



# Integrated Learning Experience: Riley County Health Department & Kansas Department of Health and Environment

Sierrah Haas

Master of Public Health Candidate  
Infectious Diseases and Zoonoses

# MPH Committee



Dr. Ellyn R. Mulcahy

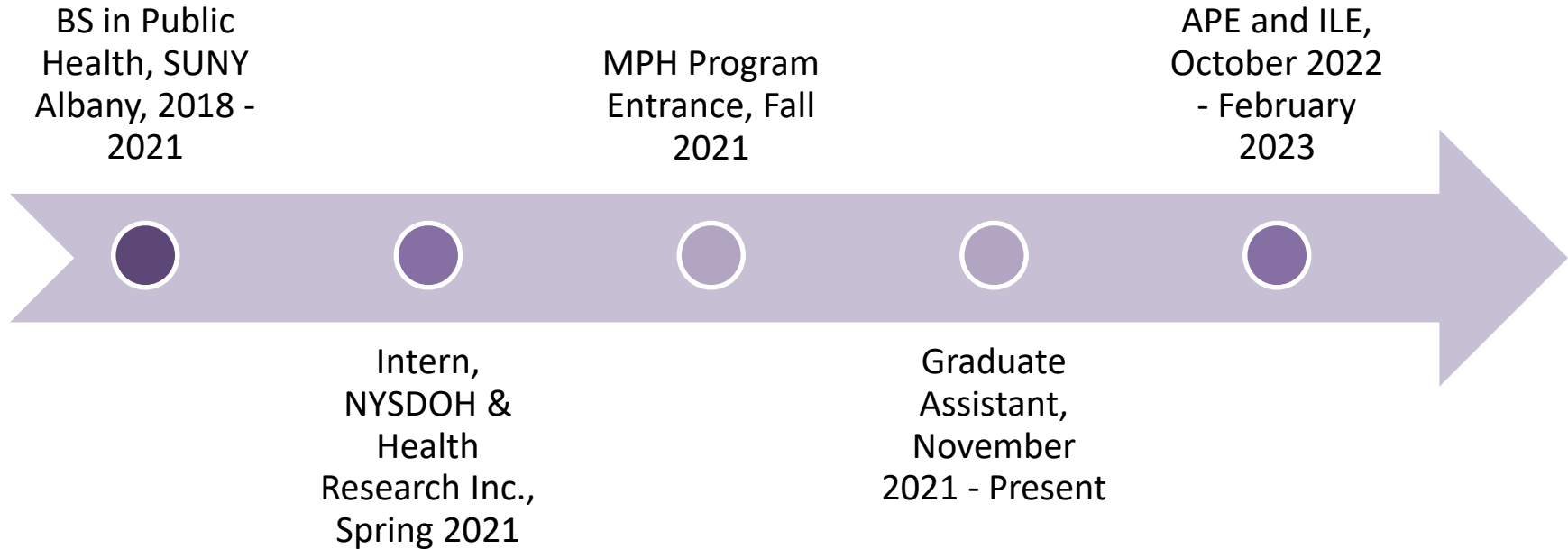


Dr. Robert Larson



Dr. Katherine Nelson

# Academic Timeline



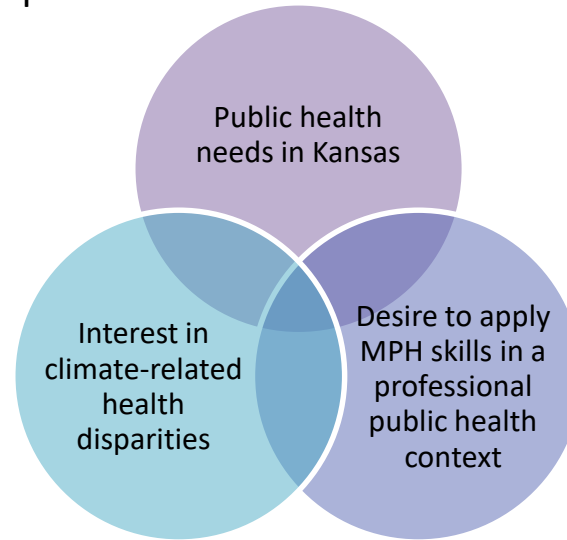
# Experience Overview

## Riley County Health Department (65%)

- Preceptor: Ms. Skylar German
- County level public health operations
- Public Health Emergency Preparedness
- Community outreach

## Kansas Department of Health & Environment (35%)

- Preceptor: Dr. Steven Corbett
- Preliminary study
- Introduction to mapping data



# Overall Learning Objectives



Understand public health emergency preparedness and emergency response processes at the county level in KS.



Locate KS census tracts of focus to direct public health resources through a spatial analysis of extreme heat data and potentially related health outcomes.



Propose improvements in the distribution of public health emergency preparedness resources and education in Kansas.

