

TAO Newsletter

Summer 2018

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Please contact Darryl B. Hood (hood.188@osu.edu) if you would like to join the Communications Committee or contribute to the tri-annual TAO Newsletter.

<http://www.toxicology.org/groups/sig/tao/index.asp>

President's Message

By Darryl B. Hood

July 18, 2018



USEPA STAR Exposome Team, Nashville, TN June 10-12, 2018
 Front Row: Min-Ae Song (OSU), Mohammad Abatabai (MMC)
 Second Row: Robert Valdez (UMN-A), Paul Suarez (MMC), Darryl B. Hood (MMC), Daniel Sarpong (LAITS)
 Third Row: Mohammad Al-Hamdan (URSA), Ramandla Ramesh (MMC), Doctoral Student from Lichtveld Lab (TulaneU)
 Fourth Row: Gary Rodgers (ORNL), Michael Langston (UT-K), Charles Phillips (ORNL), Charles Mouton (UTMB)
 Fifth Row: John Reichard (UCincinnati), Mathew Morris (MMC), Wansoo Im (MMC)
 Not pictured: William Blot and Mike Mumma (UMC), Cynthia Colon (OSU), Marcel Yotebieng (OSU), Ayaz Hyder (OSU), Maureen Lichtveld (TulaneU), Pat Matthews-Juarez (MMC), Mark Weir (OSU)

Once again, I am honored to serve as your 2018-2019 President. TAO is a very important organization, and I pray that the experiences garnered over the past 4-years; three as Councilor and last year as Vice President will serve me well to instill the wisdom necessary to lead this organization by continuing to build on the great foundation afforded by my predecessors.

As mentioned in my inaugural message, during the 2018-2019 year we will continue to focus on: 1) Doubling the Membership of TAO via the Each One Reach One Initiative, 2) Increasing the visibility of TAO in SOT scientific plenary, symposium, workshop, and platform sessions and 3) Enhance our portfolio by engendering collective efficacy around the sentiment of “feel good about TAO.” This will have a cumulative effect to serving us well in many aspects of our mission.

As promised, we have gotten off to a fast start and I’m happy to report that TAO submitted a proposal for an informational roundtable session entitled “Toxicology Education and Risk Assessment Training in Africa: Status, Challenges, and Role of SOT Special Interest Groups (SIGs) in Moving Forward.” This session will be chaired by myself and co-chaired by the Vice President Dr. Abdel-Razak Kadry of the US EPA. The entire session is presented on Page 8.

Finally, in keeping with the practice of Past Presidents Hodge-Bell, Stewart, Abou-Donia, and Green, as we begin another year it is appropriate to refocus on the objectives of TAO so as to ensure that we have another successful year.

- Promote career development opportunities for toxicologists of African origin, and to increase the recruitment and retention of those entering the toxicological sciences
- Promote information exchange, collegiality, and networking among toxicologists and related professionals and to recognize the accomplishments of toxicologists of African origin
- Ensure that mentorship opportunities are available for the next generation of toxicologists and related professionals
- Propose, develop, and sponsor scientific and educational programs including symposia, workshops, poster and platform sessions on current scientific and policy issues that are relevant to toxicology and relevant to toxicologists of African origin
- Act as SOT’s liaison to other organizations on toxicological issues that are relevant to toxicologists of African origin

There are many avenues that will lead to our achieving these objectives this year and beyond and we list below some opportunities for the collective membership. Please join us as we engage in delivering our mission.

TAO WEBSITE

Members will have access to our membership directory, members only content, networking features and job postings.

TRI-ANNUAL NATIONAL TAO e-NEWSLETTERS THREE TIMES A YEAR

The TAO Newsletters feature a personalized letter from the President and news from the executive board and members in general. It is meant to stimulate and generate ideas for activities and events, share inspiring stories of scientists and their achievements, scientific articles, book reviews, articles about controversial current issues, photos of events and science news, meeting announcements, information about travel fellowship and scientific competition as well as to recognize winners of competitions. Other topics might include continuing education, job and funding announcements, upcoming events, scientific meeting announcements, and links to interesting books, journals, and websites.

