

Sean G Young, PhD

4301 W. Markham St., #820-11

Little Rock, AR 72205-7199

(501) 526-6606

SGYoung@UAMS.edu

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Education

PhD in Geography, University of Iowa, Iowa City, IA 2013-2017

Dissertation: "Landscape Genetics of Avian Influenza (H5N1 and H9N2) in Egyptian Poultry from 2006-2015: Co-Infection, Key Substitutions, and Viral Diffusion"

Advisor: Margaret Carrel, PhD

MA in Geography, University of Arkansas, Fayetteville, AR 2011-2013

Thesis: "Landscape Epidemiology and Machine Learning: A Geospatial Approach to Modeling West Nile Virus Risk in the United States"

Advisor: Jason A Tullis, PhD

BS in Geography (magna cum laude), Brigham Young University, Provo, UT 2004-2011

Current Position(s)

Assistant Professor

Department of Environmental and Occupational Health

University of Arkansas for Medical Sciences

Little Rock, AR

Academic Appointments *[Note: in reverse chronological order]*

Adjunct Assistant Professor 2019-Present

Department of Geosciences

University of Arkansas

Fayetteville, AR

Assistant Professor 2017-Present

Department of Environmental and Occupational Health

University of Arkansas for Medical Sciences

Little Rock, AR

Instructor 2015

Department of Geographical and Sustainability Sciences

University of Iowa

Iowa City, IA

Certification

Graduate Certificate in Informatics (Geoinformatics), University of Iowa 2015

ArcGIS Desktop Associate 10.1 Certification, Esri 2012

Professional Memberships and Activities

American Association of Geographers (AAG)

Member

2011-Present

American Public Health Association (APHA)

Member

2019-Present

American Society of Photogrammetry and Remote Sensing (ASPRS)

Member	2012-2014
President, University of Arkansas Student Chapter	2013-2014

Honors and Awards

Jacques May Thesis Prize (Master's Division), Health and Medical Geography Specialty Group of the AAG	2014
NSF IGERT. "GEEMaP (Geoinformatics for Environmental and Energy Modeling and Prediction)." (Trainee) \$90,000	2013-2017
University of Iowa Presidential Graduate Research Fellowship. (Fellow) \$150,000	2013-2017
Valedictorian, Geography Department, Brigham Young University	2011
Eagle Scout, Boy Scouts of America	2001

Committee Assignments and Administrative Services

Website Committee, Department of Environmental and Occupational Health, University of Arkansas for Medical Sciences	2018-Present
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Educational Activities

Course and Curriculum Development

Developer, Geographic Information Systems for Health Professionals, University of Arkansas for Medical Sciences	2019-2020
Lead Content Developer, GEOS 3553: Intro to Geospatial Analysis Using ArcGIS, University of Arkansas	2013
Lead Content Developer, GEOS 3543: Intro to Geographic Information Sciences, University of Arkansas	2012

Courses Directed

Environmental and Occupational Health (ENVH 5102), University of Arkansas for Medical Sciences	2018-Present
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Didactic Teaching

Geographic Information Systems for Health Professionals (OEHM 5104), Instructor, University of Arkansas for Medical Sciences	2020-Present
Environmental and Occupational Health (ENVH 5102), Instructor, University of Arkansas for Medical Sciences	2018-Present
Geospatial Applications and Information Science (GEOS 3543/5543), Instructor, University of Arkansas	2019
Foundations of Biomedical Informatics: Public Health Informatics (BMI 5103), Guest Lecturer, University of Arkansas for Medical Sciences	2019-2020
Epidemiology of Infectious Diseases (EPID 6550), Guest Lecturer, University of Iowa	2016
Health and Environment: GIS Applications (GEOG 4150), Instructor, University of Iowa	2015
Intro to Geographic Information Sciences (GEOS 3543), TA, University of Arkansas	2011-2013
Advanced Vector GIS (GEOS 5033), TA, University of Arkansas	2012
Vector GIS (GEOS 4583), TA, University of Arkansas	2012
Global Environment (GEOG 101), TA, Brigham Young University	2010-2011
Intro to GIS (GEOG 212), TA, Brigham Young University	2009-2010

Graduate Student Committees

Heather Hirsch, University of Arkansas for Medical Sciences, MPH APE Faculty Advisor	2020
Gregory A. Sheridan, University of Arkansas for Medical Sciences, MPH ILEPAC Committee	2019-2020
Krista Garner, University of Arkansas, PhD Dissertation Committee	2018-Present

Meghan Ayers, University of Arkansas for Medical Sciences, MPH ILEPAC Committee 2018-2019
Carl Richard Taffner, University of Arkansas for Medical Sciences, MPH CEP Advisory Committee 2017

