

New Academic Program Workflow Form

General

Proposed Name: Climate Change & Public Health

Transaction Nbr: 00000000000174

Plan Type: Minor

Academic Career: Undergraduate

Degree Offered:

Do you want to offer a minor? N

Anticipated 1st Admission Term: Fall 2023

Details

Department(s):

PBLH

DEPTMNT ID	DEPARTMENT NAME	HOST
4201	College of Public Health	Y

Campus(es):

MAIN

LOCATION	DESCRIPTION
TUCSON	Tucson

Admission application terms for this plan: Spring: Y Summer: Y Fall: Y

Plan admission types:

Freshman: Y Transfer: Y Readmit: Y Graduate: N

Non Degree Certificate (UCRT only): N

Other (For Community Campus specifics): N

Plan Taxonomy: 51.2202, Environmental Health.

Program Length Type: Program Length Value: 0.00

Report as NSC Program:

SULA Special Program:

Print Option:

Diploma: Y Undergraduate Minor, Climate Change and Public Health

Transcript: Y Undergraduate Minor, Climate Change and Public Health

Conditions for Admission/Declaration for this Major:

At the declaration of this minor, a minimum cumulative GPA of 2.0 is required.

Requirements for Accreditation:

There are no additional requirements, other than the university requirement.

Program Comparisons

University Appropriateness

The proposed program supports the University of Arizona's ambitions for addressing grand challenges in the areas of disease prevention and treatment. The creation of a public health program focusing on climate change which includes trainings to improve public health response to health harms posed by the global climate crisis is aligned with MEZCOPH's mission to develop workforce training by integrating our faculty's research and instruction expertise, and to the Council on Education for Public Health (CEPH) accreditation criteria associated with the socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities.

Students completing this minor will be equipped with skills to serve in roles dedicated to environmental health and safety, working to protect public health and mitigate the impact of climate change on health and the environment.

Arizona University System

NBR	PROGRAM	DEGREE	#STDNTS	LOCATION	ACCRDT
1	Minor in Climate Change	BSES	65	Northern Arizona University	Y

Peer Comparison

Please see attached.

Faculty & Resources

Faculty

Current Faculty:

INSTR ID	NAME	DEPT	RANK	DEGREE	FCLTY/%
00909419	Mona Arora	4206	Assit. Prof	Doctor of Philosophy	.10
01011437	Jonathan Sexton	4206	Instructor	Doctor of Philosophy	.05
02134265	Aminata Kilungo	4206	Assit. Prof. Pract.	Doctor of Philosophy	.15
02914662	Priscilla Magrath	4205	Senior Lecturer	Doctor of Philosophy	.05
08605812	Kelly Reynolds	4206	Professor	Doctor of Philosophy	.05
08909093	Zhao Chen	4204	Distinguished Prof	Doctor of Philosophy	.05
16508329	Paloma Beamer	4206	Professor	Doctor of Philosophy	.05
22052139	Heidi Brown	4204	Assoc. Prof	Doctor of Philosophy	.10
22072156	Melissa MacLean	4206	Assit. Prof	Doctor of Philosophy	.05
22073285	Katherine Ellingson	4204	Assoc. Prof	Doctor of Philosophy	.10
22086640	Adaeze Oguegbu	4212	Lecturer	Doctor of Philosophy	.05
22090737	Yevheniia Varyvoda	4206	Instructor	Doctor of Philosophy	.10
23627391	Naqibullah Safi	4205	Adj. Assit. Prof	Doctor of Philosophy	.05

Additional Faculty:

We anticipate adding an additional .3 FTE faculty to support this program over the next three years.

Current Student & Faculty FTE

DEPARTMENT	UGRD HEAD COUNT	GRAD HEAD COUNT	FACULTY FTE
4201	660	515	77.00

Projected Student & Faculty FTE

DEPT	UGRD HEAD COUNT			GRAD HEAD COUNT			FACULTY FTE		
	YR 1	YR 2	YR 3	YR 1	YR 2	YR 3	YR 1	YR 2	YR 3
4201	660	670	680	0	0	0	77.00	77.20	77.30

Library

Acquisitions Needed:

None

Physical Facilities & Equipment

Existing Physical Facilities:

Existing physical facilities and equipment are adequate for this program.

Additional Facilities Required & Anticipated:

None

Other Support

Other Support Currently Available:

The MEZCOPH Office of Student Services and Alumni Affairs offers academic advising for all undergraduate degrees in our college. In addition, teaching assistants are assigned to courses with large enrollments.

Other Support Needed over the Next Three Years:

None

Comments During Approval Process

3/31/2023 12:54 PM

KATIELUPO

Comments
Approved.

3/31/2023 12:55 PM

MELANIECMADDEN

Comments
Approved.

3/31/2023 1:49 PM

JEHIRI

Comments
Approved.

3/31/2023 1:57 PM

MELANIECMADDEN

Comments
Approved.



New Academic Program – Minor ([Undergraduate](#))
CURRICULAR INFORMATION

I. MINOR DESCRIPTION:

Climate change is a global emergency that threatens the health, social, and economic development of all peoples of the world. The health and environmental impacts of climate change disproportionately affect poor and disadvantaged populations and contribute to the worsening of health and socioeconomic inequities. Climate change experts at the University of Arizona will provide world-class training in climate change that will equip undergraduate students with the knowledge and skills to plan strategies to address the health and environmental impacts of climate change. After completing this minor, students will demonstrate the ability to integrate the role of various disciplines of public health in addressing the impact of climate change on human and animal health and the environment. They will demonstrate the ability to create persuasive, authoritative, in-depth reports on climate change and its impact on health and the environment, using approaches that motivate positive behavior change and resilience in their communities.