PARTICIPATION IN PROFESSIONAL DEVELOPMENT ACTIVITIES AND WEBINARS

All of these activities will provide excellent opportunities for networking thereby allowing TAO members the ability to find mentors, mentees, potential new jobs, employees, and friends. Leadership positions lend experience in career development. TAO members can participate as a member, or may Chair any of the following committees:

- Membership Committee
- Development Committee
- Public Relations Committee
- Technology Committee
- Fellowship Committee
- Ad hoc committees are available

OPPORTUNITY TO BE NOMINATED FOR AND SERVE AS AN OFFICER

Elected positions include: President, Vice President, Secretary/Treasurer, Councilor, Postdoctoral Representative, Graduate Student Representative

OPPORTUNITY TO SERVE AS A DELEGATE TO THE ANNUAL SOCIETY OF TOXICOLOGY MEETING

TAO is a participating Special Interest Group in the SOT Annual Meeting.

PARTICIPATION IN THE TAO MEETING AT THE SOT ANNUAL MEETING

TAO hosts an annual *in person* reception to facilitate interactions between the leadership and membership. At this reception, the official business meeting of the TAO Special Interest Group also occurs. Executive board members and all elected and appointed members, are required to

attend. All regular members are invited to attend the annual reception in order to learn how TAO operates within SOT.

SCIENTIFIC CONFERENCES AND WEBINARS

TAO members will have the opportunity to share their own research during the SOT Annual Meeting. This year, we are continuing the implementation of a national webinar series that will include many of you as prominent SOT scientists. Please see the article from Vice President Kadry that follows in the next section where he shares more information about these webinars to begin in the not-to-distant future.

We also have \$250 travel awards for graduate students, postdoctoral associates, and distinguished scientists.

Sincerely,

A handwritten signature in blue ink, appearing to read "Darryl B. Hood".

Darryl B. Hood, PhD, Associate Professor <https://cph.osu.edu/people/dhood>
President, Toxicologists of African Origin <https://www.toxicology.org/groups/sig/TAO/index.asp>
Graduate Studies Chair, Environmental Science Graduate Program (ESGP) esgp.osu.edu
Division of Environmental Health Sciences
College of Public Health
Department of Neuroscience
College of Medicine

Vice President's Message

By Abdel-Razak Kadry



Dear colleagues:

Since its inception several years ago, Toxicologists of African origin (TAO) has grown and evolved from a shared aspiration to a dynamic, vibrant, diverse and strong scientific community of great toxicologists. TAO members work together to promote the science and application of toxicology. TAO members apply the toxicology and risk assessment foundation to serve the communities in USA and around the globe specially in developing African countries.

I am so delighted to join the TAO elite board of directors as the Vice President of TAO. I hope that I will be an effective addition to the Board and be able to contribute significantly to the ongoing success of this great organization.

Specifically, I am so honored to work beside Dr. Darryl B. Hood, a sophisticated scientist and an outstanding leader with endless amount of new ideas and energy. In addition, it is a great opportunity to learn from the Distinguished Past Presidents of TAO especially Dr. Sidney Green and Dr. Mohamed Abu-Donia.

Currently, I am working on a very exiting scientific program for this year. TAO is organizing six live webinars. Outstanding scholars representing various disciplines of toxicology and risk assessment will deliver these webinars. We will be using WebEx technology in delivering these live webinars. These webinars will be complementing each other to provide new toxicology information to the participants. These webinars will be advertised and open for any interested members of the Society of Toxicology.

I am so excited about my work with Dr. Hood on and TAO board of directors on several opportunities for national and international collaboration. The following are some examples:

- Working on establishing Collaborative agreement with African Chapter of the International Society of Risk Analysis (<http://www.sra.org/>) to enable both organizations to use the resources of each other.
- Working on organizing symposium in Fifth World Congress on Risk, May 6-8, 2019 in Cape Town, South Africa.
- Working on establishing Collaborative agreement with the Regional Center for Risk Assessment, Alexandria, Egypt. This center offers the largest risk-assessment training program outside of the US & Europe. The program is designed to serve the African countries.
- Working on the invitation from the leadership team in the Library of Alexandria (<https://www.bibalex.org/en/defatul>) for possible trip for TAO members to visit Egypt,

one of the largest African countries and organizing joint workshop with Egyptian and African toxicologists.

Also, I hope that Dr. Hood and I along with the TAO executive board will be able to communicate the job opportunities at the US Federal Government for TAO members. Serving our nation as a toxicologist is a great career move. I may advise any TAO member looking for good future career opportunity to visit: <http://www.usajobs.gov/>. There are always several fellowship opportunities at US Environmental Protection Agency. These opportunities could be reviewed at: <http://epa.gov/fellowships/>. There is an important website for fellowships in several government agencies: <http://orise.orau.gov/careers/career-opportunities.aspx>. We are working to establish a collaborative relationship with the Association of Government Toxicologists (one of oldest toxicology organizations in the Washington DC area).

