

MARGARET KURZIUS-SPENCER

Curriculum vitae

Assistant Professor
Department of Pediatrics, Medical and Molecular Genetics
University of Arizona College of Medicine
1501 N Campbell Ave.
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Tucson, AZ 85724
520-626-5174 (office)

Chronology of Education

- May 1975 Prescott College, Prescott, AZ
B.A. (Natural History)
- Aug 1981 University of Nevada, Las Vegas, NV
M.S. (Biology)
Thesis Director: Dr. Wesley Niles
Thesis Title: *Vegetation and Flora of the Grapevine Mountains, Death Valley National Monument (California-Nevada)*
- May 1997 University of Arizona (UA), Tucson, AZ
M.P.H. (Epidemiology).
Internship Director: Dr. John Galgiani
Internship Report: *Valley Fever Center for Excellence Public Education*
- May 2012 UA, Mel and Enid Zuckerman College of Public Health, Tucson, AZ
Ph.D. Epidemiology, Minor: Genetics
Dissertation Advisor: Dr. Robin Harris
Dissertation Title: *Modeling the Effects of Dietary Arsenic and Nutrient Intake on Urinary Arsenic Biomarkers*

Continuing Education

- Summer 2000 Short-course, Statistical Analysis for Genetic Epidemiology, Case Western Reserve University, Human Genetic Analysis Program
- June 2008 NIOSH Spirometry Training, 2-day course, Phoenix Fire Department Health Center
- 08/11/2010 Completion of HIPAA and BioMed CITI Protection of Human Research Subjects refresher courses
- 09/06/2012 Completion of Conflict of Interest (COI) Training Course
- 12/14/2012 Completion of Social & Behavioral CITI course

Chronology of Employment

1975-1993	Freelance nature and scientific illustrator, photographer, graphic artist
09/78-05/81	Graduate Research Assistant. Cooperative National Park Resources Studies Unit, University of Nevada, Las Vegas (UNLV)
01/79-12/80	Teaching Assistant, UNLV, Biology Department
06/81-07/82	Graduate Research Assistant. University of Arizona (UA), School of Renewable Natural Resources
07/81-08/82	Teaching Associate, UA, School of Renewable Natural Resources
08/82-09/86	Assistant Biologist, UA, Ecology and Evolutionary Biology
09/86-04/96	Full-time mom, children born in 1986 and 1991.
04/96-12/96	Public Outreach, Valley Fever Center for Excellence
12/96-06/00	Research Specialist, UA, Arizona Respiratory Center
06/00-06/04	Research Specialist, Sr., UA, Arizona Respiratory Center
08/05-12/05	Teaching Assistant, UA, Mel & Enid Zuckerman College of Public Health MEZCOPH
06/04-12/08	Research Specialist, Sr., UA, Arizona Respiratory Center
06/04-12/08	Research Specialist, Sr., UA, MEZCOPH
01/09-08/12	Associate Research Scientist, UA, College of Medicine, Arizona Respiratory Center
01/09-11/12	Associate Research Scientist, UA, MEZCOPH, Community, Environment and Policy
11/12--	Assistant Professor, UA, College of Medicine, Department of Pediatrics, Medical and Molecular Genetics

Honors & Awards

Jan 2008	General Scholarship Award, UA, MEZCOPH
Mar 2008	Best Poster, 8 th Annual Epidemiology in Arizona Forum, UA, MEZCOPH
April 2008	Staff Award for Excellence, Outstanding MEZCOPH Research Employee, UA, Arizona Health Sciences Center
July 2008	Elected, Alpha Nu Chapter of Delta Omega, National Public Health Honorary Society
Feb 2010	General Scholarship Award, UA, MEZCOPH
June 2010	Visiting Scholar, Statistical Genetics, Case Western Reserve University, supervisor: Dr. Robert Elston
May 2011	Georgia Reynolds Dedicated Service Award, UA, Arizona Health Sciences Center
Feb 2012	Article elected, Editor's Choice Series, Pediatric Allergy and Immunology