II. JUSTIFICATION/NEED FOR THE MINOR:

The proposed undergraduate minor in climate change and public health is designed to address the severe shortage of trained professionals with the knowledge and skills required to address the impacts of climate change on health and the environment. The program will be offered completely online, guaranteeing access to all University of Arizona undergraduate students. From increased floods to wildfires to heat emergencies, climate change is already impacting health and the environment, with disadvantaged and Indigenous communities being affected the most. The University of Arizona has an ethical responsibility to ensure that its graduates are familiar with both current and future climate change and health threats in order to fulfill their duties to society. As the World Health Organization (WHO) asserts, responses to a global health emergency, whether a pandemic or a climate disaster, air pollution, or biodiversity loss, need resilient health systems and a highly proactive, skilled, and committed workforce. One of the key strategies to achieve climate change action and resilience is to strengthen educational and training programs in all institutions of higher learning. The Council on Education in Public Health – CEPH (Public Health Accrediting body) has called on public health institutions and programs to accelerate training in climate change, health, and the environment at the graduate and undergraduate levels for all students. Climate change has a central place in the strategic plan of the Mel and Enid Zuckerman College of Public Health. It is included in COPH fund-raising priorities for *Campaign Arizona*. Equally, climate change addresses the University of Arizona's Strategic Plan Pillar 1 (The Wildcat Journey: Driving Student Success for a Rapidly Changing World), Pillar 2 (Grand Challenge), and Pillar 3 (Arizona Advantage).

A Minor in Climate Change and Public Health will strengthen the qualifications and skill sets of the University of Arizona undergraduates, thus, preparing them for successful careers in government, industry, or graduate studies. The program will be attractive to students from diverse disciplines and University of Arizona campuses (Main Campus, Online, and Global Campus Direct), given the national and global importance of climate change and its impact on health (human and animal), and on the environment.

Data from a Lightcast (formerly Burning Glass) labor market analysis shows that employment in the field of environmental health is growing and is expected to increase by 9% nationwide and 25.9% in Arizona between 2022 and 2032. Environmental Scientists and Environmental Planners were two of the top posted job titles in this field from July 2021 to July 2022. Industry and governmental agencies have an urgent need for graduates with skills in environmental health and safety with an eye toward sustainable development that protects public health.

III. MINOR REQUIREMENTS:

Minimum total units required	18
Minimum upper-division units required	9
Total transfer units that may apply to minor	6
List any special requirements to declare/admission to this minor	At the declaration of this minor, a minimum cumulative GPA of 2.0 is required.
Minor requirements. List all required minor requirements including core and electives. Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from the home department head(s) for courses not owned by your department.	<p><i>Climate basics (6 units):</i> EVS 363 Climate Change: Human Causes, Social Consequences and Sustainable Responses (3) CPH 402: Climate Change and Health (3) EHS 425: A Public Health Lens to Climate Change (3)</p> <p><i>Climate influences on disease processes (6 units)</i> AIS 403 Globalization and Indigenous People (3) EHS 420: Environmentally Acquired Illnesses (3) CPH 481: Food System Preparedness for the Global Emergency Risks (3) CPH 432: Food in 2050 and Beyond: Climate Change and Global Health (3) EHS 439A: Outbreak & Environmental Microbiology: Then and Now (3) EPID/EHS 445: One Health Foundations (3) EPID 479: Infections and Epidemics (3) BIOS/EPID 452: Health Data Analysis and Communication Methods (3)</p> <p><i>Climate influences on health systems and health equity (3 units)</i> CPH 230: Public Health, Climate Change and Resilient Food Systems (3) GEOG 302 Introduction to Sustainable Development (3) CPH 432: Food in 2050 & Beyond: Climate Change and Global Health (3) EHS 426: Topics in Environmental Justice (3) CPH/GHI 427 Healthy Aging for Women (3) EPID 454B: Healthy Aging in Action II (3) HPS 433: Global Health</p> <p><i>Public health response to climate change (3 units)</i> EHS 220: Deadly Hype: Truth in the Age of (Mis)Information (3) PHP 308: Community Health Education for Disease Outbreaks (3) EHS 446 - One Health Approach and Case Studies (3) HPS 401: Introduction to Mapping for Public Health (3) HPS 409: Global Water, Sanitation and Hygiene (WaSH) (3) EHS 426: Topics in Environmental Justice (3) HPS 433: Global Health (3) EHS 489: Public Health Preparedness (3) HPS 459: Management of Global Public Health Emergencies (3)</p>
Internship, practicum, applied course requirements (Yes/No). If yes, provide a description.	No
Additional requirements (provide the description)	None
Any double-dipping restrictions (Yes/No)? If yes, provide description.	Students may apply 6 units towards the Bachelor of Science with a Public Health major, or a Bachelor of Arts in Wellness & Health Promotion Practice.