Other Student Mentoring

Taylor Hammonds, Academic Advisor 2020-Present
Josie Collins, Lab Mentorship 2020
Justin Anderson, Lab Mentorship 2019-2020
Arhita Dasgupta, GIS Training 2019-2020
Meghan Ayers, Lab Mentorship 2018-2019
Griffin Knight, Undergraduate Intern 2018

Grants and Contract Awards

Current

1U01DD001229, CDC Nembhard (PI) 09/01/18-08/31/23
Component A: Arkansas Proposal to participate in the Birth Defects Study to Evaluate Pregnancy exposureS (BD-STEPS II)

CDC

To identify modifiable early pregnancy exposures that may decrease the occurrence of selected birth defects, discovering gene-environment interactions that lead to birth defects, and helping develop future generations of birth-defect researchers by training and mentoring junior researchers.

Role: **Co-Investigator (5%)**

\$995,000

ACHRI039064 Daley (PI) 01/01/20-06/31/21
Predicting Spatial Risk of Child Maltreatment as a Means to Equitably Align and Catalyze Healthcare, Public Health, and Child Welfare Resources

ACRI

To identify locations where child maltreatment, related deaths, and pathophysiology have an increased risk of occurring due to environmental features exerting a spatial influence on these outcomes.

Role: **Co-Investigator (10%)**

\$15,327

GA5RH37458 Eswaran (PI) 06/01/20-05/30/21
Availability of Telehealth Resources and Opportunities in 3 Telehealth Resource Center Regions

HRSA

Design and implementation of a scalable online GIS tool for exploring telehealth resources and opportunities in the South Central, Mid-Atlantic, and Northeast Telehealth Resource Centers' regions.

Role: **Co-Investigator (10%)**

\$41,954

Past

SUPLMNT-R15CA231510 Su (PI) 09/01/19-08/31/20
Evaluating Impact of Diet and Fresh Food Access on Aggressive Prostate Cancer using Multi-Level Modeling

NCI

An administrative supplement to an existing NCI R15, this project uses geospatial accessibility and multi-level modeling to examine the relationships between fresh food access, folic acid intake, and prostate cancer aggressiveness.

Role: **Co-Investigator (10%)**

\$87,299

No number assigned Young (PI) 07/01/18-08/31/19
Mapping Unmet Demand for Mammography Services in Arkansas
 Mammovan BCBS & Wal-Mart Foundation Funds for MammoVan
 This project seeks to identify and map all facilities in Arkansas providing mammography screening services, map theoretical demand for those services based on population distribution, and identify areas of unmet demand using capacitated optimization models for spatial accessibility.
 Role: **Principal Investigator (5%)**
 \$16,035

Publications

Peer-reviewed Articles

1. **Young SG**, Jensen RR. Statistical and visual analysis of human West Nile virus infection in the United States, 1999-2008. *Applied Geography*, 34, 425-431. doi:10.1016/j.apgeog.2012.01.008 2012
2. **Young SG**, Tullis JA, Cothren J. A remote sensing and GIS-assisted landscape epidemiology approach to West Nile virus. *Applied Geography*, 45, 241-249. doi:10.1016/j.apgeog.2013.09.022 2013
3. Carrel M, **Young SG**, Tate E. Pigs in space: Determining the environmental justice landscape of swine concentrated animal feeding operations (CAFOs) in Iowa. *International Journal of Environmental Research and Public Health*, 13(9), 849. doi:10.3390/ijerph13090849 PMID: PMC5036682. 2016
4. **Young SG**, Carrel M, Malanson GP, Ali MA, Kayali G. Predicting avian influenza co-infection with H5N1 and H9N2 in northern Egypt. *International Journal of Environmental Research and Public Health*, 13(9), 886. doi: 10.3390/ijerph13090886 PMID: PMC5036719. 2016
5. **Young SG**, Carrel M, Kitchen A, Tamerius J, Malanson GP, Ali MA, Kayali G. How's the flu getting through? Landscape genetics suggests both humans and birds spread H5N1 in Egypt. *Infection, Genetics and Evolution*, 49, 293-299. doi: 10.1016/j.meedgid.2017.02.005 PMID: 28179143. 2017
6. Carrel M, Zahrieh D, **Young SG**, Oleson J, Ryckman KK, Wels B, Simmons DL, Safflas A. High prevalence of elevated blood lead levels in both rural and urban Iowa newborns: spatial patterns and area-level covariates. *PLOS ONE*, 12(5), e0177930. doi: 10.1371/journal.pone.0177830 PMID: PMC5433780. 2017
7. Martin BE, Carrel M, Baroch JA, **Young SG**, Schmit B, Nolting J, Yoon K-J, Lutman MW, Pedersen K, Bowman A, Slemmons R, Smith DR, DeLiberto T, Wan X-F. US feral swine were exposed to both avian and swine influenza A viruses. *Applied and Environmental Microbiology*, 01346-17. doi: 10.1128/AEM.01346-17 PMID: PMC5601342. 2017
8. **Young SG**, Kitchen A, Kayali G, Carrel M. Unlocking pandemic potential: prevalence and spatial patterns of key substitutions in avian influenza H5N1 in Egyptian isolates. *BMC Infectious Diseases*, 18(1). doi: 10.1186/s12879-018-3222-6 PMID: PMC6035396. 2018
9. Gruca TS, Nelson GC, Thiesen L, Asprey DP, **Young SG**. The workforce trends of Physician Assistants in Iowa (1995-2015). *PLOS ONE*, 13(10), e0204813. doi: 10.1271/journal.pone.0204813 PMID: PMC6175273. 2018
10. **Young SG**, Hayes CJ, Aram J, Tait MA. Doctor hopping and doctor shopping for prescription opioids associated with increased odds of high-risk use. *Pharmacoepidemiology and Drug Safety* 28(8), 1117-1124. doi:10.1002/pds.4838 PMID: PMC6679752. 2019