Service/Outreach

2007-2009	MEZCOPH, Epidemiology Forum Committee
2008-2009	MEZCOPH, Student Affairs Committee
2009	MEZCOPH, Fall Internship Conference Judge
2010-2011	UA Graduate and Professional Student Council, Travel Grants Judge
2011	51 Homes, Tucson, AZ, Interviewer
2010--	UA Arizona Assurance Scholars Program, Mentor
2005--	<i>Pediatric Allergy and Immunology</i> , Reviewer
2012--	<i>Environmental Health Perspectives</i> , Reviewer
2012--	MEZCOPH, IRB Scholarly Review Committee

Publications/Creative Activity➤ ***Peer-reviewed manuscripts published/accepted***

1. Brown JH, **Kurzius M**. Biogeography of community composition: combinations of coexisting desert rodent species. *Annales Zoologici Fennici* 1987; 24: 227-238.
2. Brown JH, **Kurzius M**. 1989. Spatial and temporal variation in guilds of North American granivorous desert rodents. *In: Patterns and the Structure of Mammalian Communities* (DW Morris, Z Abramski, BT Fox, and MR Willing, Eds.), pp. 71-90. *Special Publication of the Museum, Texas Tech University* 28, Lubbock, Texas.
3. Sherrill DL, Stein R, **Kurzius-Spencer M**, Martinez FD. On early sensitization to allergens and development of respiratory symptoms. *Clinical and Experimental Allergy* 1999; 29(7): 905-911.
4. **Kurzius-Spencer M**, Holberg CJ, Martinez FD, Sherrill DL. Familial correlation and segregation analysis of forced expiratory volume in one second (FEV₁), with and without smoking adjustments, in a Tucson population. *Annals of Human Biology* 2001; 28(2):222-34.
5. **Kurzius-Spencer M**, Sherrill DL, Holberg CJ, Martinez FD, Lebowitz MD. Familial correlation in the decline of forced expiratory volume in one second. *American Journal of Respiratory and Critical Care Medicine* 2001 Oct 1; 164(7): 1261-1265.
6. Oddy WH, Halonen M, Martinez FD, Lohman IC, Stern DA, **Kurzius-Spencer M**, Guerra S, Wright AL. TGF-beta in human milk is associated with wheeze in infancy. *Journal of Allergy and Clinical Immunology* 2003 Oct; 112(4):723-728.
7. **Kurzius-Spencer M**, Holberg CJ, Sherrill DL, Carrozzi L, Di Pede F, Baldacci S, Viegi G. Segregation analysis of bronchial hyperresponsiveness in a general population in northern Italy. *American Journal of Medical Genetics* 2004; 125A(3):232-239.

8. **Kurzius-Spencer M**, Wind S, Van Sickle D, Martinez P, Wright AL. Presentation and treatment of asthma among Native children in southwest Alaska delta. *Pediatric Pulmonology* 2005 Jan; 39(1):28-34.
9. **Kurzius-Spencer M**, Halonen M, Lohman IC, Martinez FD, Wright AL. Prenatal factors associated with the development of eczema in the first year of life. *Pediatric Allergy and Immunology* 2005; 16:19-26.
10. Josyula AB, Poplin GS, **Kurzius-Spencer M**, McClellan HE, Kopplin MJ, Sturup S, Lantz CR, Burgess JL. Environmental arsenic exposure and sputum metalloproteinase concentrations. *Environ Res* 2006; 102:283-290.
11. Josyula AB, McClellan H, Hysong TA, **Kurzius-Spencer M**, Poplin GS, Sturup S, Burgess JL. Reduction in total inorganic urinary arsenic with provision of bottled water. *Journal of Health, Population and Nutrition* 2006; 24:298-304.
12. Josyula AB, **Kurzius-Spencer M**, Littau SR, Yucesoy B, Fleming J, Burgess JL. Cytokine genotype and phenotype effects on lung function decline in firefighters. *J Occup Environ Med* 2007 Mar; 49(3):282-288.
13. Burgess JE, Fleming JE, Mulenga EM; Josyula A, Hysong TA, Joggerst PJ, **Kurzius-Spencer M**, Miller HB. Acute changes in sputum IL-10 following underground exposure to diesel exhaust. *Clinical Toxicology* 2007; 45(3):255-260.
14. **Kurzius-Spencer M**, Foster K, Littau S, Richey KJ, Clark BM, Sherrill D, Goodman RB, Boitano S, Burgess JL. Tracheobronchial markers of lung injury in smoke inhalation victims. *Journal of Burn Care and Research* 2008; 29(2):311-318.
15. Poplin GS, Miller HD, Ranger-Moore J, Bofinger CM, **Kurzius-Spencer M**, Harris RB, Burgess JL. An International Evaluation of Injury Rates in Coal Mining: A Comparison of Risk and Compliance Based Regulatory Approaches. *Safety Science* 2008; 46:1196-1204.
16. Yucesoy B, **Kurzius-Spencer M**, Johnson VJ, Fluharty K, Kashon ML, Guerra S, Luster MI, Jefferey L, Burgess, MD, MPH. Association of cytokine gene polymorphisms with rate of decline in lung function. *JOEM* 2008; 50:642-648
17. Guerra S, Sherrill DL, **Kurzius-Spencer M**, Venker C, Halonen M, Quan SF, Martinez FD. The course of persistent airflow limitation in subjects with and without asthma. *Respir Med* 2008; 102(10):1473-82.
18. **Kurzius-Spencer M**, Foster K, Littau S, Richey KJ, Clark BM, Sherrill D, Boitano S, Caruso DM, Burgess JL. Tracheobronchial protease inhibitors are associated with body surface area burns and mortality in smoke inhalation patients. *Journal of Burn Care and Research* 2009; 30(5):824-831.
19. **Kurzius-Spencer M**, Guerra S, Sherrill DL, Halonen M, Elston RC, Martinez FD. Familial aggregation of allergen-specific sensitization and asthma. *Pediatr Allergy Immunol* 2012; 23:21-27 (Editor's Choice Series, Feb 2012). (PMID:22017397)
20. Burgess JL, **Kurzius-Spencer M**, Gerkin RD, Fleming JL, Peate WF, Allison M. Risk factors for subclinical atherosclerosis in firefighters. *J Occup Environ Med* 2012; 54:328-335. (PMID 22371058)