IV. CURRENT COURSES -

Course prefix and number	Units	Title	Course Description	Pre-requisites	Modes of delivery	Typically Offered	Did dept sign party to proposal?
CPH/GHI 230	3	Public Health, Climate Change, and Resilient Food Systems	<p>Food systems are one of the pillars of public health, supporting the livelihoods of billions of people and the nutrition of every human. Capacity to ensure food security and nutritional adequacy in the face of rapidly changing climate conditions will be a major determinant of the next century's global burden of disease. With climate-related shocks and stressors, this is a crucial time to explore the concept of food system resilience and actions to protect and improve food security from the public health perspective. Students will be introduced to the existing challenges facing food systems across the globe and case studies demonstrating how systems and the actors within them cope with the impact of climate change. Featuring topics include how climate change affects global and regional food consumption patterns and trends. Students will explore the basics of meal planning, food purchasing, and cooking in a warming world. The central component of the course is students' engagement with subject-matter experts addressing climate-induced issues in policy, practice, and research.</p>	None	online	F	Yes
EHS 425	3	A Public Health Lens to Climate Change	<p>How does a changing environment affect human health? What is the public health role in mitigating and</p>	None	online	Sp	Yes

			<p>addressing these implications? Why is a public health lens both relevant and necessary? Students in this course will directly interact with these questions and explore the fundamentals of global environmental change with a focus on climate change. Course topics include climate change, impacts on human health, policy development, adaptation and mitigation, health equity, and climate action co-benefits.</p>				
CPH/GHI 432	3	Food in 2050 and Beyond: Climate Change and Global Health	<p>The grand societal challenges have put pressure on traditional food systems and enabled fascinating technology- and nature-based advances shaping the global food outlook. This course is aimed to envision the future of food in the context of climate change, global health, sustainable cities, the food-water-energy nexus, and a digitally transformed world. Students explore the vision of the future of food under sustainability, middle-of-the-road, and business-as-usual scenarios considering changes in diet, population, agricultural practices, and climate. This course will showcase novel solutions aimed to design a food system that can protect and improve public health, sustain the environment, and be upgraded with equity at its core. As students gain insights into food trends, challenges, and emerging opportunities, they will develop a leadership vision of how to address health-conscious needs and demands for food self-sufficiency throughout the 21st century.</p>	None	In-person, online	F	Yes

			The course readings consider food from multiple perspectives: health, environmental, economic, social, and cultural, providing a holistic view of the modern food systems pathways.				
EHS 220	3	Deadly Hype: Finding Truth in the Age of (Mis)Information	Students will be equipped with critical thinking skills to evaluate media messaging around health-related topics. They will be trained to spot keywords, formats, authors, and references that indicate the trustworthiness of the information. They will also learn why the human brain is susceptible to different types of messages and will engage in perspective-switching of different stakeholders throughout the semester. They will actively perform critical analyses and close readings of different messages around alcohol, pesticide use, marijuana & psychoactive drugs, exercise, dieting, and a student-choice topic, using tools from the semester. Students will produce a social media product or participate in a debate on a health claim of their choice by the end of the semester.	None	In-person	Sp	Yes
PHP 308	3	Community Health Education for Disease Outbreaks	This course focuses on building the foundation for selecting and applying community health education methods, becoming a health education professional, and promoting multicultural diversity and social marketing concepts. This course is an overview of community health education and its role in improving the health of individuals and populations. This course highlights the importance of contact	None	Online	F, Sp	Yes

			tracing to mitigate community transmission. This course teaches students to effectively communicate health education messages and positively influence the norms and behaviors of both individuals and communities. Practical guides in community health education will involve steps for implementing skills, tips and techniques for successful implementation, strategies for overcoming challenges, and expected outcomes.				
GEOG/EVS 302	3	Introduction to Sustainable Development	Introduction to Sustainable Development is a foundational course in understanding the policies and strategies that constitute "smart" regional development in US metropolitan areas.	None	In-person, online	F, Sp, Su	Yes
GEOG/EVS 363	3	Climate Change: Human Causes, Social Consequences, and Sustainable Responses	Climate change has social causes and consequences, and the responses and solutions involve changes in human behavior, institutions, and technologies. This course analyses the social causes of climate change including the economic, political, social, and cultural drivers of greenhouse gas emissions and land use, and the impacts of climate change on society such as vulnerability and impacts in sectors such as food, water, health, cities, and sustainable development. It also discusses solutions and responses to climate change such as changing policies, behavior, and attitudes, climate mitigation and adaptation, and the role of governments, cities, the private sector, social movements, and individuals from the local to the global level.	None	In-person, online	F	Yes

HPS 401	3	Introduction to Mapping for Public Health	This course will provide an introduction to public health mapping. Course content includes fundamental mapping concepts, current applications of mapping within the public health field, and exercises to gain practical experience using web-based GIS technology to communicate public health messages. This is a writing emphasis course.	EPID 309	Online	Su	Yes
EPID 402	3	Climate Change and Health	In this course, students will explore the effects of climate and climate change on health. Over the course, the content moves from the fundamental science of climate change and physiology, current and predicted effects, to the framing and communication of climate health impacts. Students highlight their knowledge through course deliverables including drafting white papers, peer lectures, and story maps.	None	Online, in-person	Sp	Yes
AIS 403	3	Globalization and Indigenous People	Globalization is a term often heard and read in academic circles and in national news, but less often understood by the average person. However, because it is the world political, economic, and social system currently in place as the next evolution of capitalism, everyone should have a basic notion of the definition, and what effects it has and will continue to have on the lives of everyone. Indigenous People of the world are the human population most adversely affected by globalization and the group that has the most experience in sometimes resisting, sometimes adapting, and sometimes creating a syncretism of responses to changing world situations.	None	In-person	Sp	Yes