Once again, I am excited to serve the TAO community. This is going to be another great year for all of us. Thank you all for joining TAO.

Kind regards,

Abdel-Razak M Kadry

Abdel-Razak Kadry, DVM, PhD, DABT
Senior Advisor for Scientific Organizational
Development and International Activities
Chair, NCEA Technical Qualification Board
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Assessment (8601-R)
1200 Pennsylvania Ave. NW
Washington, DC 20460
Telephone: 202-564-0180
<http://kadry.abdel@epa.gov>
Adjunct Professor
Maryland Institute of Environmental Health
University of Maryland
College Park, MD

Committee Updates

1. Bylaws Review Committee

By Sidney Green

At the request of the President, I continued to work with the process of obtaining approval by the SOT of the revised bylaws. As you are aware we submitted suggested revisions to our bylaws to the SOT Council after approval by the membership. We were notified by the Council that the proposed revisions to the TAO bylaws were reviewed at the Council meeting and a number (relatively small) changes were requested before Council would approve the bylaws. The changes requested by the SOT were made and that in turn required another vote by the TAO membership. That vote was taken and closed on July 6th. The membership approved the revised bylaws with the SOT suggested revisions. They have now been placed on the TAO's website. I thank everyone who took the time to participate in this important process.

Sidney Green, PhD

Immediate Past President and Past Chair Bylaws Review Committee



2. Nomination Committee

By Sidney Green

As chair of the nomination committee, I wish to announce we are starting the process much earlier than usual. The offices for which we need nominees are: Vice President, Councilor, Graduate Student Representative, and Postdoctoral Representative. So, I encourage you to please consider placing your name in nomination for one of these offices. The responsibilities for each office can be found in the bylaws. A link to the bylaws is provided below. Please contact me if you have any questions or would like to discuss one or more of these positions.

<http://www.toxicology.org/groups/sig/tao/bylaws.asp>

Sidney Green, PhD

Immediate Past President and Chair Nomination Committee



SOT TAO Informational Session

By Darryl B. Hood & Abdel-Razak Kadry

SESSION ID: 165

PRESENTATION TYPE: Informational Session

Secondary Presentation Type: Roundtable

IAT/ITS Designation: Innovations in Applied Toxicology (IAT)

TITLE: Toxicology Education and Risk Assessment Training in Africa: Status, Challenges, and Role of SOT Special Interest Groups (SIGs) in Moving Forward

SESSION DESCRIPTION: The content of Africa is in a stage of rebirth after long time in stagnation. Africa is now home to seven of the world's 10 fastest growing economies. Africa is very rich in human capital, today, nearly 50 percent of Africans are under age 15. Africa has the fastest growth rate in the world (due to dropping in child mortality and high fertility) with the continent expected to have an estimated 2.8 billion people by 2060. Overall, the education in Africa is slowly improving. There is outstanding improvement in children's primary education. The number of children enrolled in primary schools more than doubled, from 62 million to 149 million children within twenty-two years (1990-2012). A systematic review indicates that University education continues to pose a significant challenge in Africa. In the continent's ten most-populous nations, there are 740 universities serving some 660 million Africans. This ratio in terms of the number of universities compared to the US represents a meek 10% as the US has some 5,300 universities and colleges serving a population of over 323 million people. Historically Africa hosts the two oldest universities in the world: The University of Al Qarawiyyin in Fez, Morocco, which opened in 859 AD, and Al-Azhar University in Egypt, part of the larger complex of institutions associated with Al-Azhar mosque and which currently enrolls two million students. This session will provide an overview of the educational and training challenges within the toxicology diaspora and present research findings from studies that can inform the approach that SOT SIGs take to address the dilemma going forward. The presentations will inform a panel that will discuss educational and environmental public health and toxicology training challenges and provide a forum to discuss innovative strategies to address toxicology educational and training curricula in Africa despite the lack of meaningful investment in educational and research infrastructure by most African governments. The session will end with a presentation that will discuss a novel framework in consideration of a society whose population is exposed to chemical and non-chemical stressors across the life course and within the context of a social ecological relevant to vulnerable populations.