# Overview of Portfolio Products



- 1 RCHD CASPER Surveys
- 2 RCHD Emergency Preparedness Guide
- 3 GIS Maps
- 4 Research Poster

# Experience Part 1: RCHD activities



- Attended meetings
- Completed online public health trainings
- Participated in community outreach events
- Reviewed emergency preparedness documentation
- Assisted with virus testing

# RCHD Product 1: CASPER Surveys

- Community Assessment for Public Health Emergency Response
- CDC methodology
- Household level surveys used to assess public health response and preparedness needs in the event of external stressors
- Survey 1: Preparedness

Demographic Information	
<p><b>Q1.</b> Type of structure <input type="checkbox"/>Single family <input type="checkbox"/>Multiple unit <input type="checkbox"/>Mobile home <input type="checkbox"/>Other (please specify) _____ <input type="checkbox"/>DK <input type="checkbox"/>RF</p> <p><b>Q2.</b> Including yourself, how many people live in your HH? _____ <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q8.</b> How often in the past 12 months would you say your HH was worried or stressed about having enough money to buy nutritious meals? Would you say your HH was worried or stressed <input type="checkbox"/>Always <input type="checkbox"/>Usually <input type="checkbox"/>Sometimes <input type="checkbox"/>Rarely <input type="checkbox"/>Never <input type="checkbox"/>DK <input type="checkbox"/>RF</p> <p><b>Q9.</b> Does your current homeowner's insurance policy cover</p> <ol style="list-style-type: none"> <li>1. Flood damage <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Fire damage <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. Tornado damage <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>4. Straight wind damage <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>
<p><b>Q3.</b> Including yourself, how many people living in your HH are <input type="checkbox"/>Less than 2 years old <input type="checkbox"/>2-17 years <input type="checkbox"/>18-64 years <input type="checkbox"/>65+ years <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q10.</b> Have you or a member of your HH ever been told by a healthcare professional that he/she has</p> <ol style="list-style-type: none"> <li>1. Asthma/COPD/Emphysema <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Diabetes <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. Developmental disability <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>4. Hypertension/heart disease <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>5. Immunosuppressed <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>6. Physical disability <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>7. Psychosocial/mental illness <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>
<p><b>Q4.</b> What race does majority of your HH identify with? <input type="checkbox"/>Asian <input type="checkbox"/>American Indian/Alaska Native <input type="checkbox"/>Black or African American <input type="checkbox"/>White <input type="checkbox"/>Native Hawaiian or Other Pacific Islander <input type="checkbox"/>Hispanic or Latino <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q11.</b> Do you or does any member of your HH need</p> <ol style="list-style-type: none"> <li>1. Daily medication <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Dialysis <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. Home health care <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>4. Oxygen supply <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>5. Wheelchair/cane/walker <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>6. Other type of special care <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>
<p><b>Q5.</b> What is the main language spoken in your HH? <input type="checkbox"/>English <input type="checkbox"/>Spanish <input type="checkbox"/>Other (please specify) _____ <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q12.</b> In the past 5 years, have you or anybody in your HH taken training in</p> <ol style="list-style-type: none"> <li>1. First aid <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. CPR <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. CERT <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>
<p><b>Q6.</b> What is the marital status of your head of HH? <input type="checkbox"/>Married/unmarried couple <input type="checkbox"/>Separated/divorced <input type="checkbox"/>Widowed <input type="checkbox"/>Never married <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q13.</b> In the past year, have you reviewed, created, or practiced emergency plans with your HH? <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</p>
<p><b>Q7.</b> How often in the past 12 months would you say your HH was worried or stressed about having enough money to pay your rent/mortgage? Would you say your HH was worried or stressed <input type="checkbox"/>Always <input type="checkbox"/>Usually <input type="checkbox"/>Sometimes <input type="checkbox"/>Rarely <input type="checkbox"/>Never <input type="checkbox"/>DK <input type="checkbox"/>RF</p>	<p><b>Q14.</b> How would you classify your HH's overall emergency preparedness? <input type="checkbox"/>Not at all prepared <input type="checkbox"/>Slightly prepared <input type="checkbox"/>Moderately prepared <input type="checkbox"/>Very prepared <input type="checkbox"/>DK <input type="checkbox"/>RF</p>
Communications	
<p><b>Q15.</b> Do you or does anyone in your HH have any of the following?</p> <ol style="list-style-type: none"> <li>1. Impaired hearing <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Impaired vision <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. Developmental/cognitive disability <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>4. Difficulty understanding English <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>5. Difficulty understanding written material <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>	
<p><b>Q16.</b> What is your HH's main source of information about disasters or emergency events? (Check one)</p> <input type="checkbox"/> Newspaper <input type="checkbox"/> TV <input type="checkbox"/> Radio <input type="checkbox"/> Internet/Online news <input type="checkbox"/> Friends/Family/Word of mouth <input type="checkbox"/> social media <input type="checkbox"/> Text message/Cell phone alert <input type="checkbox"/> Church/Place of worship <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<p><b>Q17.</b> Is your HH aware of the following materials to better prepare you and your family for a natural disaster or other significant event?</p> <ol style="list-style-type: none"> <li>1. Ready.gov resources <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Educational booklet [handout] <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>
Situational Preparedness	
<p><b>Q18.</b> Does your HH have any of the following emergency plans</p> <ol style="list-style-type: none"> <li>1. Emergency communication plan such as a list of numbers and designated out-of-town contact <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>2. Designated meeting place immediately outside your home or close by in your neighborhood <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> <li>3. Designated meeting place outside of your neighborhood in case you cannot return home <input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>DK <input type="checkbox"/>RF</li> </ol>	



# CASPER Survey 2: Tornado Response

Survey to assess household needs following a tornado.

