OMB No. 0925-0001 and 0925-0002 (Rev. 09/17 Approved Through 03/31/2020)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Yorghos Apostolopoulos

eRA COMMONS USER NAME (credential, e.g., agency login): y\_aposto

POSITION TITLE: Associate Professor of Population Health

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 DateMM/YYYY | FIELD OF STUDY |
| --- | --- | --- | --- |
| University of Athens, Athens, Greece  | BSc | 06/1987 | Exercise Science |
| University of Connecticut, Storrs, Connecticut  | MA | 05/1990 | Kinesiology |
| University of Connecticut, Storrs, Connecticut  | PhD | 08/1994 | Sociology |
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1. **Personal Statement**

I am a population health scientist with the experience, record, leadership skills, commitment, and passion necessary to contribute to the successful implementation of research on occupational, immigrant, and minority health and safety disparities. My areas of expertise blend social epidemiology, occupational health and safety, and health policy. Due to the complex nature of population health and safety disparities and overall modest success of current preventive interventions, and based on ongoing professional development, I have incorporated complex systems theory and methodologies into my scientific toolbox. Broadly, my work examines how diverse structural and organizational policies can shape pronounced health and safety disparities among truck drivers, immigrant lodging and foodservice workers, and rural Black Americans in the U.S., and socioeconomically disadvantaged populations in Europe. My ongoing research delves into how environmental, immigration, social, health, labor, transportation, and food policies can shape population and occupational health and safety, grounded in novel theoretical (syndemics, phase transitions, resilience, and metaflammation) and methodological (computational simulation, such as system dynamics, agent-based, and hybrid modeling) frameworks and techniques, with an emphasis on cardiometabolic syndemicity and roadway safety. Over the past years, as PI, Co-PI, and Co-I on several federally- and university-funded grants and various peer-reviewed publications, I laid the groundwork for population and occupational health and safety disparities research by developing and refining multimarker/level measures to deconstruct how the broad work environment influences health and safety; have documented the role of work organization and stressors in disproportionately high chronic comorbidity and roadway safety; and have established the need for complex systems conceptualizations and methodologies due not only to the profound nonlinear dynamics of health/safety disparities but also to the failure of the prevailing population health and safety paradigm to provide sufficient explanations. During the implementation of these studies, I successfully administered the projects, managed and collaborated with multidisciplinary/institution research teams, produced peer-reviewed manuscripts, and established strong ties with stakeholders that have made study implementation possible. These aggregate experiences confirmed for me the importance of frequent communication among project members and of constructing a realistic research plan, timeline, deliverables, and budget. Current grant applications build on this prior work and varied experiences. I moved abroad in 2005 to address a family emergency, causing a temporary career disruption, but resumed my research collaborations upon returning stateside in 2009. I have since been able to expand my long-standing work in occupational health and safety disparities with the introduction of diverse complexity science perspectives.

**B. Positions and Honors
*B.1. Positions and Employment* (most recent)**

2002-06 Associate Professor of Social Epidemiology; Founding Director, Mobility and Population

Health Unit, Division of Infectious Diseases, Emory University School of Medicine, Atlanta,

Georgia

2006-07 Professor of Medical Sociology (Adjunct), Department of Social Sciences, National School of

Public Health, Athens, Greece

2006-07 Associate Professor of Medical Sociology (Adjunct), Department of Nursing, University of

Athens School of Health Sciences, Athens, Greece

2006-07 Professor of Social Epidemiology (Visiting), Cyprus International Institute for the Environment & Public Health (in collaboration with Harvard School of Public Health), Nicosia, Cyprus

2006-14 Clinical Associate Professor of Medicine, Division of Infectious Diseases, Emory University

School of Medicine, Atlanta, Georgia

2007-09 Associate Professor of Social Epidemiology, Program of Health Sciences, Department of

Natural Science and Public Health, Zayed University, Abu Dhabi, UAE

2009-14 Associate Professor of Public Health, Department of Public Health Education, University of

North Carolina Greensboro, Greensboro, North Carolina

2015- Associate Professor of Population Health, Department of Health & Kinesiology, Texas A&M

University, College Station, Texas

2015- Founding Director, Complexity & Computational Population Health Group, Department of Health & Kinesiology, Texas A&M University, College Station, Texas

2016- Adjunct Professor, Nijmegen School of Management, Radboud University, Nijmegen,

 Netherlands

***B.2. Awards and Honors (selected)***

2002-06 Invited AIDS Training Advisory Group Member, Fogarty AIDS International Training and

Research Project, Addis Ababa University, Addis Ababa, Ethiopia and Emory University

School of Medicine, Atlanta, Georgia

2007 Invited Tobacco Control Policy Workshop Participant and Speaker, “Tobacco Control and

Prevention in Greece,” Greek Ministry of Health and Social Security, Athens, Greece

