

COLLEGE OF PUBLIC HEALTH CURRICULUM VITAE

T. Renée Anthony

February 2, 2015

I. EDUCATION AND PROFESSIONAL HISTORY

A. Education

<u>Institution</u>	<u>Dates Attended</u>	<u>Field of Study</u>	<u>Degree Obtained</u>	<u>Degree Date</u>
California Polytechnic State University	1985-1988	Environmental Engineering	BS	1988
University of North Carolina, Chapel Hill	1990-1992	Air Pollution, Radiation, and Industrial Hygiene	MS	1992
University of North Carolina, Chapel Hill	2001-2005	Occupational Hygiene, Exposure Assessment, Fluid Mechanics	PhD	2005

**Certification/Licensure**

<u>Board</u>	<u>Date</u>
American Board of Industrial Hygiene	1994
Board of Certified Safety Professionals	2001

B. Professional and Academic Positions (least to most recent)

<u>Position Title</u>	<u>Dates of Service</u>	<u>Location/Institution</u>
Technical Assistant	1985	Virginia Water Quality Control Board, Richmond, VA
Student Assistant	1986-1987	California Water Quality Control Board, San Luis Obispo, CA
Associate Engineer	1988-1990	Engineering-Science, Inc, Pasadena, CA

<u>Position Title</u>	<u>Dates of Service</u>	<u>Location/Institution</u>
Student Industrial Hygienist	1991	IBM, Research Triangle Park, NC
Industrial Hygienist	1992-1998	International Paper, Memphis, TN
Manager Safety and Health-West	1998-2000	Fort James Corp, Camas, WA
Research Assistant/Research Fellow	2001-2005	University of North Carolina, Chapel Hill, NC
Assistant Professor	2005-2008	Division of Environmental and Community Health, College of Public Health, University of Arizona, Tucson, AZ
Assistant Professor	2014-Present	Department of Occupational and Environmental Health, College of Public Health, University of Iowa, Iowa City, IA
Associate Professor	2014-Present	Department of Occupational and Environmental Health, College of Public Health, University of Iowa, Iowa City, IA

### **C. Honors, Awards, Recognitions, and Outstanding Achievements**

<u>Year</u>	<u>Title</u>
2001-2002	Graduate Assistance in Areas of National Need (GAANN) Fellow
2002	Industrial Hygiene Scholar, 3M
2003-2005	Doctoral Students Training Grant Fellow, NIEHS
2005-2006	Learner Centered Education Grant Participant, University of Arizona
2007	Outstanding Teaching Award for Graduate Teaching, Mel and Enid Zuckerman College of Public Health (MEZCOPH)
2008	Student Section of the Year Award Winner (Faculty Advisor), National AIHA
2010	AIHA Outstanding Committee 2009, Students and Early Career Professionals Volunteer Group (Chair)
2010	Best Seller Publication Award, Mathematical Models for Estimating Occupational Exposure to Chemicals, 2nd Edition (Editor)
2010	Cover image, Annals of Occupational Hygiene, 54(4)

<u>Year</u>	<u>Title</u>
2011	Outstanding Project Team for the Inhalable Sampling Symposium, American Industrial Hygiene Association

## II. TEACHING

### A. Teaching Assignments on a semester-by-semester basis

#### 1. University of Iowa

<u>Semester/Year</u>	<u>Course Title/Number</u>	<u>Semester Hours</u>	<u># Students</u>	<u>Role</u>	<u>Percent Responsible</u>
Fall 2009	175:192 Occupational Safety	3	12	Director	100%
Fall 2009	175:230 Occupational Health	3	16	Co-Director	40%
Spring 2010	175:101 Work, Health and the Environment			Guest Lecturer	
Spring 2010	175:233 Control of Occupational Hazards	3	11	Instructor	20%
Fall 2010	175:230 Occupational Health	3	19	Co-Director	53%
Fall 2010	175:230 Occupational Health	3	19	Co-Director	53%
Spring 2011	175:101 Work, Health and the Environment			Guest Lecturer	
Spring 2011	175:201 Research in Occupational and Environmental Health	1	5	Director	100%
Spring 2011	175:232 Assessing Physical Agent Hazards	3	8	Director	58%
Fall 2011	175:192 Occupational Safety	3	13	Instructor	100%
Fall 2011	175:230 Occupational Health	3	22	Co-Instructor	58%
Spring 2012	175:101 Work, Health and the Environment			Guest Lecturer	

<u>Semester/Year</u>	<u>Course Title/Number</u>	<u>Semester Hours</u>	<u># Students</u>	<u>Role</u>	<u>Percent Responsible</u>
Fall 2012	175:230 Occupational Health	3	20	Co-Instructor	58%
Spring 2013	175:232:001 Assessing Physical Agent Hazards	3	10	Co-Instructor	10%
Spring 2014	OEH:5410 Occupational Safety	3	12	Instructor	100%
Spring 2014	OEH:6110 Rural Health and Agricultural Medicine	3	20	Co-Instructor	11%
Summer 2014	OEH:6110 Rural Health and Agricultural Medicine	3	35	Co-Instructor	9%
Fall 2014	OEH:5620 Occupational Health	3	15	Instructor	70%