Primary Endorser: Toxicologists of African Origin Special Interest Group

Chair Name: Darryl B. Hood

Affiliation: Ohio State University

City, State: Columbus, OH

Country: United States

Email: hood.188@osu.edu

SOT Member: Yes

Co-Chair Name: Abdel-Razak Kadry

Affiliation: US EPA

City, State: Washington, DC

Country: United States

Email: kadry.abdel@epa.gov

SOT Member: Yes

Presenter 1

Name: Mary Gulumian

Affiliation: National Institute for Occupational Health

City, State: Johannesburg,

Country: South Africa

Email: mary.gulumian@nioh.nhls.ac.za

SOT Member: Yes

Funding: SOT Full Funding

Presentation Title: Toxicology educational opportunities, needs, perception and practice in South Africa

Presentation Description: In this presentation, Evaluation of toxicology education in south Africa will be discussed. This evaluation is based on several surveys conducted within five years period. Degrees and diplomas as well as certificates that are granted by universities and Technikons in South Africa in scientific disciplines, such as forensic medicine, pharmacology, marine and veterinary sciences, environmental health, and occupational hygiene, include toxicology as one of the subjects in their overall syllabus. However, aspects of toxicology included in each of these courses are biased towards that subdiscipline and basic level of toxicology may be taught. Educational needs in toxicology in South Africa can be summarized as follows: (a) recognition of toxicology as a discipline at these tertiary education institutions and (b) creation of opportunities to study and obtain higher degrees in one or more of the many subdisciplines of toxicology. The results from a survey conducted on the toxicology syllabi offered at these tertiary education institutions are used to substantiate these needs.

Presenter 2

Name: Osama S El-Tawil

Affiliation: Cairo University, Faculty of Veterinary Medicine

City, State: Giza,

Country: Egypt

Email: OsamaEltawil@cu.edu.eg

SOT Member: Yes

Funding: SOT Full Funding

Presentation Title: Web based global classes, new model for toxicology and risk assessment education: advantages and challenges

Presentation Description: The advancement of global communication technology could provide a unique opportunity to expand the learning and research of toxicology and risk assessment. Global web based courses offer opportunities for collaboration with partner universities across the globe. The students Learn, share, and work together with peers from around the world to tackle global toxicological and risk assessment problems and design tangible solutions. In the current presentation, we will share the results of our collaboration with USA to advance the science of toxicology and risk assessment through offering web based training courses

Presenter 3

Name: Bernard Gadagbui

Affiliation: Toxicology Excellence in Risk Assessment

City, State: Cincinnati, OH

Country: United States

Email: bkgad@yahoo.com

SOT Member: Yes

Funding: **Presentation Title:** Roles of Nonprofit organizations (NGOs) in promoting toxicology and risk assessment training in Africa

Presentation Description: Independent non-profit organizations can provide a unique function to promote toxicology and risk assessment education and training. These organizations could protect human health by conducting scientific research and development on risk issues in a transparent and collaborative fashion and communicating the results widely. In this presentation, we will share our experience in providing

No SOT Funding Needed

Presenter 4

Name: Wilson Rumbeiha

Affiliation: Iowa State University

City, State: Ames, IA

Country: United States

Email: rumbeiha@iastate.edu

SOT Member: Yes

Funding: No SOT Funding Needed

Presentation Title: The Relevance of Veterinary Toxicology in Africa

Presentation Description: Veterinary toxicology is a specialized area of toxicology with impact on human, animal, and environmental health. In Western countries veterinary toxicologists are employed in veterinary diagnostic laboratories, in state and federal regulatory agencies, and in the private sector engaged in research. Because of the breadth of their medical training, veterinary toxicologist also plays a pivotal role in ecotoxicology where they use their knowledge and skills to identify chemically-induced damage to the ecosystems. The role of veterinary toxicologists in public health and food security cannot be overemphasized. Chemical residues negatively impact human health. Identification of potential chemical residues in the food chain is priority goal veterinary toxicologists. Because toxicants affect animals and people alike, veterinary toxicologists play a critical role in One Health. Unfortunately, the profession is almost non-existent in Africa. This presentation will highlight the importance of investing in veterinary toxicology education in Africa. A discussion of the veterinary toxicology curriculum in the US will be discussed with the objective of stimulating discussion on a suitable veterinary toxicology curriculum in Africa.