21. Burgess JL, Duncan MD, Hu C, Littau SR, Caseman D, **Kurzius-Spencer M**, Davis-Gorman G, McDonagh PF. Acute cardiovascular effects of firefighting and active cooling during rehabilitation. *J Occup Environ Med* 2012 (54):1413-1420.
22. **Kurzius-Spencer M**. 2012. Modeling the effects of dietary arsenic and nutrient intake on urinary arsenic biomarkers. Ph.D. Dissertation, University of Arizona. 269 pp.
23. Burgess JL, **Kurzius-Spencer M**, O'Rourke MK, Littau SR, Roberge J, Meza-Montenegro MM, Gutierrez-Millan LE, Harris RB. Environmental arsenic exposure and serum matrix metalloproteinase-9. *J Exp Sci and Environ Epidemiol* 2013; 23:163-169.
24. **Kurzius-Spencer M**, O'Rourke MK, Hsu C-H, Hartz V, Harris RB, Burgess JL. Measured versus modeled dietary arsenic and relation to urinary arsenic excretion and total exposure. *J Exp Sci and Environ Epidemiol* 2013:1-8.
25. Burgess JL, **Kurzius-Spencer M**, Poplin GS, Littau SR, Kopplin MJ, Sturup S, Boitano S, Lantz RC. Environmental Arsenic Exposure, Selenium and Sputum Alpha-1 Antitrypsin. *J Exp Sci and Environ Epidemiol* (accepted, Apr 2013).
26. **Kurzius-Spencer M**, Burgess JL, Harris RB, Hartz V, Roberge J, Huang S, Hsu C-H, O'Rourke MK. Contribution of diet to aggregate arsenic exposures--An analysis across populations. *J Exp Sci and Environ Epidemiol* (accepted, Apr 2013).

➤ **Other publications/creative activity:**

Kurzius M. Prescott Community Nature Center Woodland Trail Guide. 1976. 30 pages, illustrations and text.

Kingsley K and **Kurzius M**. Desert Ramblings. Weekly newspaper column in The Wickenburg Sun on desert natural history subjects. 1973-1978.

Kurzius M. Birds of the Lake Mead National Recreation Area. Lake Mead National Recreation Area Technical Report No. 1. Illustrations. 1978.

Kurzius M, Kingsley K. Brief Magic: A Desert Pond. *Defenders of Wildlife Magazine*, Vol. 53 No. 6, pp. 318-324. December 1978. Article and photographs.