## 2. Other Institutions

<u>Semester / Year</u>	<u>Course Title/Number</u>	<u>Semester Hours</u>	<u># Students</u>	<u>Role</u>	<u>Percent Responsible</u>	<u>Institution</u>
Fall 2005	502 Environmental Monitoring and Analysis	3	1	Instructor	62%	University of Arizona
Spring 2006	McNair Achievement Program			Guest Lecturer		University of Arizona
Spring 2006	Survival Skills and Ethics (PSIO 549)			Guest Lecturer		University of Arizona
Spring 2006	575 Environmental and Occupational Health	3	25	Co-Instructor	8%	University of Arizona

<u>Semester / Year</u>	<u>Course Title/Number</u>	<u>Semester Hours</u>	<u># Students</u>	<u>Role</u>	<u>Percent Respon sible</u>	<u>Institution</u>
Spring 2006	582 Advanced Industrial Hygiene	3	2	Director	100%	University of Arizona
Fall 2006	Engineering Sustainable Development (MnE 422: Mining Engineering)			Guest Lecturer		University of Arizona
Fall 2006	502 Environment al and Occupational Health	3	6	Instructor	62%	University of Arizona
Spring 2007	Safety Fundamental s 422/522	3	16	Director	100%	University of Arizona
Spring 2007	Mine Ventilation (MnE 506a)			Guest Lecturer		University of Arizona
Spring 2007	575 Environment al and Occupational Health	3	33	Co-Instructor	8%	University of Arizona
Spring 2007	653 Applied Exposure Assessment	3	5	Director	100%	University of Arizona
Fall 2007	Engineering Sustainable Development (MnE 422), Mining Engineering			Guest Lecturer		University of Arizona
Fall 2007	502 Environment al Monitoring and Analysis	3	6	Instructor	62%	University of Arizona

<u>Semester / Year</u>	<u>Course Title/Number</u>	<u>Semester Hours</u>	<u># Students</u>	<u>Role</u>	<u>Percent Responsible</u>	<u>Institution</u>
Fall 2007	575 Environmental and Occupational Health	3	30	Co-Instructor	8%	University of Arizona
Spring 2008	Safety Fundamentals 422/522	3	22	Director	100%	University of Arizona
Spring 2008	575 Environmental and Occupational Health	3	30	Co-Instructor	8%	University of Arizona
Spring 2008	575 Environmental and Occupational Health	3	30	Co-Instructor	8%	University of Arizona
Fall 2008	502 Environmental Monitoring and Analysis	3	4	Instructor	62%	University of Arizona
Fall 2008	575 Environmental and Occupational Health	3	30	Co-Instructor	8%	University of Arizona

**B. Other Teaching Contributions**

**1. Grand Rounds, Journal Clubs, Seminars**

<u>Year(s)</u>	<u>Title</u>	<u>Location</u>
2008	Engineering Applications in Public Health	Arizona State University
2009	Public Health Applications for CFD: Particulate Exposure and Sampler Design	Chemical and Biochemical Engineering, University of Iowa, Iowa City, IA

**2. Other Contributions to Institutional Programs**

<u>Year(s)</u>	<u>Title</u>	<u>Location</u>
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<u>Year(s)</u>	<u>Title</u>	<u>Location</u>
2014	2 lectures in Agricultural Procedures and Safety	Kirkwood Community College

### 3. Teaching Committees

<u>Year(s)</u>	<u>Committee Name</u>	<u>Location</u>
2006-2008	Judge, Internship Seminar	University of Arizona
2006-2008	MPH Admissions Committee	Mel and Enid Zuckerman College of Public Health, University of Arizona

### 4. Formal Study to Improve Teaching Abilities

<u>Year(s)</u>	<u>Committee Name</u>	<u>Location</u>
2005-2006	Tri-University grant participant for Learner-Centered Education	University of Arizona/Arizona State/Northern Arizona University

### 5. Continuing Education Talks

<u>Year(s)</u>	<u>Title</u>	<u>Location</u>
2006	Size-Selective Sampling Techniques	Arizona AIHA, Tucson, AZ
2007	Exposure Assessment Strategies	AIHce, Convention Center Philadelphia, PA
2008	Exposure Assessment Strategies	AIHce Minneapolis, MN
2008	Exposure Modeling	AIHce, Minneapolis, MN
2008	Exposure Statistics Workshop	Heartland Center, Sheraton Hotel, Iowa City, IA
2008	Industrial Hygiene Statistics	Arizona AIHA, Tucson, AZ
2009	Exposure Assessment Strategies	AIHce, Convention Center, 201D, Toronto, ON, Canada
2009	Exposure Modeling	AIHce, Convention Center, 202D, Toronto, ON, Canada
2010	Hearing and Physics of Sound; Noise Analysis and Control	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa
2010	Hearing and Physics of Sound; Noise Analysis and Control	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa

<u>Year(s)</u>	<u>Title</u>	<u>Location</u>
2010	Ventilation Short Course	Heartland Center, Holiday Inn / IREH, Iowa City, IA
2011	Hearing and Physics of Sound; Noise Analysis and Control	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa
2011	Particle Size-Selective Aerosol Sampling: Inhalable, Thoracic, and Respirable	AIHce, Hilton, Portland, OR
2012	Hearing and Physics of Sound; Noise Analysis and Control	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa
2012	Particle Size-Selective Aerosol Sampling: Inhalable, Thoracic, and Respirable	AIHce, Indianapolis, IN
2012	Size-Selective Sampling: What, Where, and When?	Heartland Center, Kirkwood Hotel, Cedar Rapids, IA
2013	Hearing and Physics of Sound; Noise Analysis and Control (90 min)	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa
2013	Physical Hazards: Introduction to Noise	
2014	Hearing and Physics of Sound; Noise Analysis and Control (90 min)	Occupational Hearing Conservationist Certification Course, College of Nursing, University of Iowa
2014	The Ethical Practice of Occupational Health (3.5 hr)	Heartland ERC Continuing Education

### **C. Course Materials**

2005-2006 At University of Arizona, generated all course materials for 3 full courses (CPH 582, 653, 422/522) and for my lesson materials in CPH 575 (radiation). Coordinated course, directed syllabus, and prepared course material for my lectures in CPH 502 (air sampling techniques).