Presenter 5

Name: Olorunfemi Adetona

Affiliation: The Ohio State University

City, State: Columbus, OH

Country: United States

Email: oadetona@osu.edu

SOT Member: Yes

Funding: No SOT Funding Needed

Presentation Title: Africa needs for Training and Research in Environmental toxicology and Occupational health

Presentation Description: As in the rest of the globe, environmental factors are a leading cause of disease in Africa. The continent and sub-Saharan Africa still deals with historical environmental issues such as contaminated water and polluted air due to the residential combustion of solid biomass fuel, and faces new and emerging ones such as exposures to and management of electronic and other hazardous wastes. In sub-Saharan Africa, unsafe water/hygiene and air pollution are the third and fourth leading contributors to the

disability-adjusted life-years (DALYs) respectively. And the region along with Asia currently has the worst ambient air pollution. Occupational exposures, and “other environmental factors” are also among the top 15 to contributors to the region’s DALYs. However, the continent remains ill-equipped to solve these issues. Information about the extent of the problem is rather short, and the human capital and other resources necessary for addressing the situation are either inadequate or misapplied. There is especially a strong and urgent need to developing expertise in the fields of environmental toxicology and occupational health, and conducting related research towards the building of a foundation for establishing effective “home-grown” and/or externally aided solutions. The presentation will demonstrate this need by 1) an attempt at identifying the direction of research funding from major grant organization to Africa relative to the major disease risk factors, 2) examining the presence of formal curricula and expertise in environmental toxicology and occupational health in the top universities across the continent, and 3) literature searches to identify the relative volume of related research conducted on the continent using formal search algorithms including Cosine Similarity (article similarity calculation), Louvain Method (article clustering), and Force Atlas Algorithm (visualization). This exercise by comparing an area of need with the currently available resources will demonstrate that environment exposures are a neglected component of the disease burden in Africa.

Presenter 6**Name:** Darryl B. Hood**Affiliation:** The Ohio State University**City, State:** Columbus, OH**Country:** United States**Email:** hood.188@osu.edu**SOT Member:** Yes**Funding:** No SOT Funding Needed**Presentation Title:** An Innovative Framework for Use in Emerging Environmental Public Health Educational and Training Curricula in Africa

Presentation Description: Reliable information about formal Toxicology curricula and education-training in Africa is very scarce. Illustrative of that example is the fact that in the last 20-years there have been only but two publications that have discussed toxicology education in south Arica and Veterinary Toxicology education in Africa. To that end, the African content is in a stage of rebirth after a protracted period of stagnation. The African continent is now home to seven of the world’s 10 fastest growing economies. Africa is very rich in human capital, today, nearly 50 percent of Africans are under age 15. Additionally, Africa has the fastest growth rate in the world (due to a dramatic reduction in child mortality coupled with high fertility) with the continent expected to have an estimated 2.8 billion people by 2060. Consequently, education and training in Africa is slowly improving. To that end, it would be prudent to have a dissemination strategy for deploying educational and training projects in Africa. Relevant to this session, deployment of the *Public Health Exposome* Framework for educational and training purposes presents an opportunity. This talk will present work that has been conducted in the US linking existing large environmental databases and curated over the past seven years by the speakers interdisciplinary group. Applications of the *Public Health Exposome* will extend to curating environmental public health data from Africa to provide unprecedented opportunities to increase our understanding of cumulative risk and move towards identifying, analyzing, and modeling completed exposure pathways associated with many chronic diseases. The *Public Health Exposome* framework incorporates a transdisciplinary toolkit that includes use of untargeted, data driven, computational analytics to identify previously unrealized associations between environmental exposures and chronic disease risk as well as traditional and confirmatory, epidemiologic and bio-statistical analyses, and the use of multi-level, spatial-temporal and predictive analyses and modeling.

Featured Article

Camille R. Quinn (2018)



Journal of Family Medicine & Community Health

Editorial

And how are the Children? Establishing Historical Trauma as an Intersectional Social Determinant of Health for Vulnerable Populations

Camille R. Quinn*

Camille R. Quinn, The Ohio State University, USA

*Corresponding author

Camille R. Quinn, PhD, AM, LCSW, The Ohio State University, College of Social Work, 325U Stillman Hall, 1947 College Road, Columbus, OH 43210, USA, Tel: 617-292-6718; Email: quinn.395@osu.edu

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Editorial

Primary care providers should consider historical trauma as a part of their overall approach to patient care. Descending from an initial description of the experience of children of the Holocaust, historical trauma prompts a traditional question of Massai warriors “And how are the children?” or Kasserian Ingera.^[1] This question reflects the extension of historical trauma to inform the plight of other populations like African American descendants of slaves, and individuals involved in the juvenile/criminal justice system. By definition, historical trauma refers to a complex and collective trauma experienced over time and across generations by a group of people who share an identity, affiliation, or circumstance.^[2] Of greatest relevance to providers, populations (African Americans) historically subjected to historical traumas like slavery exhibit a higher prevalence of disease even several generations after the original trauma commenced.^[3] It has also been established that mass incarceration in the US is at heightened proportions, and African Americans are overrepresented in these systems, and there is a high prevalence of trauma histories among those incarcerated suggests a need to improve service provision to individuals undergoing reentry in community-based treatment settings.^[4]