			This course first gives an introduction to the history, politics, and economics of globalization, then moves on to discuss both the benefits and challenges of globalization through the perspectives of global Indigenous peoples.				
HPS 409	3	Global Water, Sanitation, and Hygiene	The course is designed to provide the students with an understanding of Global Water, Sanitation, and Hygiene (WaSH). The course will examine the historic background, health impact, and global burden of diseases related to WaSH. In addition, the course will examine the impact of WaSH and gender, and look at WaSH technologies and programming, current status, and challenges in achieving WaSH for all.	None	Online	Sp	Yes
EHS 420	3	Environmentally Acquired Illnesses	Illnesses related to environmental exposures are on the rise but frequently misdiagnosed due to a lack of understanding of the complexities of multiple hazard exposures and variable health outcomes. This course provides an overview of common and emerging Environmentally Acquired Illnesses (EAIs) and explores the multitude of hazards, conditions, and predisposing factors related to human disease. Students will learn how to identify gaps in the current model of patient evaluation and treatment. In addition, they will critique current research design and gain hands on experience in developing a systems approach to understanding, evaluating, and communicating the impact and control of EAIs relative to human health.	None	Online	Sp	Yes

EHS 426	3	Topics in Environmental Justice	This course will provide an introduction to environmental justice concepts as they apply to public health. Issues relating to race/ethnicity, gender, social class, environmental policy and law will be used to critically examine environmental health disparities.	None	In-person	F	Yes
CPH/GHI 427	3	Healthy Aging for Women	This course is designed to provide students with current information on research and programs related to healthy aging in women from a global perspective. Students will develop skills in assessing population status and intervention effects for healthy aging in women.	None	Online	F	Yes
HPS 433	3	Global Health	Examines major health problems of underdeveloped, developed, and emerging nations. Students conduct in-depth analyses of health problems among various populations in multicultural settings, both nationally and internationally.	None	In-person, online	F, Sp	Yes
EHS 439A	3	Outbreaks and Environmental Microbiology: Then to Now	This course will examine historical and day present-day outbreaks in regards to the environmental microbiology of pathogens. Different pathogen control interventions that were used to mitigate the outbreaks will also be explored.	EPID309 Introduction to Epidemiology or MIC 205A General Microbiology (strongly recommended) or permission of instructor.	Online	Su	Yes
EPID/EHS 445	3	One Health Foundations	This course introduces a transdisciplinary One Health framework that focuses on the interconnection between people, animals and the environment to examine health drivers and outcomes at local, regional, national, and global levels.	EPID 309 - Introduction to Epidemiology recommended.	Online	F	Yes
EHS 446	3	One Health Approach and Cases Studies	This course explores the intersections of the environment, animal, and human health, and how diseases are addressed	EHS/EPID 445 One Health Foundations	Online	F	Yes

			using the One Health approach.				
BIOS/EPID 452	3	Health Data Analysis and Communication Methods	The course will bridge the concepts learned in the introduction to epidemiology and biostatistics courses to teach students the skills to identify and implement the appropriate statistical methods to answer public health and biomedical research questions based on study and sampling designs. Students will apply these skills to large public health and biomedical databases. Students will learn how to present their results graphically to communicate findings to lay audiences.	None	In-person	Sp	Yes
EPID 454B	3	Healthy Aging in Action II	This is the second part of a two-semester course which opens to undergraduate and graduate students from any discipline who have completed the first part of this two-semester course (EPID 454A/554A). During the second part of this two-semester course, students will gain field experience on implementing and evaluating innovative programs for promoting physical and brain health and wellbeing in older adult population.	EPID 454A	In-person	F	Yes
EPID 479	3	Infections and Epidemics	This course will take a multidisciplinary approach to examine the impact of infectious diseases on human populations, with an emphasis on relevant epidemiologic concepts.	Prerequisite or concurrent enrollment in EPID 309. BIOS 376 Introduction to Biostatistics or equivalent (recommended).	In-person	Sp	Yes
EHS 489	3	Public Health Preparedness	This course will provide the participants with a basic knowledge of public health preparedness and response using an all-hazards approach: nuclear, biological, chemical, and natural disaster, and an opportunity to apply this	None	Online	F	Yes

			content in a mock critical incident event.				
CPH/GHI 481	3	Food System Preparedness for Global Emergency Risks	At the aggregate level, climate variability, a rising number of active violent conflicts, infectious diseases, and human environmental damage have shaped the vulnerability of food systems and nutrition determinants of health. The aim of the course is to provide an overview of the ways food systems have been impacted by global risks and introduce strategies that individuals and communities can utilize to enhance the ability to prepare for, recover from, and adapt to unexpected challenges. The course is designed to be practical, relevant, stimulating, and equipped with a range of preparedness-specific solutions drawn from real-world examples. The course expands students' experiential learning by examining the strengths and limitations of responses to address food systems' emergency needs and defend vulnerable communities.	None	Online	Sp	Yes
HPS 459	3	Management of Global Public Health Emergencies	Designed to comprehensively meet the needs of public health practitioners to learn the overall management of public health emergencies and to equip them with knowledge and skills beyond specific diseases of concern, but also in overall coordination, leadership, communication, and resource mobilization. The course has three major domains, including; a) Principles of Communicable Diseases Control and Humanitarian Coordination Architecture, b) Communication (Risk	None	Online	Sp	Yes

			Communication, Behavior Change Communication, Advocacy, and External Communication), and c) Response planning				
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V. NEW COURSES NEEDED:

Course prefix and number (include cross-listings)	Units	Title	Pre-requisites	Modes of delivery (online, in-person, hybrid)	Course Fee? (Y/N) More info here.	Course Form transaction number	Anticipated first term offered	Use in the program (required/elective)
None								