2006-2007 At University of Arizona, generated all course materials for 3 full courses (CPH 582, 653, 422/522) and for my lesson materials in CPH 575 (radiation). Coordinated course, directed syllabus, and prepared course material for my lectures in CPH 502 (air sampling techniques).

2007-2008 At University of Arizona, generated all course materials for 3 full courses (CPH 582, 653, 422/522) and for my lesson materials in CPH 575 (radiation). Coordinated course, directed syllabus, and prepared course material for my lectures in CPH 502 (air sampling techniques).



2009-2010 Revised and updated Industrial Hygiene portion of Occupational Health course (175:230); updated materials and course web site (ICON) for 2009.

2009-2010 Revised Occupational Safety (175:192) course, including syllabus, learning objectives, course lessons, ICON course site, problem sets, and exams.

2009-2010 Sought course approval for new course (Quantitative Exposure Assessment). Developed broad outline for Spring 2011 offering; materials in development.

2010-2011 Developed course materials for 1-credit version of Quantitative Exposure Assessment class offered as 175:201; this will be rolled into Spring 2012 offering of 175:234.

2010-2011 Updated course materials for Assessing Physical Agent Hazards (175:232) course, including syllabus, lectures (9 of 20), labs (4 of 8), homework, exam #1, and ICON course site. Course to be taught Spring 2011.

2010-2011 Updated new materials for Control of Occupational Exposures (175:233) course for last third of materials, including HVAC/IAQ, respiratory protection, personal protective equipment, control banding, and computational fluid dynamics introduction.

2010-2011 Updated new materials for Industrial Hygiene Fundamentals (175:231) course, including syllabus, lectures (12 of 27), labs (4 of 6), homework, and exam #1.

2014-2015 Developed course materials for new 3-credit Quantitative Exposure Assessment class offered as OEH:6460.

### III. SCHOLARSHIP

#### A. Publications or Creative Works

##### 1. Peer-Reviewed Papers

1. Anthony TR, Flynn MR, Eisner A. (2005) Evaluation of facial features on particle inhalation. *Ann. Occup. Hyg.*, 49(2), 179-193.
2. Anthony TR, Flynn MR. (2006) CFD Model for a 3-D inhaling mannequin: Verification and validation of fluid flow. *Ann. Occup. Hyg.*, 50(2), 149-156.
3. Anthony TR, Flynn MR. (2006) Computational fluid dynamics investigation of particle inhalability. *J. Aerosol Sci.*, 37(6), 750-765.
4. Anthony TR, Joggerst P, James L, Stephen L, Shogren E, Burgess J. (2007) Method development study for APR cartridge evaluation in fire overhaul exposures. *Ann. Occup. Hyg.*, 51(8), 703-716.
5. Robinson M, Anthony TR, Littau SR, Herckes P, Nelson X, Poplin GS, Burgess JL. (2008) Occupational PAH exposures during prescribed pile burns. *Ann. Occup. Hyg.*, 52(6), 497-508.
6. Currie J, Caseman D, Anthony TR. (2009) The evaluation of CBRN canisters for use by firefighters during overhaul. *Ann. Occup. Hyg.*, 53(5), 523-538.

