

## Renata Ivanek Miojevic, DVM, MSc, PhD

### PRESENT POSITION AND ADDRESS

Title: Assistant Professor

Address: Department of Veterinary Integrative Biosciences  
College of Veterinary Medicine and Biomedical Sciences  
Texas A&M University, College Station, Texas, USA 77843-4458  
Tel: +1-979-862-4819; Fax: +1-979-847-8981; Email: [rivanek@cvm.tamu.edu](mailto:rivanek@cvm.tamu.edu)

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### EDUCATION

Degree	Conferring Institution	Field of Study	Year
D.V.M.	Faculty of Veterinary Medicine, University of Zagreb (Croatia)	Veterinary Medicine	1997
M.Sc.	Royal Veterinary College & London School of Hygiene and Tropical Medicine, University of London (UK)	Veterinary Epidemiology	2001
Ph.D.	Cornell University (USA)	Comparative Biomedical Sciences	2008

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### PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS

04/98-09/99	<b>General Practice of Veterinary Medicine</b> , Croatia.
09/99-09/00	<b>Veterinary Administrator</b> for Animal Welfare and International Trade of Animals and their Products, State Veterinary Administration, Croatia.
04/02-08/04	<b>Postdoctoral Research Associate</b> , Dept. of Population Med. & Diagnostic Sciences, College of Veterinary Medicine, Cornell University.
08/04-07/08	<b>Graduate Research Assistant</b> , Dept. of Population Med. & Diagnostic Sciences, College of Veterinary Medicine, Cornell University.
10/05-10/05	<b>Risk analyst</b> -University of California, Davis.
08/08-01/09	<b>Postdoctoral Research Associate</b> , Dept. of Population Med. & Diagnostic Sciences, College of Veterinary Medicine, Cornell University.
01/09-	<b>Assistant Professor</b> , Veterinary Integrative Biosciences, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University.
12/09-	<b>Joint Assistant Professor</b> , Epidemiology and Biostatistics, School of Rural Public health, Texas A&M Health Science Center.

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### AWARDS & DISTINCTIONS

**2000**; M.Sc. scholarship: Croatian Ministry of Agriculture and Forestry, and the World Bank.

**2001-present**; Membership in MENSA.

**2005**; Phi Zeta- Honor Society of Veterinary Medicine, 2<sup>nd</sup> place.

**2008**; Mark Gearhart Graduate Student Award (\$1,000).

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### TEACHING

2004, June 14-19	Cornell University. 2004 Summer Program “Tools for Infectious-Disease Epidemiology: Diagnosis, Modeling and Risk”
Summer 2005	Cornell University. Instruction in Infectious Disease Modeling to students in the Leadership Program for Veterinary Students.
2006, 2007	Cornell University. Selected topics in course “Advanced Methods in Epidemiology” (VTPMD 666)
2008, August 11-13	Cornell University. 2008 Summer Program “Tools for Infectious-Disease Epidemiology: Diagnosis, Modeling and Risk”
Fall, 2009	Texas A&M University, Directed studies, VIBS 685–624: Introduction to

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Spring, 2010	modeling of infectious disease transmission dynamics. (1 credit) Texas A&M University, Directed studies, VIBS 685–624: Statistical analysis of spatially referenced data in R (2 credits)
Spring, 2010	Texas A&M University, Seminar- 24898 - VIBS 681–624: Epidemiology Seminar Series (1 credit)

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## GRADUATE STUDENTS

Name	Degree	Advisor or Committee Member	Dates
Rachana Dhungel	MSc (Epidemiology)	Committee Member	2009-present
Raju Gautam	PhD (Biomedical Sciences)	Major Professor	2009-present
Sang-shin Park	PhD (Biomedical Sciences)	Major Professor	2010-present

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## RESEARCH/SCHOLARLY ACTIVITIES:

### Current Research Funding

**NSF** - EF-0913367 - Ecology of Infectious Diseases, **PI: R. Ivanek**, 2009-2012:

“Collaborative research: Transmissibility of infections caused by intermittently shed pathogens capable of environmental persistence. Relating theory and empirical data”.