2008 Invited Think-Tank Participant, “Assessment and Mitigation of Ecological, Sociopolitical, and

Health Threats for Mediterranean and Middle Eastern Tourist Destinations” (responsible for

public health component involving GeoSentinel and SARS/avian flu surveillance), Cyprus

University of Technology, Limassol, Cyprus

2012 Invited Worker Health Seminar Series Speaker, Center for Worker Health, “Work

organization and the epidemiology of commercial driving: From monocausal to multilevel

approaches,” Wake Forest University School of Medicine, Winston Salem, North Carolina

2017- Associate Editor, Editorial Board, *BMC Public Health*

1. **Contributions to Science**

***C.1. Complex Systems Science in Population Health Disparities and Prevention Research:***

Introduced the conceptualization of population health as complex adaptive and dynamical system of systems due to the nonlinear dynamics of chronic disease disparities and modest successes of low-leverage interventions. In this framework, I am applying the concurrent use of syndemics frameworks; structural policies; phase transition, resilience, and loop dominance theories; and mathematical and dynamic simulation modeling to chronic disease prevention among underserved general population and working-class segments. This is a particularly novel approach to disease prevention and health disparities research as it can lead to the identification of early-warning signals with invaluable ramifications in system resilience, prevention, and health policy. This line of work has led to a recent book contract from Oxford University Press. This book (see below) introduces a ground-breaking integrative complex-systems paradigm in population health science and is the first graduate textbook in the international literature. Manuscripts relevant to the proposed investigation follow (while several others are currently in progress):

1. Apostolopoulos, Y., K. Hassmiller Lich, M.K. Lemke, and A.E. Barry (2018). A complex-systems paradigm can lead to evidence-based policymaking and impactful action in substance misuse prevention – A rejoinder to Purshouse et al. (2018). *Addiction,* 113, 1155-1156.
2. Apostolopoulos, Y., M.K. Lemke, A.E. Barry, and K. Hassmiller Lich (2018). Moving college drinking prevention research forward – Part I: Introducing a complex systems paradigm. *Addiction*.
3. Apostolopoulos, Y., M.K. Lemke, A.E. Barry, and K. Hassmiller Lich (2018). Moving college drinking prevention research forward – Part II: New directions grounded in community-based system dynamics modeling. *Addiction*.
4. Apostolopoulos, Y., K. Hassmiller Lich, and M.K. Lemke (Eds.) (2019, *forthcoming*). *Complex Systems and Population Health: A Primer*. New York: Oxford University Press.

***C.2. Complex Systems Science in Occupational Health and Safety Research and Practice:***

Introduced a novel framework, which conceptualizes occupational health and safety as a complex dynamical system and applies systems science methodologies to disease and injury prevention among vulnerable working populations. This approach holds potential to disentangle chronic impasses in understanding and addressing threats to health and safety at work environments. This unique approach to occupational disease prevention and health and safety disparities research can lead to the identification of early warning signals and the enhancement of system resilience, health and safety protection and prevention, and health policy. Manuscripts relevant to the proposed investigation follow (while several others are currently in progress):

1. Apostolopoulos, Y., M.K. Lemke, N. Hosseinichimeh, I.S. Harvey, K. Hassmiller Lich, and J. Brown (2018). Embracing causal complexity in health disparities: Metabolic syndemics and structural prevention in rural minority communities. *Prevention Science, 34,* 1-11.
2. Lemke, M.K. and Y. Apostolopoulos (2016). Public policy, work organization, and sleep health and safety of commercial drivers: The need for a complex systems paradigm. *Journal of Ergonomics, 6,* 152-156.
3. Lemke, M.K. and Y. Apostolopoulos (2018). New directions in occupational health and safety disparities research: Complex systems science and computational modeling. In: (Ed. Casanova, M.), *Systems Theory and Medicine.* Hauppaugue, New York: NOVA Science Publishers.
4. Sönmez, S., Y. Apostolopoulos, M.K. Lemke, Y.C. Hsieh, and W. Karwowski (2017). Complexity of occupational health in the hospitality industry: Dynamic simulation modeling to advance immigrant worker health. *International Journal of Hospitality Management*.

***C.3. Transport Work Environment, Sleep/Cardiometabolic Health, and Roadway Safety:***

Work emphasized the importance of excess and irregular work hours, fatigue, and circadian misalignment in truckers’ sleep disorders, cardiovascular health, and roadway safety. Selected manuscripts relevant to proposed investigation follow (while several others are currently in progress):

1. Hege, A., M.K. Lemke, Y. Apostolopoulos, and S. Sönmez (2018). Occupational health disparities among U.S. long-haul truck drivers: The influence of work organization and sleep on cardiovascular and metabolic disease risk. *PLOS ONE*
2. Lemke, M.K., Y. Apostolopoulos, A. Hege, S. Newnam, and S. Sönmez (2018). Can subjective sleep problems detect latent sleep disorders among commercial drivers? *Accident Analysis & Prevention,* 115, 62-72.
3. Lemke, M.K., Y. Apostolopoulos, A. Hege, L. Wideman, and S. Sönmez (2017).  Work organization, sleep, and metabolic syndrome among long-haul truck drivers. *Occupational Medicine,* 67, 274-281.
4. Lemke, M.K., Y. Apostolopoulos, A. Hege, S. Sönmez, and L. Wideman (2016). Sleep quality as a better predictor of safety-relevant performance than sleep duration among long-haul truck drivers. *Accident Analysis & Prevention,* 97, 79-86.