7. Anthony TR. (2010) Contribution of facial feature dimensions and velocity parameters on particle inhalability. *Ann. Occup. Hyg.*, 54(7), 710-725.
8. Anthony TR, Landazuri AC, Van Dyke M, Volckens J. (2010) Use of computational fluid dynamics for design and evaluation of a personal, high-flow inhalable sampler. *Ann. Occup. Hyg.*, 54(4), 427-442.
9. Cena L, Anthony TR, Peters TM. (2011) A personal nanoparticle respiratory deposition (NRD) sampler. *Environmental Science and Technology*, 45(15), 6483-6490.
10. Koehler KA, Anthony TR, Van Dyke M, Volckens J. (2011) A rotating, bluff-body disc for reduced variability in wind tunnel aerosol studies. *Ann. Occup. Hyg.*, 55(1), 86-96.
11. Peters TM, Anthony TR, Taylor C, Altmaier R, Anderson K, O'Shaughnessy PT. (2012) Distribution of particle and gas concentrations in a swine gestation confinement animal feeding operations. *Ann. Occup. Hyg.*, 56(9), 1080-1090.
12. Koehler KA, Anthony TR, Van Dyke M, Volckens J. (2012) Solid versus liquid particle aspiration efficiency of three personal aerosol samplers. *Ann. Occup. Hyg.*, 56(2), 194-206.
13. Anthony TR, Anderson KR. (2013) Computational fluid dynamics investigation of human aspiration in low velocity air: Orientation effects on mouth breathing Simulations. *Annals of Occupational Hygiene*, 57(6), 740-757. PMID: 23316076
14. Vosburgh D, Klein T, Sheehan M, Anthony TR, Peters TM. (2013) Design and evaluation of a personal diffusion battery. *Aerosol Science and Technology*, 47, 435-443. PMID: 23548103
15. Pavilonis B, Anthony TR, Humann M, Merchant JA, Moore G, Thorne PS, Weisel C, Sanderson W. (2013) Indoor and outdoor particulate matter and endotoxin concentrations in an intensely agricultural county. *Journal of Exposure Science and Environmental Epidemiology*, 23, 299-305. PMID: 23321860
16. Park JH, Peters TM, Altmaier R, Sawvel RA, Anthony TR. (2013) Simulation of air quality and cost to ventilate swine farrowing facilities in winter *Journal of Computers and Electronics in Agriculture*, 98, 136-145. PMID: 24433305
17. Ramirez MR, Bedford R, Sullivan R, Anthony TR, Kraemer J, Faine B, Peek-Asa C. (2013) Toxicology Testing in Fatally Injured Workers: A Review of Five Years of Iowa FACE Cases *Int J Environ Res Public Health*, 10(11), 6154-6168. PMC: 3863892
18. Reeve KA, Peters TM, Anthony TR. (2013) Wintertime factors affecting contaminant distribution in a swine farrowing room. *Journal of Occupational and Environmental Hygiene*, 10, 287-296. PMID: 23316076
19. Anderson KR, Anthony TR. (2014) Computational fluid dynamics investigation of human aspiration in low velocity air: Orientation effects on nose breathing simulations *Annals of Occupational Hygiene*, 58(5), 625-645. PMID: 24665111
20. Anderson KR, Anthony TR. (2014) Influence of secondary aspiration on human aspiration efficiency *Journal of Aerosol Science*, 75, 65-80.

21. Anthony TR, Park JH, Altmaier R, Peters TM. (2014) Modeled effectiveness of ventilation with contaminant control devices on indoor air quality in swine farrowing facility *Journal of Occupational and Environmental Hygiene*, 11(7), 434-449. PMID: 24433305
22. Anderson KR, Oleson JJ, Anthony TR. (2014) Variability of coefficients of restitution in human facial skin *Skin Research and Technology*, 20(3), 335-362. PMID: 23006817
23. Anderson KR, Anthony TR. (2015) Uncertainty in aspiration efficiency estimates due to torso simplifications in computational fluid dynamics (CFD) simulations. *Ann. Occup. Hyg.*, 57(2), 184-199. PMID: 23006817 (in press)
24. Green DR, Anthony TR. (2015) Occupational noise exposure of employees at locally-owned restaurants in a college town. *Journal of Occupational and Environmental Hygiene* (in press)
25. Park JH, Mudunkotuwa I, Mines L, Anthony TR, Grassian V, Peters TM. (2015) A Granular Bed for Use in a Nanoparticle Respiratory Deposition (NRD) Sampler. *Aerosol Science and Technology* (in press)

## **2. Non-Peer-Reviewed Papers (reports, proceedings, etc.)**

1. DiGiano F , Leith D, Elliot D, Pate B, Napfel CM, Anthony TR. (1992) Application of passive dosimetry for detection of leaking underground storage tanks. *Water Resources Research Institute Report No. 268, The University of North Carolina.*
2. Leonard S, Anthony TR, Ramirez MR. (2012) FACE Report Case 2010IA054: Construction laborer fell from ladder.
3. Anthony TR, Leonard S, Ramirez MR. (2012) FACE Report Case 2011IA035: Convenience store cook died from smoke inhalation. (2011 IA 035).
4. Anthony TR, Ramirez MR. (2012) FACE Report Case 2008IA0: Farmer crushed by corn header when attempting to disengage it from a combine. (Submitted)
5. Anthony TR, Madsen M, Ramirez MR. (2012) FACE Report Case 2009IA037: Farmer caught in compression rollers of hay baler. (Submitted)
6. Ramirez MR, Anthony TR, Leonard S. (2012) FACE Report Case 2011IA075: Truck driver died of thermal injuries. (Submitted)
7. Leonard S, Anthony TR, Ramirez MR. (2012) FACE Report Case 2012IA009: Bathtub refinishing technician died from inhalation of paint strippers. (Submitted)

## **3. Books/Monographs**

1. Keil CB, Simmons c, Anthony TR. (2009) Editor. *Mathematical Models for Estimating Occupational Exposures To Chemicals. 2nd Edition.* (2nd ed.). Fairfax: AIHA Press.
2. Keil CE, Simmons C, Anthony TR. (2009) Editor.. In Keil, Simmons, Anthony (Eds.), *Mathematical Models for Estimating Occupational Exposures to Chemicals.* (2nd ed.). Fairfax, VA: AIHA Press.