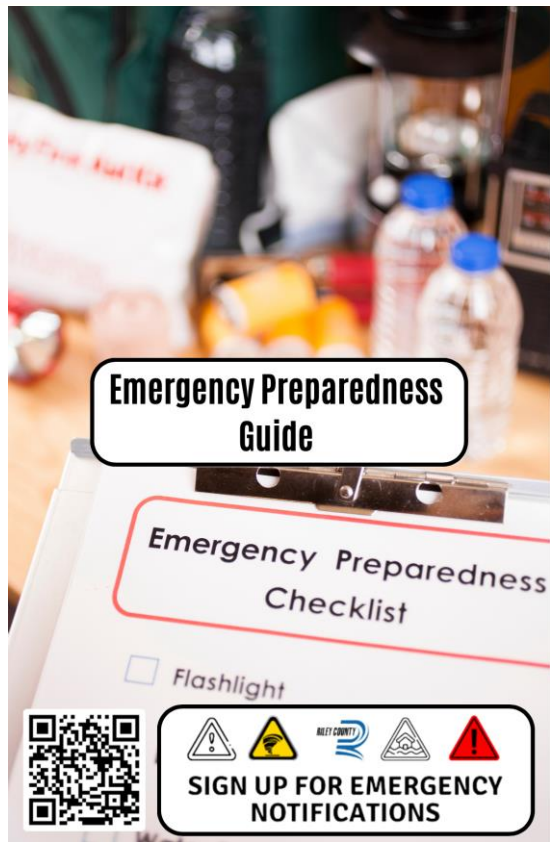
Demographic Information	
<b>Q1.</b> Type of structure <input type="checkbox"/> Single family <input type="checkbox"/> Multiple unit <input type="checkbox"/> Mobile home <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q7.</b> Since the tornado, how concerned would you say your HH is about having enough money to buy nutritious meals? <input type="checkbox"/> Not at all concerned <input type="checkbox"/> Slightly concerned <input type="checkbox"/> Moderately concerned <input type="checkbox"/> Very concerned <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q2.</b> Including yourself, how many people live in your HH? _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q8.</b> Does your homeowner's insurance policy cover 1. Flood damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Fire damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Tornado damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Straight wind damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q3.</b> Including yourself, how many people living in your HH are <input type="checkbox"/> Less than 2 years old <input type="checkbox"/> 2-17 years <input type="checkbox"/> 18-64 years <input type="checkbox"/> 65+ years <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q9.</b> Have you or a member of your HH ever been told by a healthcare professional that he/she has 1. Asthma/COPD/Emphysema <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Diabetes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Developmental disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Hypertension/heart disease <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Immunosuppressed <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 6. Physical disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 7. Psychosocial/mental illness <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF *If yes, have you or a member of your HH noticed worsening of chronic conditions following the tornado? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q4.</b> What race does majority of your HH identify with? <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaska Native <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q10.</b> Do you or does any member of your HH need 1. Daily medication <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Dialysis <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Home health care <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Oxygen supply <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Wheelchair/cane/walker <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 6. Other type of special care <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q5.</b> What is the main language spoken in your HH? <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q11.</b> In the past 5 years, have you or anybody in your HH taken training in 1. First aid <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. CPR <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. CERT <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q6.</b> Since the tornado, how concerned would you say your HH is about having enough money to pay your rent/mortgage? <input type="checkbox"/> Not at all concerned <input type="checkbox"/> Slightly concerned <input type="checkbox"/> Moderately concerned <input type="checkbox"/> Very concerned <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q12.</b> Have the members of your HH received a tetanus shot in the last 10 years? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
Situational Needs Assessment	
<b>Q13.</b> Was anyone in your HH injured during the tornado? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q17.</b> Does your HH currently have a 3-day supply of drinking water other than tap? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q14.</b> Have you or anyone in your HH become ill due to or since the tornado? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q18.</b> Does your HH currently have a 3-day supply of non-perishable food? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q15.</b> Are you or anyone in your HH having trouble getting the care they need? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q19.</b> Does each person in your HH who takes prescribed medication currently have a 7-day supply? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q16.</b> Has there been an increase in insect bites/stings since the tornado? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q20.</b> Does your HH currently have a first aid kit? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
Communications	
<b>Q21.</b> Do you or does anyone in your HH have any of the following? 1. Impaired hearing <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Impaired vision <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Developmental/cognitive disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Difficulty understanding English <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Difficulty understanding written material <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q23.</b> What is your HH's current source of important information? <input type="checkbox"/> Newspaper <input type="checkbox"/> TV <input type="checkbox"/> Radio <input type="checkbox"/> Internet/Online news <input type="checkbox"/> Friends/Family/Word of mouth <input type="checkbox"/> social media <input type="checkbox"/> Text message/Cell phone alert <input type="checkbox"/> Church/Place of worship <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q22.</b> Does your HH currently have a working telephone? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	

# CASPER Survey 3: Flood Response

Survey to assess household needs following a flood.