With D. Dopfer and C. Kaspar. Funded under the American Recovery & Reinvestment Act of 2009. Total budget: **\$1.4 million**.

**US Dept. of Homeland Security** - FAZD Center New & Emerging Issues, **PI: R. Ivanek**, 2010–2011:

"Effect of meteorological and environmental factors on the probability of avian influenza viruses carriage by wild birds"

With B. Lupiani (PI). Budget: **\$59,640**.

**USDA-NIFA-AFRI** – 2010-65207-20616 - Food Safety and Epidemiology, **PI: R. Ivanek**, 2010-2013:

“Integrating national resource information and food system signals to identify novel methods for control of microbial contamination in spinach”.

With K. Nightingale and J. Anciso. Budget: **\$299,874**.

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## REFEREED ARTICLES

- Ivanek, R.**, Gröhn, Y.T., Tauer, L. W., and Wiedmann, M.: The total cost and benefit of *Listeria monocytogenes* food safety measures. **Critical Reviews in Food Science and Nutrition** 2004, 44: 513-523. (web page <http://aem.cornell.edu/research/wp.htm>).
  - Ivanek, R.**, Snary, E. L., Cook, A.J.C., and Gröhn, Y.T.: A mathematical model for the transmission of *Salmonella* Typhimurium within a grower-finisher pig herd in Great Britain. **Journal of Food Protection**, 2004, 67: 2403-2409.
  - Ivanek, R.**, Gröhn, Y.T., Wiedmann, M., and Wells, M.T.: A mathematical model of *Listeria monocytogenes* cross-contamination in a fish processing plant. **Journal of Food Protection**, 2004, 67: 2688-2697.
  - Hu, Y., Gall, K., Ho, A. J., **Ivanek, R.**, Gröhn, Y. T., and Wiedmann, M. Daily variability of *Listeria* contamination patterns in a cold-smoked salmon processing operation. **Journal of Food Protection**, 2006, 69: 2123-2133.
  - Ivanek, R.**, Gröhn, Y.T., Wiedmann, M.: *Listeria monocytogenes* in multiple habitats and host populations: review of available data for mathematical modeling. **Foodborne Pathogens and Disease**, 2006, 3(4):319-336.
  - Ivanek, R.**, Gröhn, Y.T., Ho, A. J., and Wiedmann, M.: Markov chain approach to analyze the dynamics of pathogen fecal shedding -Example of *Listeria monocytogenes* shedding in a herd of dairy cattle. **Journal of Theoretical Biology**. 2007, 245: 44–58.
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7. Tauer, L. W., Nightingale, C.R., **Ivanek, R.**, Gröhn, Y.T., and Wiedmann, M.: Optimal levels of inputs to control *Listeria monocytogenes* contamination at a smoked fish plant. **Agribusiness: an International Journal**, 2007, 23(2): 229-244.
  8. McGann, P., **Ivanek, R.**, Wiedmann, M. and Boor, K.J.: Temperature-dependent expression of *Listeria monocytogenes* internalin and internalin-like genes suggests functional diversity for these proteins among the listeriae. **Applied & Environmental Microbiology**, 2007, Vol. 73(9): 2806-2814.
  9. Ho, A.J., **Ivanek, R.**, Gröhn, Y.T., Nightingale, K.K., and Wiedmann M.: *Listeria monocytogenes* fecal shedding in dairy cattle shows high levels of day-to-day variation and includes outbreaks and sporadic cases of shedding of specific *L. monocytogenes* subtypes. **Preventive Veterinary Medicine**, 2007, 80:287-305.