VI. FACULTY INFORMATION-

Faculty Member	Involvement	UA Vitae link or "CV attached"
Aminata Kilungo, PhD	Course instruction	https://publichealth.arizona.edu/directory/aminata-kilungo
Kacey Ernst, PhD	Course instruction	https://publichealth.arizona.edu/directory/kacey-ernst
Mona Arora, PhD	Course instruction	https://publichealth.arizona.edu/directory/mona-arora
Heidi Brown, PhD	Course instruction	https://publichealth.arizona.edu/directory/heidi-brown
Kristen Pogreba-Brown, PhD	Course instruction	https://publichealth.arizona.edu/directory/kristen-pogreba-brown
Kate Ellingson, PhD	Course instruction	https://publichealth.arizona.edu/directory/katherine-ellingson
Yevheniia Varyvoda, PhD	Course instruction	https://publichealth.arizona.edu/directory/yevheniia-varyvoda
Adaeze Oguegbu, PhD	Course instruction	https://profiles.arizona.edu/person/aoguegbu
Melissa Furlong, PhD	Course instruction	https://profiles.arizona.edu/person/mfurlong
Kelly Reynolds, PhD	Course instruction	https://profiles.arizona.edu/person/reynolds

VII. LEARNING OUTCOMES –

Program: Undergraduate Minor in Climate Change and Public Health

Learning Outcome #1: <i>Identify the underlying drivers of climate change, how they will change weather patterns, and the role of public health in addressing the health impacts of climate change.</i>
Concepts: Climate change, Public health knowledge, Critical thinking
Competencies: Utilizing the role of the various disciplines of public health (epidemiology, biostatistics, environmental health, health policy, and health behavior) students will critically address the impact of climate change on human and animal health and the environment
Assessment Methods: Discussion Board assignment, individual drop-box written assignments, and a quiz.
Measures: Students' quiz scores, instructor grading of discussion board postings, and drop-box assignment using rubrics.
Learning Outcome #2: <i>Describe the methods and tools utilized to quantify the health impacts of climate change and propose public health measures to reduce the impact of climate change from health equity.</i>
Concepts: Tools and methods for assessing the impact of climate change on health and the environment. Case studies of climate change adaptation and mitigation actions. Public health programs and policies to reduce the disproportionate impact of climate change.
Competencies: Students will demonstrate the ability to analyze the impact of climate change on health and the environment. They will propose public health measures to reduce the impact of climate change from a health equity perspective.
Assessment Methods: Discussion board assignment and quiz.
Measures: Students' quiz scores, instructor grading of discussion board postings, using rubrics
Learning Outcome #3: <i>Appraise the impact of climate change on food security (food access, food availability, utilization, and stability) and the implications for human health</i>
Concepts: Case studies and scenarios to appraise the impact of climate change on food security.

Competencies: Students will demonstrate the ability to create scenarios for the impact of climate change on food security and how the impact disproportionately affects poor communities and minority populations.
Assessment Methods: Discussion assignment, individual drop-box assignment, and class presentation using rubrics
Measures: Instructor grading of discussion assignment, drop-box assignment, and presentation, using rubrics
<i>Learning Outcome #4: Develop tools to communicate climate change effects on health</i>
Concepts: Use technology applications e.g., ArcGIS Online to StoryMap to connect climate change to a health and environmental impacts Create a presentation to motivate behavior change and resilience in relation to climate change.
Competencies: Students will demonstrate the ability to create a persuasive, authoritative, in-depth report (White Paper) on climate change and its impact on human and animal health and the environment, using StoryMap
Assessment Methods: Discussion board assignment, StoryMap, and White Paper
Measures: Instructor grading of Discussion assignment, StoryMap/presentation, and White Paper, using rubrics.

VIII. CURRICULUM MAP: Undergraduate Minor in Climate Change and Public Health

Courses	Learning Outcomes			
	<i>Identify the underlying drivers of climate change, how they will change weather patterns, and the role of public health in addressing the health impacts of climate change</i>	<i>Describe the methods and tools utilized to quantify the health impacts of climate change and propose public health measures to reduce the impact of climate change from health equity</i>	<i>Appraise the impact of climate change on food security (food access, food availability, utilization, and stability) and the implications for human health</i>	<i>Develop tools to communicate climate change effects on health</i>
GHI 230 EVS 363 GEOG 302	I/A			P/A
EHS 425 EHS 489 HPS 459	P/A	P/A		
CPH 432 AIS 403	A		P/A	
CHP 402	A			

IX. ASSESSMENT PLAN FOR STUDENT LEARNING- using the table below, provide a schedule for program assessment of intended student learning outcomes 1) while students are in the program and 2) after completion of the minor. Add rows as needed. Delete EXAMPLE row.

Learning Outcomes	Sources(s) of Evidence	Assessment Measures	Data Collection Points
<i>Identify the underlying drivers of climate change, how they will change weather patterns, and the role of public health in addressing the health impacts of</i>	Course-embedded assessments Student course survey	Discussion Board assignments, individual drop-box written assignments, and a quiz.	Weekly continuous assessments, a mid-term paper, an end-of-course exam

<i>climate change</i>			
<i>Describe the methods and tools utilized to quantify the health impacts of climate change and propose public health measures to reduce the impact of climate change from health equity</i>	Course-embedded assessments Student course survey	Discussion board assignment and quiz.	Weekly continuous assessments, end-of-course exam
<i>Appraise the impact of climate change on food security (food access, food availability, utilization, and stability) and the implications for human health</i>	Course-embedded assessments Student course survey	Discussion assignment, individual drop-box assignment, and class presentation using rubrics	Weekly continuous assessments, end-of-course exam
<i>Develop tools to communicate climate change effects on health</i>	Course-embedded assessments Student course survey	Discussion board assignment, StoryMap, and White Paper	Weekly continuous assessments, presentations, and end-of-course exam

X. ANTICIPATED STUDENT ENROLLMENT-complete the table below. What concrete evidence/data was used to arrive at the numbers?