Demographic Information	
<b>Q1.</b> Type of structure <input type="checkbox"/> Single family <input type="checkbox"/> Multiple unit <input type="checkbox"/> Mobile home <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q7.</b> Since the flood, how concerned would you say your HH is about having enough money to buy nutritious meals? <input type="checkbox"/> Not at all concerned <input type="checkbox"/> Slightly concerned <input type="checkbox"/> Moderately concerned <input type="checkbox"/> Very concerned <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q2.</b> Including yourself, how many people live in your HH? _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q8.</b> Does your current homeowner's insurance policy cover 1. Flood damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Fire damage <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q3.</b> Including yourself, how many people living in your HH are <input type="checkbox"/> Less than 2 years old <input type="checkbox"/> 2-17 years <input type="checkbox"/> 18-64 years <input type="checkbox"/> 65+ years <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q9.</b> Have you or a member of your HH ever been told by a healthcare professional that he/she has 1. Asthma/COPD/Emphysema <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Diabetes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Developmental disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Hypertension/heart disease <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Immunosuppressed <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 6. Physical disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 7. Psychosocial/mental illness <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF *If yes, have you or a member of your HH noticed worsening of chronic conditions following the flood? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q4.</b> What race does majority of your HH identify with? <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaska Native <input type="checkbox"/> Black or African American <input type="checkbox"/> White <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q10.</b> Do you or does any member of your HH need 1. Daily medication <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Dialysis <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Home health care <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Oxygen supply <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Wheelchair/cane/walker <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 6. Other type of special care <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q5.</b> What is the main language spoken in your HH? <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Other (please specify) _____ <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q11.</b> In the past 5 years, have you or anybody in your HH taken training in 1. First aid <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. CPR <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. CERT <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q6.</b> Since the flood, how concerned would you say your HH is about having enough money to pay your rent/mortgage? <input type="checkbox"/> Not at all concerned <input type="checkbox"/> Slightly concerned <input type="checkbox"/> Moderately concerned <input type="checkbox"/> Very concerned <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q12.</b> Have the members of your HH received a tetanus shot in the last 10 years? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
Situational Needs Assessment	
<b>Q13.</b> Was anyone in your HH injured during the flood? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q19.</b> Does your HH currently have a 3-day supply of drinking water other than tap? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q14.</b> Have you or anyone in your HH become ill due to or since the flood? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q20.</b> Does your HH currently have a 3-day supply of non-perishable food? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q15.</b> Are you or anyone in your HH having trouble getting the care they need? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q21.</b> Does each person in your HH who takes prescribed medication currently have a 7-day supply? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q16.</b> Has there been an increase in insect bites/stings since the flood? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q22.</b> Does your HH currently have a first aid kit? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q17.</b> Does your HH currently have a working toilet? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q23.</b> Does your HH currently have working electricity? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
<b>Q18.</b> Does your HH currently have means of regular waste disposal? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q24.</b> Has your HH noticed an increase in the number of rats/mice? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF
Communications	
<b>Q25.</b> Do you or does anyone in your HH have any of the following? 1. Impaired hearing <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 2. Impaired vision <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 3. Developmental/cognitive disability <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 4. Difficulty understanding English <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF 5. Difficulty understanding written material <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF	<b>Q26.</b> Does your HH currently have a working telephone? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DK <input type="checkbox"/> RF

# RCHD Product 2: Emergency Preparedness Guide



The 'Table of Contents' is presented on a grey, textured background. It features a list of nine items, each with a numbered circle on the left and a corresponding icon on the right. The items are: 1. Thunderstorms, pages 3-4 (bell icon); 2. Floods, pages 5-7 (person running icon); 3. Tornadoes, pages 8-9 (tornado icon); 4. Extreme heat, pages 10-12 (phone with plus icon); 5. Winter weather, pages 13-15 (snowflake icon); 6. Wildfires, pages 16-17 (flame icon); 7. Bioterrorism, pages 18-19 (red first aid kit icon); 8. Family communication plan, page 20 (checkmark icon); 9. Important local phone numbers, page 21 (three people icon). The text 'Page 2' is located at the bottom left of the graphic.

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1	Thunderstorms, pages 3-4
2	Floods, pages 5-7
3	Tornadoes, pages 8-9
4	Extreme heat, pages 10-12
5	Winter weather, pages 13-15
6	Wildfires, pages 16-17
7	Bioterrorism, pages 18-19
8	Family communication plan, page 20
9	Important local phone numbers, page 21

# Experience Part 2: KDHE



- Data sorting & review
- Online GIS trainings
- Preliminary study
  - *Extreme Heat, Social Vulnerability, and Respiratory Health in Kansas: A Census Tract-Level Analysis*

# An introduction to the problem

## Extreme heat and respiratory illness.

US studies have shown that extreme heat events are associated with an increasing number of poor respiratory health outcomes, particularly in vulnerable populations (1).