***C.4. Transport Work Organization and Obesity Associated Syndemicity:***

Contributed to expanding the understanding of the role of work organization and labor and food policies in commercial transport operators’ excess and disproportionate obesity and associated comorbidities. Selected manuscripts relevant to proposed investigation follow (while several others are currently in progress):

1. Apostolopoulos, Y., M.K. **Lemke, A.** Hege, S. Sönmez, H. Sang, D.J. Oberlin, and L. Wideman (2016). Work and chronic disease: Comparison of cardiometabolic risk markers between truck drivers and the general U.S. population. Journal of Occupational and Environmental Medicine*,* 58, 1098-1105.
2. Hege, A., M.K. Lemke, Y. Apostolopoulos, and S. Sönmez (2018). The impacts of work organization, job stress, and sleep on the health behaviors and outcomes of U.S. long-haul truck drivers. *Health Education & Behavior*
3. Hege, A., Y. Apostolopoulos, M. Perko, S. Sönmez, and R. Strack (2016). The work organization of long-haul truck drivers and the association with body mass index (BMI). *Journal of Occupational and Environmental Medicine*, 58, 712-717.
4. Lemke, M.K., A. Hege, Y. Apostolopoulos, S. Sönmez, and L. Wideman (2017). Work organization and sleep among long-haul truck drivers and other transport workers: Implications for safety. *Journal of Transport and Health.*

***C.5. Health and Social Inequalities Among Minority, Immigrant, and Other Underserved Populations:***Explored the etiology of the unequal distribution of diverse health outcomes among working-class immigrant and minority populations. Selected manuscripts relevant to proposed investigation follow:

1. Hege, A., Q. Vallejos, Y. Apostolopoulos, and M.K. Lemke (2015). Health disparities of Latino immigrant workers in the United States: A systematic review and new research directions. *International Journal of Migration, Health, and Social Care*, 11, 282-298.
2. Hsieh, Y.C., Y. Apostolopoulos, G. Hatzudis, and S. Sönmez (2016). Social, occupational, and spatial exposures and mental health disparities of working-class Latinas in the U.S. *Journal for Immigrant and Minority Health*, 18, 589-599.
3. Hsieh, Y.C., Sönmez, S., Apostolopoulos, Y., and M.K. Lemke (2016). Perceived workplace mistreatment: Case of Latina hotel housekeepers. *Work*, 56, 55-65.
4. Hsieh, Y.C., Y. Apostolopoulos, and S. Sönmez, (2016). Work conditions and the health and wellbeing of Latina hotel housekeepers. *Journal for Immigrant and Minority Health*, 18, 568-581.

**D. Additional Information: Research Support and/or Scholastic Performance**

***D.1. Ongoing Research Support***

* ***Delineating Hispanic immigrants’ allostatic load dynamics through systems modeling***

Co-Principal Investigator: Yorghos Apostolopoulos

Objectives: Based on complex systems methodologies, the goal of the proposed study is to delineate how complex and interacting social, immigration, health, and labor policies and work and non-work environments influence low-skill/-pay service-sector Latino immigrant workers’ excess allostatic load and associated syndemic risk over time, and to identify high-leverage structural policy intervention points to reduce or reverse deteriorating trends.

Funding agency: NIH, NIMHD, 2018-21.

* ***In search of impactful alcohol misuse reduction policies in college environments: A community-based system dynamics modeling approach***

Co-Principal Investigator:Yorghos Apostolopoulos

Objectives: Grounded in ecosocial and complex systems theories, dynamic modeling methodologies, and computational formalisms, the overarching aim of this project is to identify which government, business, school, and community policy configurations can most effectively minimize college students’ alcohol misuse and associated consequences over time.

Funding source: Texas A&M University Division of Research, College Station, Texas, 2017-19.

* ***Sleep disorders and associated comorbidities among long-haul truck drivers: Novel biomarker analysis***

Co-Principal Investigator: Yorghos Apostolopoulos (PIs: Adam Hege and Scott Collier, Appalachian

State University, North Carolina)

Objectives: Grounded in ecosocial and occupational stress theories, we will assess the complex pathways among the multilevel trucking occupational environment, sleep disorders, and associated cardiovascular comorbidities among long-haul truck drivers using novel cardiovascular risk biomarkers.

Funding source: Appalachian State University, Department of Health and Exercise Science, Boone, North Carolina, 2017-18.