5-YEAR PROJECTED ANNUAL ENROLLMENT					
	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Number of Students	10	20	30	35	45

Data/evidence used to determine projected enrollment numbers:

The College of Public Health has an established minor in Public Health with over 200 students. The anticipated student enrollment for the first year is 10 students. However, it is possible that we will have more students given the online nature of the program, and the growing interest in climate change and health.

XI. ANTICIPATED MINORS AWARDED- complete the table below, beginning with the first year in which minors will be awarded. How did you arrive at these numbers? Take into consideration departmental retention rates.

PROJECTED MINORS AWARDED ANNUALLY					
	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Number of Minors	9	16	27	32	41

Data/evidence used to determine number of anticipated minors awarded annually:

Graduation rates are based on an estimated 90% retention.

XII. PROGRAM DEVELOPMENT TIMELINE- describe plans and timelines for 1) marketing the minor and 2) student recruitment activities.

Marketing of the undergraduate minor in climate change public health will be included as part of the broader effort to market our undergraduate degree programs (BS in Public Health and BA in Wellness and Health Promotion Practice). We have budgeted for the marketing and student recruitment efforts for Summer-Fall 2023. As part of these efforts, we will utilize a multi-pronged approach that will include working with our Director for Distance Education, the Director of Online Education, the College Online Undergraduate Program Coordinator, UArizona Online, alumni, and Public Health student ambassadors, to recruit potential students. Recruitment strategies will also deploy social media campaigns, presentations, and information sessions to high school students as well as freshman classes throughout campus.

XIII. DIVERSITY AND INCLUSION-describe how you will recruit diverse students and faculty to this minor. In addition, describe retention efforts in place or being developed in order to retain students.

As part of the marketing and recruitment process, we will target a diverse body of students and working professionals – locally, regionally, nationally, and globally. MEZCOPH has a diverse body of faculty who will contribute to courses offered in the minor. The minor in Climate Change and Public Health will be taught by existing faculty.

XIV. REQUIRED SIGNATURES

Associate Dean:

John Ehiri, Ph.D.
Associate Dean for Academic Affairs
Mel & Enid Zuckerman College of Public Health

Associate Dean's signature:



Date: February 22, 2023

Dean:

Iman Hakim, MBBCh, Ph.D., MPH
Dean, Mel & Enid Zuckerman College of Public Health

Dean's signature:



Date: February 28, 2023

For use by Curricular Affairs:

Undergraduate:

Committee	Approval date
APS	
Undergraduate Council	
Undergraduate College Academic Administrators Council	
Faculty Senate	



BUDGET PROJECTION FORM

Name of Proposed Program or Unit: Undergraduate Minor in Climate Change and Public Health (Main Campus, Arizona Online, Global Direct)

Budget Contact Person: John Ehiri, PhD	Projected		
	1st Year 2023 - 2024	2nd Year 2024 - 2025	3rd Year 2025 - 2026
METRICS			
Net increase in annual college enrollment UG	10	20	30
Net increase in college SCH UG	90	270	450
Net increase in annual college enrollment Grad			
Net increase in college SCH Grad			
Number of enrollments being charged a Program Fee			
New Sponsored Activity (MTDC)			
Number of Faculty FTE		0.20	0.30
FUNDING SOURCES			
<u>Continuing Sources</u>			
UG AIB Revenue	17,820	53,460	89,100
Grad AIB Revenue			
Program Fee Revenue (net of revenue sharing)			
F and A AIB Revenues			
Reallocation from existing College funds (attach description)			
Other Items (attach description)			
Total Continuing	\$ 17,820	\$ 53,460	\$ 89,100
<u>One-time Sources</u>			
College fund balances			
Institutional Strategic Investment			
Gift Funding			
Other Items (attach description)			
Total One-time	\$ -	\$ -	\$ -
TOTAL SOURCES	\$ 17,820	\$ 53,460	\$ 89,100
EXPENDITURE ITEMS			
<u>Continuing Expenditures</u>			
Faculty		26,000	39,000
Other Personnel			
Employee Related Expense		8,320	12,480
Graduate Assistantships			
Other Graduate Aid			
Operations (materials, supplies, phones, etc.)			
Additional Space Cost			
Other Items (attach description)			
Total Continuing	\$ -	\$ 34,320	\$ 51,480
<u>One-time Expenditures</u>			
Construction or Renovation			
Start-up Equipment			
Replace Equipment			
Library Resources			
Other Items (attach description)			
Total One-time	\$ -	\$ -	\$ -
TOTAL EXPENDITURES	\$ -	\$ 34,320	\$ 51,480
Net Projected Fiscal Effect	\$ 17,820	\$ 19,140	\$ 37,620