## Social vulnerability and respiratory health.

Social vulnerability is a major determinant of health. In an analysis of the Social Vulnerability Index (SVI) and chronic respiratory disease mortality in the US, high overall SVI was associated with increased mortality related to several respiratory diseases including asthma and COPD (2).

## Extreme heat frequency.

The severity and frequency of extreme heat days are increasing, making it a crucial effort to fully understand the relationships between extreme heat, social vulnerability, and respiratory health (3).

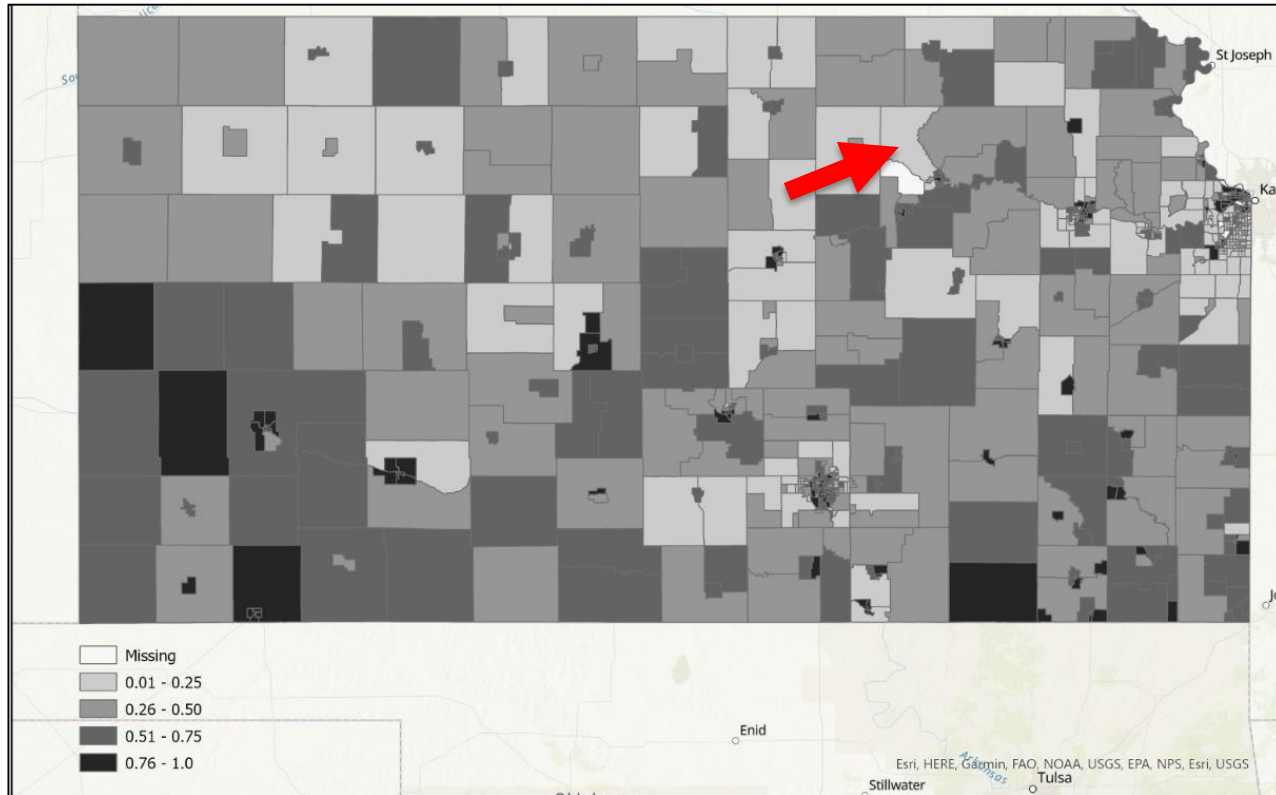
# An introduction to the problem: Specific to KS

Since the early 20<sup>th</sup> century, Kansas temperatures have risen approximately 1.5°F, and are predicted to continue rising (4).

There is a lack of heat-related mortality reporting methodology in Kansas, making it difficult to understand the direct impact of heat on mortality in the state (5).