#### 4. Chapters

1. Anthony TR. (2009) Computational Fluid Dynamics Modeling for Use in Exposure Assessments.. In Keil, Simmons, Anthony (Eds.), *Mathematical Models for Estimating Occupational Exposure to Chemicals*. (2nd ed.). Fairfax, VA: AIHA Press.
2. Jayjock M, Stenzel M, Anthony TR, Arnold S. (2009) Why Model?.. In Keil, Simmons, Anthony (Eds.), *Mathematical Models for Estimating Occupational Exposure to Chemicals*. (2nd ed.). Fairfax, VA: AIHA Press.
3. Buikema B, **Anthony TR**, Gerr FE (*in press*) Occupational and Environmental Health (SM Roberts, RC James, & PL Williams, Eds.). In *Principles of Toxicology: Environmental and Industrial Applications* (3<sup>rd</sup> Ed), Hoboken, NJ: John Wiley & Sons.

#### B. Areas of Research Interest/Current Projects

1. Sampler design and exposure assessment techniques for inhalable particles
2. Occupational and community exposure assessment
3. Computational fluid dynamics applications to exposure assessments
4. Exposure modeling
5. CFD Investigation of Particle Inhalability in Low Wind Speed
6. GPCAH-Intervention to Reduce Exposures in Concentrated Animal Feeding Operations
7. Design, Evaluation, and Validation of a Next-generation Inhalable Aerosol Sampler

**C. Sponsored Research**

**1. Grants Received**

Source Title P.I.	% Effort % Salary Support	Direct Funds Period of Funding
CDC/NIOSH/NPPTL AHRQ Development of Test Methods for Evaluating Air-Purifying Respirator Cartridge for Firefighting Operations Burgess <i>Principal Investigator</i> TR Anthony <i>Co-Investigator</i>		\$50,000 06/16/2005-07/01/2006
CDC/NIOSH/NPPTL AHRQ Air Purifying Respirator Cartridge Evaluation for Firefighting Operations (Phase II) TR Anthony <i>Principal Investigator</i>		\$41,997 02/01/2007-01/30/2008
R21OH009114-01 CDC/NIOSH A High-Flow Personal Sampler for Inhalable Aerosol Volckens <i>Principal Investigator</i> TR Anthony <i>Co-Investigator, subcontract with Colorado State</i>		\$172,835 08/10/2007-07/31/2009
R01OH009290-03 CDC/NIOSH CFD Investigation of Particle Inhalability in Low Wind Speed TR Anthony <i>Principal Investigator</i>	30%	\$625,000 06/01/2008-05/31/2013
R21-OH009920-01 CDC/NIOSH Methods to Assess Personal Exposures to Airborne Metallic Nanoparticles Thomas M. Peters <i>Principal Investigator</i> TR Anthony <i>Co-Investigator</i>		\$300,000 06/01/2010-05/31/2012

Source Title P.I.	% Effort % Salary Support	Direct Funds Period of Funding
R01 ES015241-04S1 NIEHS - VICTER Bioengineering Partnership to Improve Chemical Hazard Testing Paradigms Ivan Rusyn <i>Principal Investigator</i> TR Anthony <i>Investigator/Principal Investigator for modeling</i>		\$16,695 09/21/2010-11/30/2012
CDC/NIOSH Design, Evaluation, and Validation of a Next-Generation Inhalable Aerosol Sampler TR Anthony <i>Co-Principal Investigator</i> Volckens <i>Co-Principal Investigator</i>	30%	\$338,600 02/01/2012-01/30/2016
R01 OH010238 CDC/NIOSH A Nanoparticle Respiratory Dose Sampler for Metal-based Nanoparticles Thomas M. Peters <i>Co PI</i> Grassian <i>Co PI</i> TR Anthony <i>Co PI</i>		\$331,092 09/01/2013-08/31/2017

## 2. Grants Pending

Source Title P.I.	% Effort % Salary Support	Direct Funds Period of Funding
CDC/NIOSH Heartland Center Occupational Safety and Health Training Grant-Education and Research Center Patrick T. O'Shaughnessy <i>Principal Investigator</i> TR Anthony <i>Industrial Hygiene Program Faculty</i>		\$1,574,524 07/01/2000-06/30/2013

Source Title P.I.	% Effort % Salary Support	Direct Funds Period of Funding
CDC/NIOSH Great Plains Center for Agricultural Health & Safety Fredric E. Gerr <i>Principal Investigator</i> TR Anthony <i>Principal Investigator- Prevention/Intervention Project A</i>	15%	\$783,039 09/30/2006-09/28/2016

## D. Presentations

### 1. Invited Presentations

<u>Year</u>	<u>Title</u>	<u>Organization</u>
2006	Particle Size-Selective Sampling Methods	AIHA Arizona Section
2006	Exposure Modeling with Computational Fluid Dynamics	University of Michigan, Dept. of Environmental Health Sciences
2007	Fire Overhaul Characterization and Exposure Assessment	National Institute for Standards and Technology (NIST) Workshop for Real-Time Particulate Monitoring
2008	Engineering Applications in Public Health	Ecosystems Seminar, Arizona State University
2008	IH Statistics Review	AIHA Arizona Section
2013	Exploding Pig Barns	NIOSH-OSHA Liaison and Information Exchange meeting (July 11, 2013)

### 2. Conference Presentations/Posters

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
May 1994	NORM in Pulp and Paper Manufacturing (Anthony TR)	Forest Products Forum/AIHce, AIHA / ACGIH, CA	Oral Presentation
1997	Evaluating the Effectiveness of Industrial Hygiene Programs (Anthony TR)	Region IV VPPA Annual Conference, VPPPA, GA	Oral Presentation
1997	Health Hazards in the Paper Industry (Anthony TR)	TN AIHA Local Section Meeting, AIHA Mid-South, TN	Oral Presentation