  10. Gröhn, Y., Hertl, J., **Ivanek, R.**, Abou-Zeid, K., and Wiedmann M.: How University Researchers Can Contribute to Farm-to-Table Risk Assessments: *Listeria monocytogenes* as an Example. **Foodborne Pathogens and Disease** 2007, 4(4): 527-537.
  11. Lanzas, C., Brien, S., **Ivanek, R.**, Lo, Y., Chapagain, P. P., Ray, K.A., Ayscue, P., Warnick L. D. and Gröhn Y.T.: The effect of heterogeneous infectious period and contagiousness on the dynamics of *Salmonella* transmission. **Epidemiology and Infection** 2008, 16:1-15.
  12. Mc Gann, P., Raengpradub, S., **Ivanek, R.**, Wiedmann, M. and Boor, K. J. Differential regulation of *Listeria monocytogenes* internalin and internalin-like genes by sigma B and PrfA as revealed by subgenomic microarray analyses. **Foodborne Pathogens and Disease**, 2008, 5(4): 417-435.
  13. **Ivanek, R.**, Gröhn, Y.T., Wells, M.T., Raengpradub, S., Kazmierczak, M.J., and Wiedmann, M. Extreme value theory in analysis of differential expression in microarrays where either only up- or down-regulated genes are relevant or expected. **Genetics Research**, 2008, 90: 347-361.
  14. Lanzas, C., Warnick, L.D., **Ivanek, R.**, Ayscue, P., Nydam, D. and Gröhn, Y.T. The risk and control of Salmonella outbreaks in calf-raising operations: a mathematical modeling approach. **Veterinary Research**, 2008, 39:61.
  15. Pradhan, A.K., **Ivanek, R.**, Gröhn, Y.T., Geornaras, I., Sofos, J., and Wiedmann M.: Quantitative Risk Assessment for *Listeria monocytogenes* in Selected Categories of Deli Meats: Impact of Lactate-Diacetate on Listeriosis Cases and Deaths. **Journal of Food Protection**, 2009, 72(5): 978-989.
  16. Ayscue P., Lanzas C., **Ivanek R.**, and Gröhn Y.T.: Modeling On-Farm *Escherichia coli* O157:H7 Population Dynamics. **Foodborne Pathogens and Disease**, 2009, 6(4): 461-470.
  17. Alexander, K. A., Warnick, L. D., Cripps, C. J., McDonough, P. L., Gröhn, Y. T., Wiedmann, M., Reed, K. E., James, K. L., Soyer, Y., and **Ivanek, R.**: Fecal shedding of, antimicrobial resistance in, and serologic response to *Salmonella* Typhimurium in dairy calves. **JAVMA**, 2009, 235(6): 739-748.
  18. **Ivanek, R.**, Gröhn, Y.T., Lembo Jr, A.J., Sauders, B.D. and Wiedmann, M.: Modeling of spatially referenced environmental and meteorological factors influencing the probability of *Listeria* spp. isolation from natural environments. **Applied & Environmental Microbiology**, 2009, 75(18): 5893-5909.
  19. Lanzas, C., Ayscue, P., **Ivanek, R.**, and Gröhn, Y.T. Model or Meal? Farm animal populations as models for infectious diseases of humans. **Nature Reviews Microbiology**, 2010, 8: 139-148. February issue, doi:10.1038/nrmicro2268. *Article featured on the journal cover*
  20. Pradhan, A.K., **Ivanek, R.**, Gröhn, Y.T., Bukowski, R., Geornaras, I., Sofos, J., and Wiedmann M.: Quantitative Risk Assessment of Listeriosis-associated Deaths due to *Listeria monocytogenes* Contamination of Deli Meats Originating from Manufacture and Retail. **Journal of Food Protection** (In press).
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#### NON PEER-REVIEWED PUBLICATIONS, ABSTRACTS, PRESENTATIONS