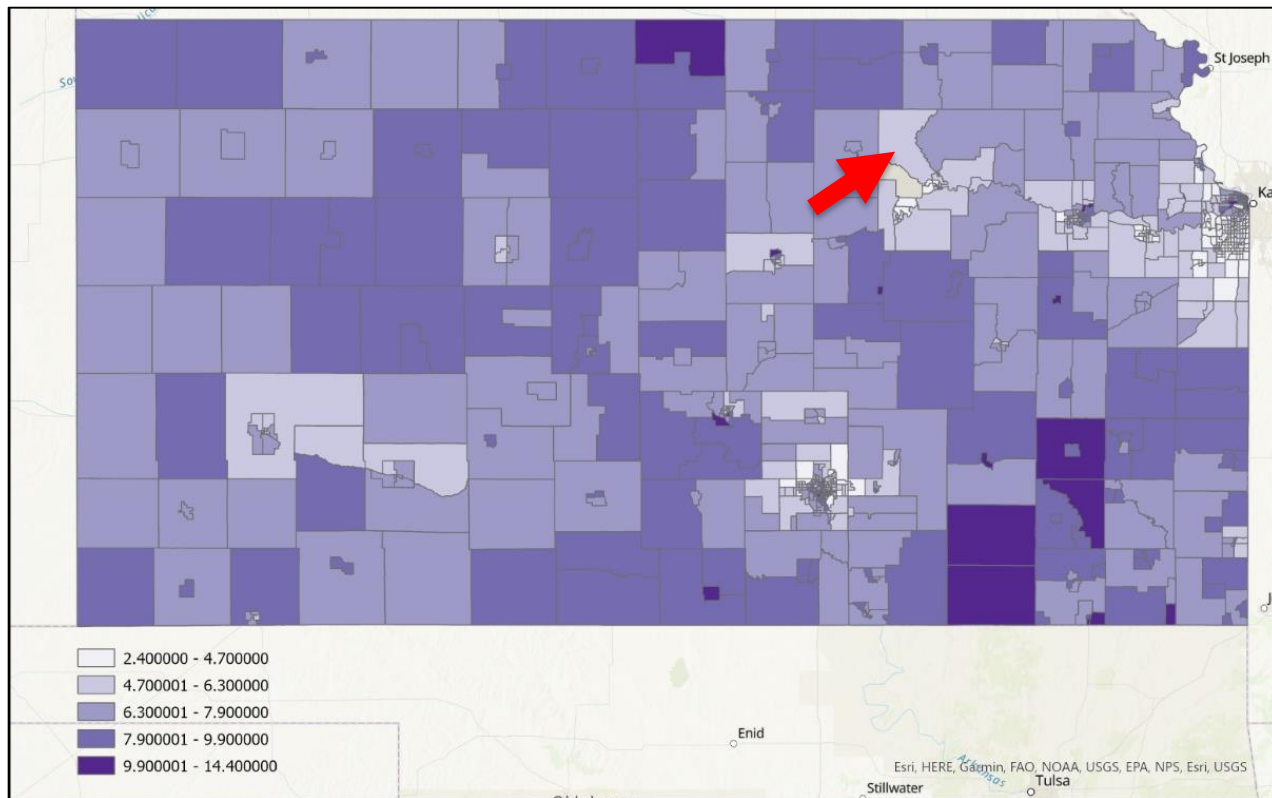
Kansas asthma and COPD crude prevalence values are not significantly higher than the national averages but, these values have been continuously increasing, indicating that there is work to be done to decrease the burden of chronic respiratory disease in Kansas (6).

# KDHE Product 1: Kansas SVI by Census Tract



- What is SVI?
- Readily available data
- 50% of census tracts across Kansas have an SVI value that is greater than or equal to the average value of 0.5
- What is the significance?

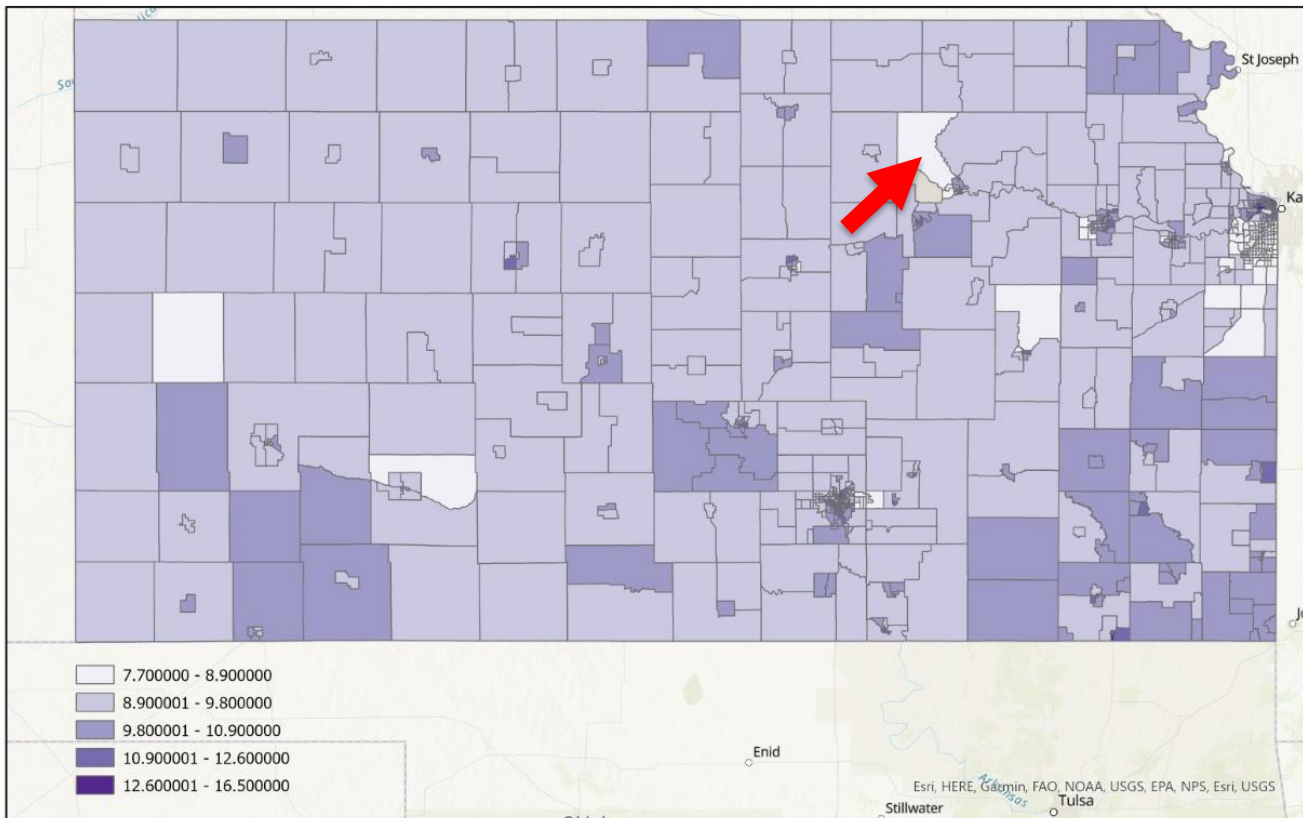
# KDHE Product 2: Kansas COPD Crude Prevalence by Census Tract