Race-related historical trauma has measurable and distinct outcomes, including links to health disparities.^[3] Racial and ethnic minority populations continue to lag behind Whites with a quality of life diminished by illness from preventable chronic diseases and a life span cut short by premature death.^[5]

The World Health Organization's (WHO) Commission on social determinants of health (SDH) highlighted health disparities through a framework that emphasizes structural (socioeconomic and political contexts – public policies and culture and societal values) and intermediary determinants (health system) of health.^[6] The juvenile/criminal system could also be included as an intermediary determinant of health, which people of color disproportionately bear the burden of mass incarceration in the US.^[4,7] Structural and intermediary determinants directly impact one's health and well-being. Arguably, a case can be made for situating historical trauma in the structural and intermediary aspects of the SDH framework. In terms of African American descendants of slavery, historical trauma reflects the governance, policies, and cultural and societal values of its time; a legacy that persists today. The 246 years of slavery relegated African Americans to a legacy of debt – suffering – and trauma.^[1] Moreover, the growth of the US penal system with its overrepresentation of African Americans constitutes a new form of Jim Crow.^[8] Consequently, recognizing historical trauma as a social determinant of physical and mental health for African Americans is necessary for primary care providers to ensure more comprehensive service delivery and improve health outcomes.

Previous studies have used SDH as a conceptual framework to investigate approaches to emphasize individual, household- and community- factors like psychological distress (mental health problems and substance use), violence and education.^[9,10] Some scholars suggest incorporating a focus on intersectionality to increase awareness of identity characteristics like race, gender (including transgender), and sexual orientation, and the privileges or oppression these characteristics can incur.^[11] Specifically, scholars have conducted studies that focus on intersectional social determinants of health with HIV infected populations, including intimate partner violence and other forms of abuse that were associated with pre –and –post HIV diagnosis.^[12] Also, Stevens and colleagues noted that women identified being diagnosed with HIV as a 'traumatic event' that resulted in numerous changes, including severe misery, substance misuse, depression, suicidal behavior, etc. ^[13] Among low-income women in Baltimore, a relationship was noted between homelessness, incarceration, low-income, and HIV-related risk behaviors.^[14] Future research should include mixed methodology and focus on intersectional SDH, especially with justice-involved African Americans re-entering the community.

Reframing the problem of racism and the role of slavery is significant for providers to understand the cumulative impact of historical trauma on African Americans' health and well-being.^[8,15] This reframing is critical to respond to the question about how our children are doing. We need to focus on both addressing historical trauma at the individual and structural level to improve the health of the most vulnerable individuals. This will require institutional transformation through policy development to promote trauma-informed care, especially with people of color.^[11] Consequently, pathways within institutions like the health and juvenile/criminal justice systems need to be made, so the care delivery of practices consider the impact of trauma on individuals' lives.^[16] For example, city policies are quite important to health equity as they have the potential to reduce health disparities.^[17] In a study of 535 mayors and health commissioners of cities throughout the US, it was noted that many mayors and some commissioners were unaware of the potential of city policies to reduce health disparities. Also, liberal respondents were more likely than conservatives to strongly agree that disparities existed. Information about health disparities, and policy strategies to reduce them, needs to be more effectively communicated to city policymakers.^[18]

The ability to translate research about health disparities into public policies requires that the public and policymakers are knowledgeable about disparities and their causes.^[19] Primary care providers also need to be knowledgeable about health disparities, as well as the role of historical trauma and how this information would be useful for understanding patterns of care and subsequent physical and psychological health outcomes.

Conflict of Interest

The author declared no conflicts of interest with respect to the authorship and/or publication of this article.

Acknowledgements

The author thanks Karen Patricia Williams of The Ohio State University, College of Nursing, Darryl Hood of The Ohio State University, College of Public Health, Chip Allen of the Ohio Department of Public Health, and Angela Dawson of the Ohio Commission on Minority Health who provided insight and encouragement to complete this paper.

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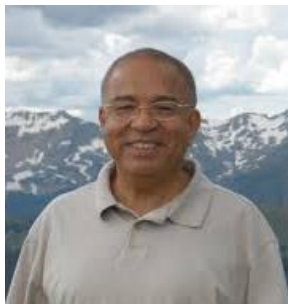
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Camille R. Quinn

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