1. **Ivanek, R.**, Snary, E.L. and Cook, A.J.C. (2002): A quantitative risk assessment for the transmission of *Salmonella* Typhimurium within a grower-finisher pig herd. *In Proc. International Symposium Salmonella and Salmonellosis*. P Colin and G Clement, eds.
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- ZOPOLE, St-Brieuc, France. pp 283-287. Oral presentation.
2. **Ivanek, R.**, Grohn, Y.T., Snary, E.L., and Cook, A.J.C. 2005.: *Salmonella* Typhimurium Transmission within a Grower-finisher Pig Herd in Great Britain. **Feedinfo News Service Scientific Reviews**. April 2005.
  3. **Ivanek, R.**, Grohn, Y.T., Wells, M.T., Wiedmann, M., Kazmierczak, M.J. (2006) Background correction and normalization for cDNA microarray data. Proceedings of the **ISVEE 11**, 350. Poster presentation.
  4. **Ivanek, R.**, Grohn, Y.T., Ho, A.J.J., Wiedmann, M. (2006): A predictive model of *Listeria monocytogenes* fecal shedding in a dairy herd. Proceedings of the **ISVEE 11**, 349. Short oral presentation.
  5. **Ivanek, R.**, Gröhn, Y.T., Wells, M.T., Raengpradub, S., Kazmierczak, M.J., and Wiedmann, M. 2007: Extreme Value Theory in Analysis of Differential Expression in Microarray Experiments where only Up- or Down-Regulated Genes are Expected. **The 5th Annual Biological & Biomedical Sciences Graduate Program Symposium**. Cornell University, Oral presentation.
  6. **Ivanek, R.**, Gröhn, Y.T., Lembo Jr, A.J., Sauders, B.D. and Wiedmann, M. 2008: Modeling of spatial and meteorological factors influencing *Listeria* isolation from natural environments. **CRWAD 2008**. Oral presentation.
  7. **Ivanek, R.**, Gröhn, Y.T., Ho, A. J., and Wiedmann, M. 2008: Markov Chain approach to analyze the dynamics of pathogen fecal shedding – example of *Listeria monocytogenes* shedding in dairy cattle. **CRWAD 2008**. Oral presentation.
  8. **Ivanek, R.**, Gröhn, Y.T., Wells, M.T., Raengpradub, S., Kazmierczak, M.J., and Wiedmann, M. 2008: Extreme value theory in analysis of differential expression in microarrays where either only up- or down-regulated genes are relevant or expected. **CRWAD 2008**. Oral presentation.
  9. **Ivanek, R.**, Gröhn, Y.T., Wiedmann, M., and Wells, M.T.: Modeling *Listeria monocytogenes* cross-contamination dynamics within a quantitative risk assessment. **Society for Risk Analysis Annual Meeting 2009**. Baltimore, USA. Oral presentation.

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#### **SERVICE ACTIVITIES:**

##### Professional Organizations:

- 2008 - Member, Association for Vet. Epidemiology and Preventive Medicine (AVEPM)  
2009- Member, American Society for Microbiology (ASM)  
2009- Member, Society for Mathematical Biology (SMB)

##### Manuscript Review of Journals:

- International Journal of Risk Assessment and Management on a special issue on the “Risk assessment and management of Biological systems”
- Journal of Food Safety
- Theoretical Population Biology
- Journal of Food Protection
- Journal of Dairy Science
- Zoonoses and Public Health
- Journal of Theoretical Biology

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#### **OTHER SCHOLARLY ACTIVITIES:**

##### Invited presentations:

1. Grohn, Y.T. and Ivanek, R. 2003: Stochastic mathematical modeling of *Listeria monocytogenes* contamination in a ready-to-eat fish processing plant. U.S. FDA. College Park, MD, USA.
  2. Ivanek, R. 30 March, 2009. Markov Chain approach to analyze the dynamics of pathogen fecal shedding – example of *Listeria monocytogenes* shedding in dairy cattle. The Royal Veterinary College Veterinary Epidemiology Alumni Seminar, The Royal Veterinary College, London, UK.
  3. Ivanek, R. 23 October, 2009. Epidemiology of infectious and foodborne diseases. Department of Epidemiology and Biostatistics, School of Rural Public Health, Texas A&M University, USA.
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4. Ivanek, R. 03 February, 2010. Extreme value theory in analysis of microarrays. Training Program in Bioinformatics, Texas A&M University, USA.
  5. Ivanek, R. 18 February, 2010. Epidemiology of infectious and foodborne diseases: Example of modeling of spatially referenced environmental and meteorological factors influencing the probability of *Listeria* spp. isolation from natural environments Ruđer Bošković Institute, Croatia.

Professional training:

May 9 and May 10, 2003; “Bayesian modeling and WinBUGS” University of California, Davis.

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