ZRG1 RPHB-U (56), March 22, 2018

National Institutes of Health, Special Emphasis Panel/Scientific Review Group ZHL1 CSR-N (S1), June 20, 2017

National Institutes of Health, Special Emphasis Panel/Scientific Review Group ZRG1 OTC-Y (55), May 15, 2017

NIOSH World Trade Center Cooperative Research Agreements Review, CDC/NIOSH, Atlanta, March 28-29, 2017

National Institutes of Health, Special Emphasis Panel/Scientific Review Group 4 ZRG1 OTC-B(55), November 2016

National Institutes of Health, Special Emphasis Panel/Scientific Review Group 2015/05 ZCA1 SRB-L (M1), April 2016

National Institutes of Health, Special Emphasis Panel/Scientific Review Group 2015/05 ZCA1 SRB-L (M1), October 2015

Grant reviewer for The City College of New York/Memorial Sloan-Kettering Cancer Center Cancer Center Partnership, June 2015

National Institutes of Health, Special Emphasis Panel/Scientific Review Group 2015/05 ZCA1 SRB-L (M1), April 2015

Environmental Exposure, Toxicology, and Pathogenesis / Thirdhand Smoke Consortium Study Section, The Tobacco-Related Disease Research Program (TRDRP), University of California, February 2015

Environmental Exposure, Toxicology, and Pathogenesis / Thirdhand Smoke Consortium Study Section, The Tobacco-Related Disease Research Program (TRDRP), University of California, July 2014

Grant reviewer for the Cancer Study Section, The Tobacco-Related Disease Research Program (TRDRP), University of California, April 2013

Grant reviewer for the Cancer Research UK Tobacco Advisory Group, London, UK, March 2013

Grant reviewer for The City College of New York/Memorial Sloan-Kettering Cancer Center Cancer Center Partnership, March 2011

### ***Program review experience***

Society for Research on Nicotine and Tobacco, 2016, 2018-2022 Annual Meeting Program Committees

American Association for Cancer Research, 2017 Annual Meeting Program Committee

Abstract reviewer for 13<sup>th</sup> International Conference on Frontiers in Cancer Prevention Research, American Association for Cancer Research, New Orleans, LA, September 28-October 1, 2014

### ***Judging work of others***

Poster judge, 240<sup>th</sup>, 244<sup>th</sup>, 248<sup>th</sup> American Chemical Society National Meetings

### ***Organization of conferences, workshops, panels, symposia***

Planning Committee for the 2019 NIH Tobacco Regulatory Science Meeting, October 2019, Washington, DC

Co-Lead, Tobacco Research and Policy Retreat, University of Minnesota, May 10, 2019

Organizing committee and co-lead of the Global Oncology Retreat, Masonic Cancer Center, University of Minnesota, May 1, 2019

Symposium organizer and chair “Application of biomarkers for risk assessment and interventions in vulnerable populations”, 25<sup>th</sup> Society for Research on Nicotine and Tobacco Annual Meeting, San Francisco, CA, February 20-23, 2019

Symposium organizer and chair “Smokeless tobacco and areca nut: Global diversity of products and parallels in associated health risks”, 25<sup>th</sup> Society for Research on Nicotine and Tobacco Annual Meeting, San Francisco, CA, February 20-23, 2019

Lead and moderator, Aerosol Characterization and Biomarkers: Laboratory Assessment Group, NIH-organized ENDS Measurement Workshop, July 25–26, 2018, Rockville, MD

Organizer and co-Chair, Pre-Conference Training Workshop “Research to Inform the Development and Implementation of Tobacco Control Policies and Interventions”, World Conference on Tobacco or Health, Cape Town, South Africa, March 6, 2018 (51 participants from 23 countries)

Symposium chair “Product Standards for Cigarettes: Models to Achieve Maximum Public Health Benefit”, 23<sup>rd</sup> Society for Research on Nicotine and Tobacco Annual Meeting, Florence, Italy, March 8-11, 2017

Panel Chair, Toxicology/Physiological Responses, Fall 2016 TCORS Grantee Meeting, NIH/FDA, November 7-8, 2016

Facilitator, Biology and Epidemiology Session, International Conference on Betel Quid and Areca Nut, Kuala Lumpur, Malaysia, April 27-28, 2016

Session Chair, V International Conference-Symposium on Ecological Chemistry, Chisinau, Moldova, March 2-3, 2012

Session Chair, Division of Chemical Toxicology, 238<sup>th</sup> American Chemical Society National Meeting, Washington, DC, August 16-20, 2009

Secretary, II International Conference on Ecological Chemistry, Chisinau, Moldova, October 11-12, 2002

## **Service to the University/School of Public Health/Division**

### ***University of Minnesota***

#### University-wide service

Advisory Group, 2019 Summer Institute in Adolescent Health, 2019

Organizer, Tobacco Research Seminar Series, since 2018

#### Collegiate Service and Intercollegiate Service

Laboratory tours for youth and undergraduate students as part of the Masonic Cancer Center Community Engagement & Education outreach efforts (July 2018, October 2018, December 2018, April 2019)

