BIOGRAPHICAL SKETCH

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NAME: Holásková, Ida

eRA COMMONS USER NAME (credential, e.g., agency login): iholaskova

POSITION TITLE: Statistician

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Slovak University of Agriculture, Nitra, Slovakia	B.S.	07/94	Animal Sciences (AS) and AS Education
West Virginia University, Morgantown, WV	M.S.	05/02	Statistics
West Virginia University, Morgantown, WV	M.S.	08/02	Reproductive Physiology
West Virginia University, Morgantown, WV	Ph.D.	08/07	Reproductive Physiology
West Virginia University, Morgantown, WV	Postdoctoral	03/10	Physiology/Immunology

A. Personal Statement

Major focus of my daily work is application of rigorous statistical methods to research data generated at West Virginia University (WVU), an R1 institution. I manage and serve as a primary consulting statistician to nearly 250 faculty and graduates students at Davis College of Agriculture, Natural Resources and Design (DCANRD). In this position I provide consultations about aspects of statistical design, surveys, laboratory, greenhouse, field and clinical trials, as well as individual training in data preparation and analyses for DCANRD graduate students conducting thesis and dissertation research. I conduct and report results of specific statistical analyses, I assist with statistical aspect of reviewing manuscripts and with manuscript preparation. In addition, as a member of the reproductive physiology graduate faculty I mentor graduate students through my serving on MS and PhD committees and participate in college seminars and journal clubs.

Secondary focus of my work is my research collaboration with John Barnett, as an adjunct faculty at Department of Microbiology, Immunology, and Cell Biology (DMICB) at WVU, on evaluation of mammalian immune system and its function in response to xenobiotic agents. Specifically, we are testing sex-specific effect of prenatal exposure to pesticide atrazine, also heavy metal cadmium on immune function in mice, through mimicking mainly environmental exposure from drinking water. My additional collaborative effort is determination of sex-specific effects of herbicide propanil on interactions of immune and reproductive functions in mice. I am involved in a current project including the PIs, immunologist Rosana Schafer and Jennifer Franko (DMICB) as well as reproductive physiology expert, Robert Dailey at Division of Animal and Nutritional Sciences.

B. Positions and Honors

Positions and Employment

ACTIVITY/ OCCUPATION	START DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/ COMPANY	SUPERVISOR/ EMPLOYER
Data analyst	03/1995	08/1995	Dairy Agriculture	Holstein Association of Slovak Republic	Juraj Heyder
Graduate Teaching Assistant	08/1995	12/1998	Statistics	West Virginia University	Stanley Wearden, Ph.D.
Graduate Research Assistant	01/1999	07/2007	Reproductive Physiology	West Virginia University	Robert Dailey, Ph.D.
Postdoctoral Fellow	08/2007	03/2010	Reproductive Physiology, Immunology	West Virginia University	Robert Goodman, Ph.D.
Research Associate	03/2010	06/2012	Immunology	West Virginia University	John Barnett, Ph.D.
Research Assistant Professor	07/2012	10/2013	Immunology	West Virginia University	John Barnett, Ph.D.
Statistician	10/2013	present	Statistics	West Virginia University	Matthew Wilson, Ph.D.
Adjunct Assistant Professor	10/2013	present	Immunology	West Virginia University	John Barnett, Ph.D.

Academic and Professional Honors

1994 Samantha Smith Memorial Exchange Program Fellowship, West Virginia University – Slovak University of Agriculture, Slovakia
1995-1998 West Virginia University Graduate Teaching Assistantship, Statistics
1998 Outstanding Graduate Teaching Assistant Award, West Virginia U., Morgantown,
1999-2007 West Virginia University Graduate Research Assistantship, Reproductive Physiology

Professional Development

Live Webcast Classes:

- JMP Software® Analyzing Multidimensional Data by Di Michelson 9/17/14
- JMP Software® Modeling Multidimensional Data by Di Michelson 12/08/16
- JMP Software® Partial Least Squares: When Ordinary Least Squares Regression Just Won't Work, by Peter Bartell 06/28/18
- Ingenuity Pathway Analysis, Qiagen Bioinformatics, by Lynne Mullen, Ph.D. (series of three workshops) May 2019

Graduate Level Semester-long Class (in-classroom):

- Genomic Data Analysis (BIOL493L/593L), West Virginia University 08/22/19 – 12/12/19

C. Contributions to Science

1. Atrazine and its metabolites are present at high levels in a high percentage of water supplies in agro-intensive areas. Given that humans in these areas drink water from these contaminated sources, we investigate the long-term effects of short term - prenatal and neonatal exposure to atrazine on the immune system by having pregnant Balb/C dams drink water with 1250 ppb atrazine per day from day 10 post-coitus to day 10 postpartum. All offspring were allowed to nurse their natural mother and were segregated by sex and exposure at weaning. At 6 months of age, upon immunization with heat-killed *Streptococcus pneumoniae*, the serum IgG antibody response against the T independent antigen phosphorylcholine was significantly higher in male, but not female, atrazine-exposed offspring compared to vehicle-treated controls. In addition, when

splenocytes of offspring were stimulated *ex vivo* with anti-CD3 and anti-CD28 antibodies, decrease in interleukin (IL)- 2, tumor necrosis factor-α (TNF-α), IL-17A and interferon-γ (IFN-γ) were found in atrazine-exposed male, but not female mice, compared to their respective controls. In this research long term changes in immune cell phenotype have been documented after a prenatal and neonatal exposure to atrazine and it demonstrates that these early life exposures can result in permanent changes to the immune system.