- What is COPD?
- Out of all census tracts with a higher-than-average SVI value, 69.7% of these tracts also have an above-average COPD crude prevalence.
- What does this mean for public health?

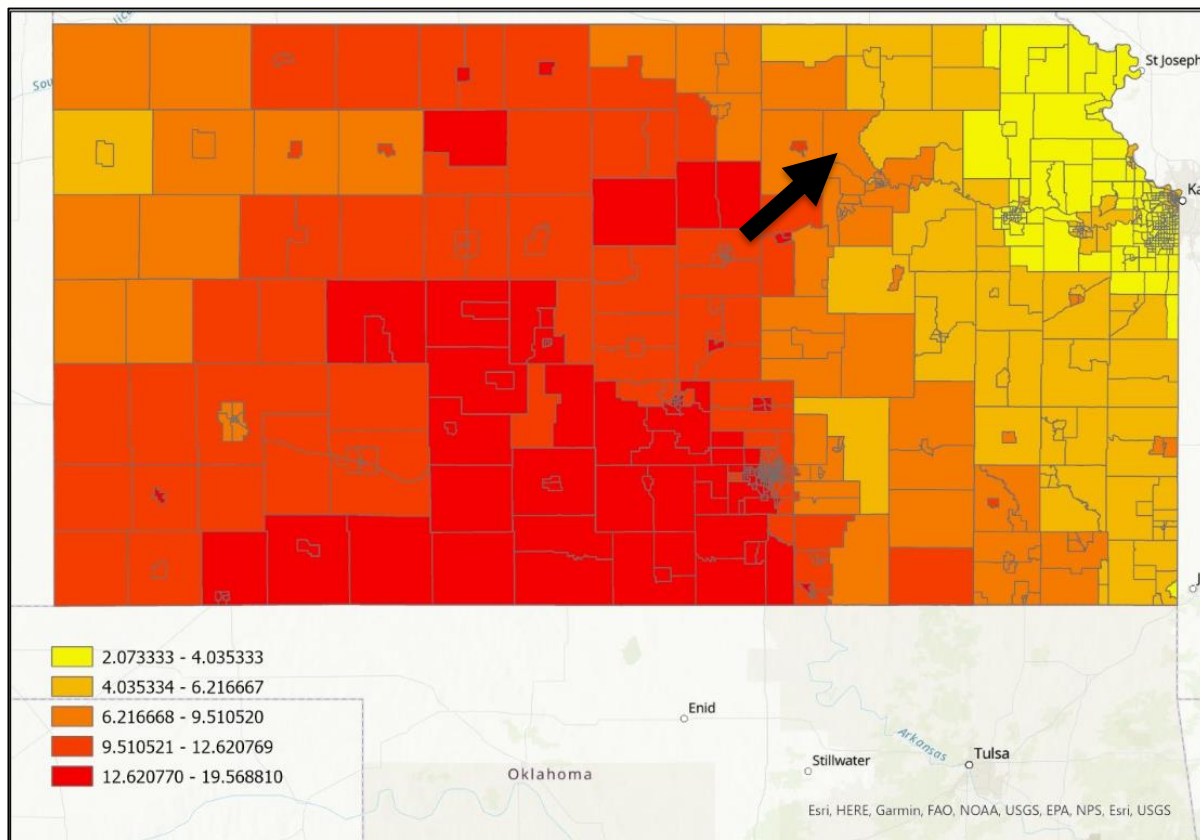


# KDHE Product 3: Kansas Asthma Crude Prevalence by Census Tract



- What is asthma?
- 72.4% of census tracts with higher-than-average asthma crude prevalence rates for KS also demonstrated higher-than-average COPD crude prevalence
- What does this mean for public health?