Co-Chair, Food Workgroup, SPH 2030 Strategic Planning Initiative, 2014

Chair, School of Public Health, Recognition Awards and Honors (RAH) Committee, 2014

Judging Committee, School of Public Health Research Day, Spring 2014

Faculty Representative, School of Public Health, Recognition Awards and Honors (RAH) Committee, 2013

Judging Committee, School of Public Health Research Day, Spring 2013

Non-Tenured Faculty Representative, School of Public Health, Appointment Promotion and Tenure (APT) Ad Hoc Committee, 2012

#### Department/Unit Service

Chair, Cancer Epidemiology Faculty Search Committee, Division of Environmental Health Sciences, 2019

Member, Global Food Ventures Faculty Search Committee, Division of Environmental Health Sciences, 2018

Research Development Team Lead, Division of Environmental Health Sciences, (2016-2019)

Member, Cancer Protocol Review Committee, Masonic Cancer Center, University of Minnesota, since 2015

Masonic Cancer Center, Masonic Tour Program. Discussed on-going research and gave tours of my laboratory, March-July 2015

Grant Reviewer for Masonic Cancer Center Internal Grants Program, Cancer Prevention & Control Award Reviews, 2014

Grant Reviewer for Minnesota Chemoprevention Consortium, Masonic Cancer Center, University of Minnesota, 2013

Organizing Committee, Ph.D. program in Toxicology, University of Minnesota, 2013-2015

Abstract review for the Masonic Cancer Center 2012 Research Symposium, Carcinogenesis and Chemoprevention Program, 2012

Member, Committee for bridge funding allocation for graduate students, Division of Environmental Health Sciences, 2012

Member, Strategic Planning Committee, Division of Environmental Health Sciences, 2012

Member, Faculty Search Committee, Division of Environmental Health Sciences, 2012, 2013

## Public And Other Service

### Community, state, national, or international service activities

Youth Tobacco Prevention Collaboration, a joint initiative between Masonic Cancer Center, Minnesota Department of Health, and other organizations in Minnesota, since 2018

Minnesota State Fair: Innovations in Cancer Care and Prevention, University of Minnesota building. Discussing health effects of alternative tobacco products (e-cigarettes, smokeless tobacco). August 30, 2018

American Chemical Society, Minnesota Chapter, Chemistry Career Fair. Discussing career opportunities in public and environmental health with undergraduate students and other attendees of the fair, November 14, 2017

Minnesota State Fair: Innovations in Cancer Care and Prevention, University of Minnesota building. Discussing health effects of alternative tobacco products (e-cigarettes, smokeless tobacco). August 31, 2017

American Chemical Society, Minnesota Chapter, Chemistry Career Fair. Discussing career opportunities in public and environmental health with undergraduate students and other attendees of the fair, November 15, 2016

Minnesota State Fair: Innovations in Cancer Care and Prevention, University of Minnesota building. Discussing health effects of alternative tobacco products (e-cigarettes, smokeless tobacco). September 1, 2016

Masonic Cancer Center, University of Minnesota. Cancer and Human Body event at Science Museum. Discussing health effects of alternative tobacco products (e-cigarettes, smokeless tobacco). March 2016

Masonic Cancer Center, "Scrubs" event for middle-school children. Discussing health effects of alternative tobacco products (e-cigarettes, smokeless tobacco). March 2016

Masonic Cancer Center, University of Minnesota. Discovery Across Disciplines at UMN. Discussing research progress in tobacco carcinogenesis area. October 2015

Minnesota State Fair: Innovations in Cancer Care and Prevention, "Ask the Expert" session discussion of e-cigarettes. University of Minnesota building, September 3, 2015

Consultant, Center for Regulatory Research on Tobacco Communication (CRRTC), University of North Carolina, Chapel Hill, 2014-2016

Agent Workgroup, PhenX (Consensus measures for phenotypes and eXposures) Tobacco Regulatory Research Working Groups, Tobacco Regulatory Science Program, NIH, 2014

Food and Drug Administration, Center for Tobacco Products, Special Federal Employee (consulting), since December 2013

Public Health Law Center – consulted on drafting sample statutory language to amend the current tobacco product ingredient reporting requirements contained in Minnesota Statutes, Chapter 461 (to expand the list of ingredients and to include electronic cigarettes)

Minnesota Department of Health – assisted with the revision of Minnesota Tobacco Substance Reporting Form to collect data from tobacco manufacturers per Minnesota Statutes §461.17

Consultant, "Chemistry of Tobacco Products" and "Tobacco Pharmacology and Toxicology", slide decks developed for the Food and Drug Administration, Center for Tobacco Products. BHL Technologies, Rockville, MD, December 2012-March 2013

Biomarkers for Tobacco Carcinogenesis Studies. Masonic Cancer Center, Masonic Tour Program "Innovations in Cancer Research". May 10, 2013

Minnesota State Fair: Discussed toxicity of tobacco products at the University of Minnesota, Tobacco Research Programs booth, August 24, 2012

Scientific Secretary, Journal "The Environment", Chisinau, Moldova, 2003

United Nations Environmental Program (UNEP)-Moldova National Committee (2000-2002)