**New Academic Program
PEER COMPARISON**

Program name, degree, and institution	Undergraduate Minor in Climate Change and Public Health	Peer 1: Undergraduate Minor in Environment and Health – Michigan State University	Peer 2: Climate and Health Certificate – Johns Hopkins University
Current number of students enrolled			
Program Description	<p>Climate change is a global emergency that threatens the health, social, and economic development of all peoples of the world. The health and environmental impacts of climate change disproportionately affect poor and disadvantaged populations and contribute to the worsening of health and socioeconomic inequities. Climate change experts at the University of Arizona will provide world-class training in climate change that will equip undergraduate students with the knowledge and skills to plan strategies to address the health and environmental impacts of climate change. After completing this minor, students will demonstrate the ability to integrate the role of various disciplines of public health in addressing the impact of climate change on human and animal health and the environment. They will demonstrate the ability to create</p>	<p style="text-align: center;"><u>Link to Program</u></p> <p>The Minor in Environment and Health, administered by the Department of Geography, Environment and Health, enhances the education and training of students who are interested in issues relating to the environment and health, including students who wish to prepare themselves for advanced degree programs in environmental studies, health studies or careers in related fields.</p>	<p style="text-align: center;"><u>Link to Program</u></p> <p>Climate change represents one of the most pressing issues of our time, affecting every nation and person. This certificate program covers climate change, its effects on public health, and ways to mitigate the impacts. Courses explore the effects of energy production and climate change on food, water, air and human health, through the lens of social justice.</p>

	persuasive, authoritative, in-depth report on climate change and its impact on health and the environment, using approaches that motivate positive behavior change and resilience in their communities.		
Target Careers	Entry level positions in consumer safety and environmental health, non-profit organizations, government and non-governmental agencies, and community health	Entry level positions in consumer safety and environmental health, non-profit organizations, government and non-governmental agencies, and community health	Entry level positions in consumer safety and environmental health, non-profit organizations, government and non-governmental agencies, and community health
Emphases? (Yes/No) List, if applicable	No	No	No
Minimum # of units required	18	15	18 (quarter system)
Level of Math required (if applicable)	N/A	N/A	N/A
Level of Second Language required (if applicable)	N/A	N/A	N/A
Pre-Major? (Yes/No) If yes, provide requirements.	No	No	No
Special requirements to declare/gain admission? (i.e. pre-requisites, GPA, application, etc.)	At the declaration of this minor, a minimum cumulative GPA of 2.0 is required.	The minor is available to students who are enrolled in bachelor's degree programs at Michigan State University.	Students who are not enrolled in a graduate degree program must have earned at least a bachelor's degree from an accredited university and submit an admissions application to the certificate program. Students already enrolled in a program at JHU must submit a <u>declaration of intent form</u> prior to starting coursework.

Internship, practicum, or applied/experiential requirements? If yes, describe.	No	No	No
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Additional questions:

1. How does the proposed program align with peer programs? Briefly summarize the similarities between the proposed program and peers, which could include curriculum, overall themes, faculty expertise, intended audience, etc.

Michigan State University and John Hopkins University offer programs with similar themes, focusing on the intersection of climate change and public health. All three programs are developed to enhance student's knowledge within a wide range of disciplines, providing an overview of the impact climate change will have on multiple aspects of human health, including food systems, disease outbreaks, and global populations.

2. How does the proposed program stand out or differ from peer programs? Briefly summarize the differences between the proposed program and peers, which could include curriculum, overall themes, faculty expertise, intended audience, etc.

The University of Arizona Mel & Enid Zuckerman College of Public Health has a unique opportunity to develop an undergraduate minor with a focus on climate change through a broad public health lens. Undergraduate programs that address the health dimensions of our rapidly changing environment are rare, as most programs focus on the scientific and socio-political dimensions of climate change. The program at MSU offers electives in public health nutrition and epidemiology, however its primary focus is human geography. The Climate and Health Certificate at Johns Hopkins University is a better match in terms of training and education, however it is intended as a post-baccalaureate program, for students who are seeking additional training and credentials in this climate change.

3. How do these differences make this program more applicable to the target student population and/or a better fit for the University of Arizona?

The proposed undergraduate minor in Climate Change and Public Health draws upon the strengths of MEZOPH faculty's wide-ranging expertise in climate change and public health in the area of one health, global health, food systems, disease epidemiology and emergency preparedness. With the demand for health professionals trained in climate change continuing to climb, this minor will complement a variety of majors and enhance students' marketability and career opportunities within this growing field.

Subject: Re: AIS 403: Globalization and Indigenous People
Date: Monday, December 5, 2022 at 11:22:08 AM Mountain Standard Time
From: Gilbert, Matthew Sakiestewa - (sakiestewa)
To: Ehiri, John E - (jehiri)
CC: Embry, Danielle M - (dembry)
Attachments: image001.png

Hi John,

I failed to send you an email at the end of last week. My apologies.

AIS agrees to your request. We are pleased to offer AIS 403 as an elective in your minor.

All best,

Matt

Matthew Sakiestewa Gilbert
Professor and Head of American Indian Studies
Professor of History
University of Arizona
Ofc: 520-626-9772

From: Gilbert, Matthew Sakiestewa - (sakiestewa) <sakiestewa@arizona.edu>
Sent: Monday, November 28, 2022 6:53 PM
To: Ehiri, John E - (jehiri) <jehiri@arizona.edu>
Cc: Embry, Danielle M - (dembry) <dembry@arizona.edu>
Subject: Re: AIS 403: Globalization and Indigenous People

Dear John,

Thank you for your email. I have passed along your request to our AIS Curriculum Committee (part of our internal procedure when we get these requests). I will get back to you on Wednesday with an official answer, which I have every reason to believe will be in the affirmative.