Kingsley K, **Kurzius M**. The Packrat's Palace. *Defenders of Wildlife Magazine*, Vol. 53 No. 4, pp. 196-201. August 1978. Article, illustrations, photographs.

Kingsley K, **Kurzius M**. The Hole in the Cactus. *Defenders of Wildlife Magazine*, Vol. 54 No.3, pp.148-152. June 1979. Article and photographs.

Kurzius M. Life in a Stock Tank. Pp. 251-255, in *The Naturalists' Directory and Almanac (International)*, 43rd Edition, 1979-1980, World Natural History Publications, Baltimore, Maryland. 1980. Article and photographs.

- Kurzius M.** Vegetation and flora of the Grapevine Mountains, Death Valley National Monument, California-Nevada. National Park Service Contribution No. CPSU/UNLV 017/06. 1981. 289 pp.
- Kurzius M.** A guide to the threatened and endangered vascular plants of the Lake Mead National Recreation Area. Lake Mead National Recreation Area Technical Report No. 4. Distribution maps and botanical illustrations. 1980.
- Kurzius M.** Endangered Cactus of the United States. U.S. Fish and Wildlife Service. 10 plates. 1984.
- Kurzius M.** *In:* Brown, L. Grasslands. The Audubon Society Nature Guides series. Alfred A. Knopf: New York. 20 botanical drawings. 1985.
- Kurzius M.** *In:* Whitney, S. Western Forests. The Audubon Society Nature Guides series. Alfred A. Knopf: New York. 85 botanical drawings. 1985
- Kurzius M.** *In:* MacMahon, JA. 1985. Deserts. The Audubon Society Nature Guides series. Alfred A. Knopf: New York. 75 botanical drawings.
- Kurzius M.** *In:* Bowers, JE. Seasons of the wind. Northland Press: Flagstaff. 1986. Botanical illustrations, maps, figures (20 plates).
- Kurzius-Spencer M.** *In:* Familiar Flowers of North America (Western Region). Alfred A. Knopf, Inc., N.Y. 1987. Botanical drawings (20 plates).
- Kurzius-Spencer M.** Taylor's guide to shrubs. Houghton Mifflin Co., Boston. 1987. 150 botanical drawings.
- Kurzius-Spencer M.** Brown, BT, SW Carothers, and RR Johnson. Grand Canyon birds. University of Arizona Press: Tucson. 1987. Maps, figures, frontispiece (11 plates).
- Kurzius-Spencer M.** Taylor's guide to trees. Houghton Mifflin Co: Boston. 1988. 70 drawings.
- Kurzius-Spencer M.** Illustrating science: standards for publication. Council of Biology Editors, Inc. 1988. 11 maps, 10 graphs.
- Kurzius-Spencer M.** Taylor's guide to water-saving gardening. 1990. Houghton Mifflin Co: Boston. 27 illustrations.
- Kurzius-Spencer M.** *Valley Fever (Coccidioidomycosis).* Informational brochure produced for the University of Arizona Valley Fever Center for Excellence. 1996.

Photographs published in *Arizona Highways*, *Sunset Magazine*, *Defenders of Wildlife*, *Science News*, *Ecology*; maps, graphs and illustrations have appeared in books, journal articles and dissertations.

Scholarly Presentations

- Kurzius-Spencer M.** "Familial correlation in FEV₁ decline." University of Arizona Respiratory Center, March 2001, seminar.
- Kurzius-Spencer M, Wright A, Martinez FD. "Cytokine profiles associated with wheezing in infancy." American Thoracic Society International Conference May 2003, poster-presentation.

Burgess JL, **Kurzius-Spencer M**, Foster K, Littau SR, Richey KJ, Sherrill D, Boitano S. Longitudinal changes and tracheobronchial biomarkers of acute lung injury. North American Congress of Clinical Toxicology 2005. Abstract, poster.

Josyula AB, McClellan HR, **Kurzius-Spencer M**, Littau SR, Lantz RC, Burgess JL. Environmental arsenic exposure and metalloproteinase concentration. American Thoracic Society International Conference 2005. Abstract, poster.

Josyula AB, **Kurzius-Spencer M**, Fleming J, Burgess JL. Sputum cytokines and longitudinal decline in lung function in firefighters. American Thoracic Society International Conference, 2005. Abstract, poster.