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
1998	VPP: What's In It for Me? (Anthony TR)	Oregon Pulp and Paper Occupational Safety Association Conference, OR	Oral Presentation
May 1998	Performance Excellence Programs: Industry Perspective of VPP (Anthony TR)	AIHce, AIHA / ACGIH, GA	Oral Presentation
May 2002	A Comparative Study of Various CFD Models of the Assessment of Breathing Zone Site (Richmond-Bryant J, Anthony TR, Flynn M)	AIHce, AIHA / ACGIH, CA	Oral Presentation
May 2004	Effects of Facial Features on Velocity Field for Inhaling Mannequins (Anthony TR, Flynn M)	AIHce, AIHA / ACGIH, CA	Oral Presentation
May 2005	Development of a CFD Model for Particle Inhalability Studies (Anthony TR, Flynn M)	AIHce, AIHA / ACGIH, CA	Paper
May 2005	Particle Investigation in the Near-Wake of an Elliptical Cylinder to Predict Exposure (Anthony TR, Flynn M)	AIHce, AIHA / ACGIH, CA	Poster
October 2005	CFD Investigation of Particle Inhalability (Anthony TR, Flynn)	AAAR Conference, AAAR, TX	Poster
October 2005	Modeling Aerosol Inhalation: Evaluating the ACGIH Inhalability Curve (Anthony TR)	ISEA Conference, ISEA, AZ	Oral Presentation
February 2006	Exposure Modeling with Computational Fluid Dynamics (Anthony TR)	Department of Environmental Health Sciences, University of Michigan	Oral Presentation
March 2006	Particle Size-Selective Sampling Methods (Anthony TR)	AZ AIHA Local Section Meeting/PDC, AIHA Arizona Section, Tucson	Oral Presentation



<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
May 2006	Development of a Chamber System to Test CBRN Respirators for Firefighting Operations (James, Joggerst, Anthony TR)	AIHce, AIHA / ACGIH, IL	Poster
2007	Fire Overhaul Characterization and Exposure Assessment (Anthony TR)	Workshop for Real-Time Particulate Monitoring, National Institute for Standards and Technology	Oral Presentation
May 2007	Exposure Assessment at the University of Arizona SX Mine (Blomquist E, Campos D, Currie J, Anthony TR)	AIHce, AIHA / ACGIH, PA	Poster
May 2007	Workshop: Real-Time Particulate Monitoring-Respiratory Threats for First Responders (Anthony TR)	National Institute for Standards and Technology	Oral Presentation
2008	Engineering Applications in Public Health (Anthony TR)	Ecosystems Seminar, Arizona State University	Oral Presentation
March 2008	IH Statistics Review (Anthony TR)	AZ Local Section Meeting, AIHA Arizona Section, Tucson	Oral Presentation
May 2008	Evaluation of CBRN Canisters for Use by Firefighters During Overhaul (Campos, Curry, Anthony TR)	AIHce, AIHA / ACGIH, MN	Poster
October 2008	A Rotary Sampling Disc for Unbiased Measurements of Large Particle Aerosols in Wind Tunnel (Koehler, Anthony TR, VanDyke, Volckens)	AAAR Conference, AAAR, FL	Oral Presentation
May 2009	Investigation the Aspiration Efficiency of a New High-Flow Inhalable Aerosol Sampler (Anthony TR, VanDyke M, Volckens J)	AIHce, AIHA / ACGIH, ON	Oral Presentation
2010	Respiratory Protection of Firefighters During Overhaul (Lutz, Currie J, Caseman D, Burgess J, Anthony TR)	Stakeholder Meeting, NIOSH Personal Protective Technology Program, PA	Oral Presentation

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
May 2010	Computational Fluid Dynamics Investigation of Airflow into the Inhaling Mouth: Effects of Torso Geometry Simplification (Anderson KR, Anthony TR)	AIHce, AIHA / ACGIH, CO	Poster
May 2010	Development of a Gas Chromatographic Method for Identification of the Herbicide Glyphosate and Its Metabolite Aminomethylphosphonic Acid Using Mass Selective Detection (Lebeck MG, Anthony TR, Sanderson, Lehmler)	AIHce, AIHA / ACGIH, CO	Poster
October 2010	A Sampling Criterion for Nanoparticles (Peters TM, Kim, Chena, Anthony TR)	AAAR Conference, American Association For Aerosol Research	Oral Presentation
October 2010	Characterization of Airborne Particles Emitted During Sanding of Carbon Nanotube Nanocomposite Material (Cena, Cassuccio, Anthony TR, Peters)	AAAR Conference	Oral Presentation
October 2010	Differences Between Solid and Liquid Particle Aspiration Efficiency for Personal Aerosol Samplers (Koehler, Anthony TR, Van Dyke M, Volckens J)	AAAR Conference, AAAR	Oral Presentation
May 2011	A Personal Nanoparticle Respiratory Deposition (NRD) Sampler (Cena, Peters TM, Anthony TR)	AIHce, AIHA / ACGIH, OR	Poster
May 2011	Capture Velocity for a Slotted Conical Hood (Hibbs, Peters, Anthony TR)	AIHce, AIHA / ACGIH, OR	Oral Presentation
May 2011	Exposure Assessment for Automotive Repair Tasks in an Attached Garage (Krzystowczyk, Anthony TR)	AIHce, AIHA / ACGIH, OR	Poster