Long-term Immunotoxic Effects of Oral Prenatal and Neonatal Atrazine Exposure. **I. Holásková,** M Elliott, K Brundage, E Lukomska, R Schafer, and John B Barnett. 2019. Toxicological Sciences 2019 Apr 1;168(2):497-507. PMCID: PMC6432865

2. The adverse effect of cadmium exposure on the immune response in adults among others include increase in inflammatory cytokine TNF-α, induced apoptosis of immune cells, damage to thymus and changes in proliferative rate of thymocytes. However, effect of cadmium (Cd) exposure during gestation on immune system of offspring was not known. The long term effects of prenatal exposure to a xenobiotic are often different from those induced by an adult exposure. We discovered that prenatal exposure to cadmium (10 ppm in drinking water) modified the offspring's thymocyte (d0) and splenocyte (d14 & 49) phenotypes and the *ex vivo* splenocyte cytokine profile suggested that Th1 cells are affected while Th2 cells are not. At 7 weeks of age, IL-2 production by stimulated splenocytes was decreased in Cd-exposed males while IFN-γ production was decreased from both male and female Cd-exposed offspring. Our findings demonstrated low concentration of Cd during gestation can result in long term detrimental effects on the immune system of the offspring and the effect were to some extent sex-specific.

Prenatal cadmium exposure produces persistent changes to thymus and spleen cell phenotypic repertoire as well as the acquired immune response. **Holásková I**, Elliott M, Hanson ML, Schafer R, Barnett JB. Toxicol Appl Pharmacol. 2012 Dec 1;265(2):181-9. doi: 10.1016/j.taap.2012.10.009. Epub 2012 Oct 23. PMCID: PMC3508345

Prenatal cadmium exposure alters postnatal immune cell development and function. Hanson ML, **Holásková I**, Elliott M, Brundage KM, Schafer R, Barnett JB.
Toxicol Appl Pharmacol. 2012 Jun 1;261(2):196-203. doi: 10.1016/j.taap.2012.04.002. Epub 2012 Apr 11. PMCID: PMC3358511

3. My contribution with propanil, a broad–leaf herbicide, focused on finding that the XX sex chromosome complement, not known hormonal regulation, is mediating the sexual dimorphism in immune response, when mice were exposed to propanil.

The XX Sex Chromosome Complement is Required in Male and Female Mice for Enhancement of Immunity Induced by Exposure to 3,4-Dichloropropionanilide.**Holásková I**, Franko J, Goodman RL, Arnold AP, Schafer R. Am J Reprod Immunol. 2015 Aug;74(2):136-47. doi: 10.1111/aji.12378. Epub 2015 Mar 12. PMCID: PMC4496308

The toxicity of the N-hydroxy and 6-hydroxy metabolites of 3,4-dichloropropionanilide does not depend on calcium release-activated calcium channel inhibition. Lewis TL, **Holásková I**, Barnett JB.
Toxicol Sci. 2013 Feb;131(2):395-405. doi: 10.1093/toxsci/kfs297. Epub 2012 Oct 12. PMCID: PMC3551424

4. Additional work involving propanil was to study how the metabolites of propanil modify inflammation during induced arthritis.

Blair HC, Soboloff J, Robinson LJ, Tourkova IL, Larrouture QC, Witt MR, **Holásková I**, Schafer R, Elliott M, Hirsch R, Barnett JB. Suppression of arthritis-induced bone erosion by a CRAC channel antagonist. Rheumatic and musculoskeletal diseases open. 2016 Jan 8;2(1):e000093 10.1136/rmdopen-2015-000093. eCollection 2016.

5. Contributions in the reproductive physiology include the finding of the site of negative feedback of progesterone in sheep arcuate nucleus and defining the inflammatory response of sheep during early pregnancy to a bacterial challenge.

Breed-specific differences in the immune response to lipopolysaccharide in ewes. Jessalyn M. Hadfield, Elizabeth C. Bowdridge, **Ida Holásková**, Ted H. Elsasser, and Robert A. Dailey. 2018.
J. Anim. Sci. 2018 Sep 29;96(10):4220-4228. doi: 10.1093/jas/sky288. PMCID: PMC6162594

Evidence that the arcuate nucleus is an important site of progesterone negative feedback in the ewe.
Goodman RL, **Holásková I**, Nestor CC, Connors JM, Billings HJ, Valent M, Lehman MN, Hileman SM.
Endocrinology. 2011 Sep;152(9):3451-60. doi: 10.1210/en.2011-0195. Epub 2011 Jun 21. PMCID: PMC3159787

Tumor necrosis factor-alpha and acute-phase proteins in early pregnant ewes after challenge with peptidoglycan-polysaccharide.
Dow TL, Rogers-Nieman G, **Holásková I**, Elsasser TH, Dailey RA.
Domest Anim Endocrinol. 2010 Aug;39(2):147-54. doi: 10.1016/j.domaniend.2010.04.001. Epub 2010 May 23.

Effect of peptidoglycan-polysaccharide complex on reproductive efficiency in sheep.
Holásková I, Lewis GS, Elliott M, Blemings KP, Dailey RA.
Am J Reprod Immunol. 2004 Sep;52(3):197-203.

D. Additional Information: Research Support and/or Scholastic Performance (last 3 years): N/A