Kurzius-Spencer M, Yucesoy B, Guerra S, Kashon ML, Johnson VJ, Luster MI, Burgess JL. Single nucleotide polymorphisms (SNPs) associated with decline in lung function in firefighters. North American Congress of Clinical Toxicology 45th Annual Meeting, 2006. Abstract, poster.

Burgess JL, Foster KN, Littau SR, **Kurzius-Spencer M**, KJ Richey, Josyula AB, Shipitalo RM, Sherrill DL. Use of tracheobronchial suctionate inflammatory markers to predict subsequent lung injury in smoke inhalation victims. NACCT 2006. Abstract, poster

Josyula AB, **Kurzius-Spencer M**, Littau SR, Yucesoy B, Fleming J, Burgess JL. Genotypic and phenotypic effects of sputum cytokines on lung function decline in firefighters. American Thoracic Society International Conference 2007. Abstract, poster.

Kurzius-Spencer M, Yucesoy B, Luster MI, Burgess JL. Polymorphisms in proteases/ antiproteases and lung function decline in firefighters. American Thoracic Society International Conference 2007. Abstract, poster.

Kurzius-Spencer M, Foster K, Littau SR, Richey KJ, Sherrill D, Goodman RB, Boitano S, Burgess JL. Predictive value of tracheobronchial pro- and anti- inflammatory mediator ratios in smoke inhalation victims. North American Congress of Clinical Toxicology (NACCT) 46th Annual Meeting, 2007. Abstract, poster.

Yucesoy B, **Kurzius-Spencer M**, Johnson VJ, Fluharty K, Kashon ML, Guerra S, Luster MI, Burgess JL. Genetic risk factors for accelerated lung function decline over time. American Thoracic Society International Conference 2008. Abstract, poster.

Kurzius-Spencer M, Foster K, Littau SR, Richey KJ, Sherrill D, Boitano S and Burgess JL. Tracheobronchial protease inhibitors in smoke inhalation victims: Early changes and association with body surface area burns. University of Arizona, Biomedical Research Symposium, 2008. Abstract, poster.

Kurzius-Spencer M, Foster K, Littau SR, Richey KJ, Sherrill DL, Boitano S, and Burgess JL. Tracheobronchial protease inhibitors in smoke inhalation victims: Early changes and association with body surface area burns. American Thoracic Society International Conference 2008. Abstract, poster.

Kurzius-Spencer M. Epidemiology Seminar, "Genes and Environment in atopic sensitization and asthma." December 2008. Seminar.

Kurzius-Spencer M, Sherrill DL, Holberg CJ, Guerra S. Familial aggregation of specific skin prick sensitization to *Alternaria* and relation to asthma in two cohort populations. University of Arizona, MEZCOPH, 9th Annual Epidemiology in Arizona Forum, 2009. Abstract, poster.

Burgess JL, **Kurzius-Spencer M**, Littau SR, Roberge J, Shahar E, Meza MM, Gutierrez Millan LE, Kopplin MJ, Harris RB. Urinary arsenic, ethnicity and serum MMP-9: A bi-national study. Society of Toxicology 48th Annual Meeting, 2009. Abstract.

Kurzius-Spencer M. Arizona Respiratory Center, "Familial correlation in skin prick test sensitization to *Alternaria* as compared to other allergens." March 2009. Seminar.

Yucesoy B, **Kurzius-Spencer M**, Johnson VJ, Fluharty K, Germolec DR, Luster MI, Burgess JL. Association of genetic variations in the alpha1-antitrypsin and matrix metalloproteinase genes with lung function decline in a group of firefighters. Society of Toxicology 48th Annual Meeting. 2009. Abstract, poster.

M O'Rourke, **M Kurzius-Spencer**, J Roberge, P Hsu, R Harris, J Burgess. Comparison of measured and modeled methods of assessing dietary arsenic. International Society of Exposure Science Annual Meeting 2009. Abstract, poster.

Kurzius-Spencer, M. Arizona Respiratory Center Familial aggregation of allergen-specific skin tests and asthma. March 2011. Seminar.

Kurzius-Spencer, M. Epidemiology Seminar, "Familial aggregation of allergen-specific skin tests and asthma." April 2011. Seminar.