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
May 2011	Investigation of Particle Bounce on Human Aspiration Efficiency: A CFD Study (Anderson, Anthony TR)	AIHce, AIHA / ACGIH, OR	Poster
May 2011	Recruitment and Enrollment of Rural Non-Farming Iowa Households for the Evaluation of Agrichemical Exposures (Lebeck M, Lehmler H, Anthony TR)	AIHce, AIHA / ACGIH, OR	Poster
May 2011	So, You Are Thinking About Academia? (Anthony TR)	AIHce, AIHA / ACGIH, Portland OR	Oral Presentation
May 2011	How to Relate Total and Inhalable Dust Exposures (Anthony TR)	AIHce: Science Symposium 001, AIHA / ACGIH, Portland, OR	Oral Presentation
August 2011	A Personal Nanoparticle Respiratory Deposition (NRD) Sampler (Cena, Peters TM, Anthony TR)	NanoEHS, Boston, MA	Oral Presentation
October 2011	Investigation of Particle Bounce on Human Aspiration Efficiency: A CFD Study (Anderson, Anthony TR)	AAAR Conference, AAAR, Orlando, FL	Poster
June 2012	Incorporating CFD into Exposure Assessments: An Introduction (Anthony TR)	AIHce, AIHA / ACGIH, Indianapolis, IN	Oral Presentation
June 2012	Wintertime factors affecting contaminant concentration in farrowing barns (Reeve K, Anthony TR)	AIHce, AIHA / ACGIH, Indianapolis, IN	Oral Presentation
October 2012	Evaluation of a Personal Diffusion Battery (Vosburgh D, Peters TM, Sheehan M, Anthony TR, Klein T)	American Association For Aerosol Research, American Association For Aerosol Research, MN	Poster
May 2013	Do hat wearers have reduced exposures? An examination of particle aspiration by head coverings (Anderson, Anthony) (Anderson, Anthony TR)	AIHce, Montreal, QC	Poster

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
May 2013	Human aspiration efficiency estimates: Orientation-averaged, slow-moving air, mouth-breathing (Anderson, Anthony TR)	AIHce, Montreal, CQ	Paper
May 20, 2013	Evaluation of the validity of the inhalable and "total" dust concentration ratio (Getschman B, Anthony TR)	AIHce, Montreal, CQ	Poster
May 20, 2013	Top 10 list of IH slip-ups (Round Table 203) (Anthony TR)	ALHce, Montreal, CQ	Oral Presentation
May 22, 2013	Serving more than food: Noise exposures in local restaurants (Green DR, Anthony TR,)	AIHce, Montreal, CQ	Poster
June 26, 2013	Improving indoor air quality in swine CAFO using enhance ventilation and engineering controls (Park, Peters TM, Altmaier R, Sawvel, Anthony TR)	International Society of Agricultural Safety and Health, Sandusky, OH	Oral Presentation
September 23, 2013	Development of a Disposable Cassette Inlet for Measuring Inhalable Particles (L'Orange, Volckens, Sleeth, Anthony TR)	Inhaled Particles XI, Nottingham, UK	Paper
September 23, 2013	Sampler efficiencies of 37-mm cassette with inlets modified to collect inhalable particles (Anthony TR, Sleeth, Volckens)	Inhaled Particles XI, Nottingham, UK	Paper
October 3, 2013	Effect of secondary aspiration on low velocity human aspiration efficiency estimates: CFD investigation (Anderson KR, Anthony TR)	AAAR, Portland, OR	Oral Presentation

<u>Year</u>	<u>Title</u>	<u>Organization</u>	<u>Presentation Type</u>
June 2, 2014	A disposable inhalable aerosol sampler designed to fit a 37-mm cassette (L'Orange C, Anderson KR, Volckens J, Sleeth DK, Anthony TR)	American Industrial Hygiene Conference and Exposition, AIHA, San Antonio, TX	Oral Presentation
June 2, 2014	Investigation of 37-mm CFC inlet modifications on the sampling efficiency of inhaled particles (Anthony TR, Sleeth DK, Volckens J)	American Industrial Hygiene Conference and Exposition, AIHA, San Antonio, TX	Oral Presentation
June 2, 2014	Omnidirectional estimates in human aspiration efficiency in low velocity air using CFD (Anthony TR, Anderson KR)	American Industrial Hygiene Conference and Exposition, AIHA, San Antonio, TX	Oral Presentation
June 23, 2014	A method to assess air quality in swine CAFO (Gassman R, Altmaier R, Jones S, Anthony TR)	International Society of Agricultural Health and Safety, ISASH, Omaha, NE	Poster
June 23, 2014	Improving indoor air quality of swine farrowing buildings (Anthony TR, Gasman R, Sawvel R, Jones S, Altmaier R, Park JH, Peters TM)	International Society of Agricultural Health and Safety, ISASH, Omaha, NE	Oral Presentation
June 23, 2014	Recirculating ventilation system design for use in swine farrowing barn (Sawvel R, Jones S, Altmaier R, Peters TM, Anthony TR)	International Society of Agricultural Health and Safety, ISASH, Omaha, NE	Poster
November 19, 2014	Evaluation of Air Quality Improvements in a Swine Farrowing CAFO (Anthony TR, Altmaier R, Jones S, Gassman R, Sawvel R, Peters TM)	Midwest Rural Agricultural Safety and Health Conference, MRASH, Ankeny, IA	Oral Presentation

## E. Pending Information

Title Source P.I.	Calendar Month Effort	Period of Funding Annual Direct Funds
Iowa FACE CDC/NIOSH <i>Leonard</i>	2.4	07/2015-06/2020

Assist with surveillance of occupational fatalities in Iowa, conduct investigations, and develop and deploy outreach materials to educate workers and prevent workplace injuries.