All best,

Matt

Matthew Sakiestewa Gilbert
Professor and Head of American Indian Studies
Professor of History
University of Arizona
Ofc: 520-626-9772

From: Ehiri, John E - (jehiri) <jehiri@arizona.edu>
Sent: Saturday, November 26, 2022 3:50 PM
To: Gilbert, Matthew Sakiestewa - (sakiestewa) <sakiestewa@arizona.edu>

Cc: Embry, Danielle M - (dembry) <dembry@arizona.edu>

Subject: AIS 403: Globalization and Indigenous People

Dear Dr. Gilbert,

Our college is developing an undergraduate minor in climate change and public health. The following course offered in your department will be a valuable addition to the proposed minor, and we are seeking your kind permission to include it as an elective.

- AIS 403: Globalization and Indigenous People

I would be most grateful if you would please let me know at your earliest convenience, that we have your approval to include this courses in our undergraduate minor in climate change and public health.

Many thanks in advance.

John

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John Ehiri, PhD, MPH, MSc (Econ.)

Professor & Associate Dean for Academic Affairs



1295 N. Martin Ave.
Suite A317H
Tucson, AZ 85724, USA
Email: jehiri@arizona.edu
Phone: 520-626-1355

From Springer Publishers

Maternal and Child Health:
Global Challenges, Programs and Policies
Ehiri, John (Ed.)
<http://www.springer.com/medicine/book/978-0-387-89244-3>

Other Scientific Publications:

<https://pubmed.ncbi.nlm.nih.gov/?term=Ehiri&sort=date&size=200>

From: [Bauer, Carl J - \(cjbauer\)](#)
To: [Ehiri, John E - \(jehiri\)](#)
Cc: [Embry, Danielle M - \(dembry\)](#)
Subject: RE: GEOG302 and EVS 363
Date: Wednesday, November 30, 2022 6:30:28 AM
Attachments: [image001.png](#)

We would be happy for your program to include our classes as electives.

Thanks, Carl

Carl J. Bauer, Ph.D.
Professor & Director, School of Geography, Development & Environment
University of Arizona
ENR2 Building, 1064 E. Lowell St., #S-525 (deliveries to #S-434)
P.O. Box 210137
Tucson, AZ 85721, U.S.A.
Tel. 520-621-1917; fax 520-621-2889
cjbauer@arizona.edu
<https://geography.arizona.edu/people/carl-bauer>
<http://cjbauer.faculty.arizona.edu>

From: Ehiri, John E - (jehiri) <jehiri@arizona.edu>
Sent: Saturday, November 26, 2022 3:52 PM
To: Bauer, Carl J - (cjbauer) <cjbauer@arizona.edu>
Cc: Embry, Danielle M - (dembry) <dembry@arizona.edu>
Subject: GEOG302 and EVS 363

Dear Dr. Bauer,

Our college is developing an undergraduate minor in climate change and public health. The following courses offered in your department will be valuable additions to the proposed minor, and we are seeking your kind permission to include them as electives.

- GEOG 302: Introduction to Sustainable Development
- EVS 363: Climate Change: Human Causes, Social Consequences and Sustainable Responses

I would be most grateful if you would please let me know at your earliest convenience, that we have your approval to include these courses in our undergraduate minor in climate change and public health.

Many thanks in advance.

John

John Ehiri, PhD, MPH, MSc (Econ.)
Professor & Associate Dean for Academic Affairs



MEL AND ENID
ZUCKERMAN COLLEGE
OF PUBLIC HEALTH

1295 N. Martin Ave.
Suite A317H
Tucson, AZ 85724, USA
Email: jehiri@arizona.edu
Phone: 520-626-1355

From Springer Publishers

Maternal and Child Health:
Global Challenges, Programs and Policies
Ehiri, John (Ed.)
<http://www.springer.com/medicine/book/978-0-387-89244-3>

Other Scientific Publications:

<https://pubmed.ncbi.nlm.nih.gov/?term=Ehiri&sort=date&size=200>

Embry, Danielle M - (dembry)

From: Marchello, Elaine V - (evm)
Sent: Wednesday, March 29, 2023 8:19 AM
To: Embry, Danielle M - (dembry)
Subject: RE: [Assessment Assistance] Learning Outcomes & Curriculum Map Assistance for proposed undergraduate minor

Danielle,
These changes look good and I approve this assessment portion of this proposal.

Elaine

Elaine Marchello, Ph.D.
Assistant Director, Assessment
University of Arizona
University Center for Assessment, Teaching and Technology
Integrated Learning Center Bldg 70
Room 105A
Tucson, AZ 85721
(520) 621-1328

From: Embry, Danielle M - (dembry) <dembry@arizona.edu>
Sent: Wednesday, March 29, 2023 8:14 AM
To: Marchello, Elaine V - (evm) <evm@arizona.edu>
Subject: RE: [Assessment Assistance] Learning Outcomes & Curriculum Map Assistance for proposed undergraduate minor

Hi Elaine.

Good morning. Just wanted to check in and gather your thoughts on the attached version of the proposal. If the learning outcomes/map look good, I believe we can submit an email confirmation from you as well.

Kindly let me know.
Many thanks,
Danielle

From: Embry, Danielle M - (dembry) <dembry@arizona.edu>
Sent: Thursday, March 23, 2023 10:35 AM
To: Marchello, Elaine V - (evm) <evm@arizona.edu>
Cc: Ehiri, John E - (jehiri) <jehiri@arizona.edu>
Subject: Re: [Assessment Assistance] Learning Outcomes & Curriculum Map Assistance for proposed undergraduate minor

Thanks Elaine.

Dr. Ehiri has made the revisions you suggested and I've attached the finalized document here.