Kurzius-Spencer M, O'Rourke MK, Roberge J, Hartz V, Burgess JL, Hsu C-H, Harris RB. Contribution of Dietary Arsenic to Excretion of Urinary Arsenic. EPA Conference, Promoting Healthy Communities: Developing and Exploring linkages Between PH Indicators, Exposure and Hazard Data, Sept 2011. Abstract, poster.

Mary Kay O'Rourke, **Margaret Kurzius-Spencer**, Séumas Rogan, Vern Hartz, Robin B. Harris, Paul Hsu, Sadhvi Khanna, Jefferey L. Burgess. Comparisons of Measured and Modeled Dietary Arsenic and Relationships to Urinary Arsenic Totals. EPA Conference, Promoting Healthy Communities: Developing and Exploring linkages Between PH Indicators, Exposure and Hazard Data, Sept 2011. Abstract, poster.

Margaret Kurzius-Spencer. Modeling the Effects of Dietary Arsenic and Nutrient Intake on Urinary Arsenic Biomarkers. Doctoral Defense, Mar 27, 2012.

M Kurzius-Spencer, MK O'Rourke, V Hartz, J Roberge, JL Burgess, C-H Hsu, RB Harris. Contribution of Dietary Inorganic Arsenic to Urinary Arsenic Biomarkers. International Society for Exposure Science 2012. Poster presentation.

Kurzius-Spencer M, O'Rourke MK, Burgess JL, Hsu C-H, Harris RB. Total Ingested Arsenic in U.S. Population Studies. International Society for Exposure Science 2012. Oral presentation.

Kurzius-Spencer M. Relation of Dietary Arsenic and Nutrient Intake to Urinary Arsenic Biomarkers. Cancer Prevention Center, Jan 9, 2013. Seminar.

Current Grants and Contracts

11/01/12-10/31/13

Canyon Ranch Center for Prevention and Health Promotion Pilot/Feasibility Study Grant

Dietary toxicants, trace elements, obesity and type 2 diabetes Total budget \$15K

Role: Principal Investigator (11.46% FTE) Mentor: Elizabeth Jacobs

Develop methods of modeling synergistic and antagonistic effects of dietary toxicants and trace minerals on obesity-related outcomes, generate new hypotheses, and produce preliminary results regarding potential dietary obesogens.

9/01/11-8/31/2014

Centers for Disease Control and Prevention, Cooperative Agreement for Surveillance and Epidemiologic Research of Duchenne and Becker Muscular Dystrophy (Grant # U36/CCU319276, AAMC ID # MM-1064-09/09)

Arizona Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet)

Role: Co-investigator (39.27% FTE) PI: Chris Cunniff

Identification and collection of information on all cases of DBMD from 1982 to present from medical records, birth certificates and interviews with patients and caregivers;

06/01/10-05/31/14

Centers for Disease Control and Prevention, Autism and Developmental Disabilities Monitoring Network
Population-Based Surveillance for Autism Spectrum Disorders

Role: Co-investigator (39.27% FTE) PI: Chris Cunniff

Active surveillance system involving screening and abstraction of records from multiple community data sources, including educational records determining eligibility for special education services, health records including diagnostic and developmental assessments

List of Collaborators on Grants and Publications from Last Five Years

Jefferey L. Burgess, MD, MS. UA, MEZCOPH, Division of Environment, Community and Policy

Robert Elston, PhD, Case Western Reserve University, Statistical Genetics

Stefano Guerra, MD, PhD. UA, Arizona Respiratory Center

Marilyn Halonen, PhD. UA, Arizona Respiratory Center

Robin B. Harris, PhD. UA, MEZCOPH, Epidemiology

Chiu-Hsieh (Paul) Hsu, PhD. UA, MEZCOPH, Biostatistics

Elizabeth Jacobs, PhD. UA, MEZCOPH, Epidemiology

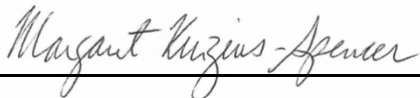
Fernando Martinez, MD. UA, Arizona Respiratory Center

Mary Kay O'Rourke, PhD. UA, MEZCOPH, Division of Environment, Community and Policy

Duane Sherrill, PhD. UA, MEZCOPH, Biostatistics

This is a true and accurate statement of my activities and accomplishments. I understand that misrepresentation in securing promotion and tenure may lead to dismissal or suspension under ABOR Policy 6-201 J.1.b.

Signed:



Margaret Kurzius-Spencer