## IV. SERVICE

### A. Offices/appointments held in professional organizations

#### 1. Editorships

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2011-Present	Journal of Occupational and Environmental Hygiene	Editorial Review Board Member (2012-Present)

#### 2. Review Panels

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2006	Civilian Research and Development Foundation	Grant Reviewer
2008	Research on Diacetyl and Food Flavorings: A Study Protocol, NIOSH Flavorings Research Panel	NIOSH Review Panel Member
2009	Disease, Disability and Injury Prevention and Control Special Emphasis Panel, NIOSH	Reviewer
2010	Proposals submitted to the UK's joint initiative on Environmental Exposure and Health, Jointly sponsored by Medical Research Council, Natural Environment Research Council, Department of Health, Economic and Social Research Council, and Department for Environment, Food and Rural Affairs	Reviewer

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2010	Disease, Disability and Injury Prevention and Control Special Emphasis Panel, NIOSH	Reviewer
2012	Disease, Disability and Injury Prevention and Control Special Emphasis Panel, NIOSH, Training Project Grants Special Emphasis Panel Workgroup	Reviewer
2014	Disease, Disability and Injury Prevention and Control Special Emphasis Panel, National Institute of Occupational Safety and Health	Reviewer

### **3. Departmental, Collegiate or University Service Positions**

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2006-2007	Annual performance reviews for Division III, Mel and Enid Zuckerman College of Public Health, University of Arizona	Peer Reviewer
2009-2010	Pilot Project Proposals, Heartland Educational Resource Center	Reviewer
2010-2011	Pilot Project Proposals, Great Plains Center for Agricultural Health	Reviewer
2011	Graduate Student Posters, Health Sciences Research Week	Judge
2014-Present	OEH Scholarship Committee, University of Iowa, College of Public Health	Chair

### **4. Professional Organizations (state and/or national)**

<u>Year</u>	<u>Organization</u>	<u>Position</u>
1997	Mid-South Local Industrial Hygiene Association Section	Director

## **B. Other Professional Service**

### **1. Referee Manuscripts/Journal Reviews**

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2006-Present	Annals of Occupational Hygiene	
2008	Chemosphere	
2009-Present	Journal of Air & Waste Management	
2009	Environmental Science and Technology	
2009	Risk Analysis	
2010	Critical Reviews in Toxicology	
2011	Journal of Occupational and Environmental Hygiene	
2011	Science and the Total Environment	
2012	Journal of Aerosol Science	

## **2. Organize Conference, Paper Session, etc.**

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2008	Exposure Modeling Professional Development Course, AIHce	Technical Material Coordinator
2011	Professional Development Course 504: Particle Size-Selective Aerosol Sampling: Inhalable, Thoracic and Respirable, AIHce	Arranger

## **3. Departmental, Collegiate or University Committees (other than teaching)**

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2005-2008	Non-Ionizing Radiation Safety Committee, University of Arizona	Appointed Member
2006	Computer Committee, Mel and Enid Zuckerman College of Public Health, University of Arizona	Member
2006	Search Committee, Environmental and Occupational Health section	Member



<u>Year</u>	<u>Organization</u>	<u>Position</u>
2009-2011	Search Committee for Assistant/Associate/Full Professor, Department of Occupational and Environmental Health, College of Public Health, University of Iowa	Member
2011-2014	Faculty Senate, University of Iowa	Elected At-Large Member

#### 4. State Committees

<u>Year</u>	<u>Organization</u>	<u>Position</u>
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#### 5. National Committees

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2000-Present	Exposure Assessment Strategies Committee - 3rd Edition Project Team, American Industrial Hygiene Association	Member
2000-2009	Exposure Assessment Strategies Committee - Modeling Project Team, American Industrial Hygiene Association	Member
2005-Present	Students and Early Career Professionals Committee, American Industrial Hygiene Association	Secretary, 2008; Vice Chair, 2008; Chair, 2009-2010; Past-Chair, 2010-2011
2009-Present	Aerosol Technologies Committee, American Industrial Hygiene Association	Member
2010	Volunteer Group Experience Task Team, American Industrial Hygiene Association	Member

#### 6. Professionally Relevant Community Involvement

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2012	Field exposure assessment monitoring for heavy equipment manager in Iowa	

## 7. Professional Consulting

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2006	Hygiene training for field personnel (noise, dust, solvents), PacifiCorps, Salt Lake City, UT	Consultant/Trainer
2012	Field exposure assessments, John Deere	Hygienist

## 8. Other

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2013	IH Student Focus Group for ABET Continuous Improvement	
2013	Healthier Workforce Center for Excellence Pilot Project Proposals, University of Iowa	
2014-2015	Journal of Occupational and Environmental Health, Board of Directors	Vice President; President
2014-2015	Journal of Occupational and Environmental Health, LLC	Vice President - President
2014	Review of Student Poster Abstracts for AIHce 2014	Reviewer