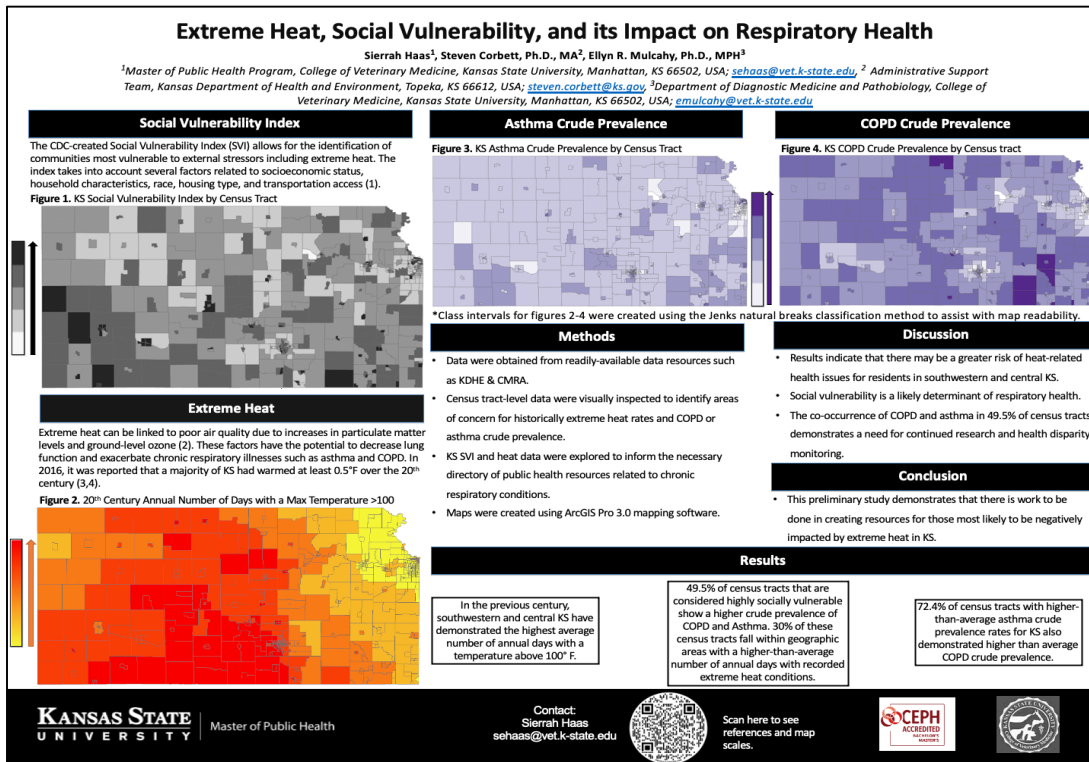
## KDHE Product 4: 20<sup>th</sup> Century Annual Number of Days with a Max Temperature >100° F



- 30.4% of census tracts that showed higher-than-average values for SVI, COPD, and asthma also fall within geographic areas with a higher-than-average number of annual days with recorded extreme heat conditions

# KDHE Product 5: Research Poster

- Presented at Phi Zeta Day and Grad Forum



# Discussion of Future Steps



- Continued research
  - Time-series analysis
- Statewide initiative for cooling centers
- Community outreach
  - Education
  - Supplies

# MPH Foundational Competency Attainment

Competency 1

Apply epidemiological methods to the breadth of settings and situations in public health practice.

GIS mapping was used to analyze and visualize the Kansas population and heat data to look for and identify potential relationships.

# MPH Foundational Competency Attainment

## Competency 3

Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate.

Using GIS computer-based software I was able to conduct spatial and descriptive analyses to allow for a visual understanding of chronic respiratory illness, social vulnerability, and extreme heat in Kansas. I combined several sources of data, chose variables of focus, and used quantitative techniques to identify potential census tract-level relationships.

# MPH Foundational Competency Attainment

## Competency 4

Interpret results of data analysis for public health research, policy, or practice.

The maps created allowed me to identify patterns and interpret results to multiple audiences. These results were included in poster presentations to audiences from several different academic backgrounds. Visual representations, in this case, maps and a poster, allowed for results to be understood and applied for research, policy, or practice.

# MPH Foundational Competency Attainment

## Competency 9

Design a population-based policy, program, project, or intervention.

- Creating an Emergency Preparedness Guide required that I understand the educational needs of Riley County in relation to this topic. Using county data, I identified topics and created the booklet to benefit the community's knowledge and safety practices.
- Conducting a spatial analysis of population data allowed me to assess the public health needs of census tracts in Kansas concerning extreme heat and chronic respiratory health resources. Including SVI in this analysis facilitated my understanding of potential factors associated with the high crude prevalence of respiratory illnesses.



# MPH Foundational Competency Attainment

Competency 18

Select communication strategies for different audiences and sectors.

When creating a research poster and an emergency preparedness guide, it was important to include easy-to-understand information. Both products were created with the intention of being reader-friendly regardless of background knowledge.



- Public health communication
- Public data use
- Software
  - R, Excel, NVivo, GIS

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Thank you!



Questions?

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