11. Kandeil A, Hicks JT, **Young SG**, El Taweel AN, Kayed AS, Moatasim Y, Kutkat O, Bagato O, McKenzie PP, Cai Z, Badra R, Kutkat M, Bahl J, Webby RJ, Kayali G, Ali MA. Active surveillance and genetic evolution of avian influenza viruses in Egypt, 2016-2018. *Emerging Microbes & Infections*, 8(1), 1370-1382. doi: 10.1080/22221751.2019.1663712 PMID: 31526249 2019
12. **Young SG**, Ayers M, Malak S. Mapping mammography in Arkansas: Locating areas with poor spatial access to breast cancer screening using optimization models and geographic information systems. *Journal of Clinical and Translational Science*, 1-6. doi: 10.1017/cts.2020.28 2020
13. **Young SG**, Gruca TS, Nelson GC. Impact of nonphysician providers on spatial accessibility to primary care in Iowa. *Health Services Research*, 55(3), 476-485. doi: 10.1111/1475-6773.13280 2020
14. El Zowalaty ME, **Young SG**, Järhult JD. Environmental impact of the COVID-19 pandemic – a lesson for the future. *Infection Ecology & Epidemiology*, 10(1), 1768023. doi: 10.1080/20008686.2020.1768023 2020
15. ELHassan NO, **Young SG**, Gokun Y, Wan F, Nembhard WN. Trends in prevalence and spatiotemporal distribution of gastroschisis in Arkansas, 1998–2015. *Birth Defects Research, EarlyView*, bdr2.1772. doi:10.1002/bdr2.1772 2020

Book Chapters

1. Tullis JA, Alsumaiti TS, Cothren JD, Lanter DP, Limp WF, Linck RF, Shi X, **Young SG**. Geoprocessing, workflows, and provenance. In PS Thenkabail (Ed.), *Remote sensing handbook, vol 1, Data: characterization, classification, and accuracies (1st ed.)*. Taylor & Francis. 2015

Abstracts and Presentations [**Invited*]

Oral Presentations

National/International Meetings

- Young SG**. Mapping mammography in Arkansas: Locating areas with poor access to breast cancer screening using optimization models and geographic information systems. American Public Health Association Annual Meeting and Expo, 4 Nov. Philadelphia, Pennsylvania 2019
- *Young SG**. Convergent GIScience priorities: health and medical geography. Convergent GIScience Priorities Workshop, 28 Oct. Fayetteville, Arkansas 2019
- Young SG**. Patient travel patterns and high-risk opioid use: Doctor Hopping and Doctor Shopping in Arkansas, USA. International Medical Geography Symposium, 4 Jul. Queenstown, New Zealand 2019
- Young SG**. Doctor shopping and doctor hopping: spatial analysis of patient travel for prescription opioids. American Association of Geographers Annual Meeting, 2 Apr. Washington, D.C. 2019
- Young SG**, Carrel M, Kitchen A. Unlocking pandemic potential: key substitutions in avian influenza H5N1 in Egyptian isolates. International Medical Geography Symposium, 4 Jul. Angers, France 2017
- Young SG**, Gruca TS, Nelson, GC. Re-evaluating Primary Care Health Professional Shortage Areas in Iowa. American Association of Geographers Annual Meeting, 5 Apr. Boston, Massachusetts 2017
- Young SG**, Carrel M, Kitchen A, Kayali G. The 11th Egyptian plague: A landscape genetics analysis of avian influenza in Egyptian poultry. American Association of Geographers Annual Meeting, 1 Apr. San Francisco, California 2016

- Carrel M, **Young SG**, Tate E. Pigs in space: Determining the environmental justice landscape of swine Concentrated Animal Feeding Operations (CAFOs) in Iowa. American Association of Geographers Annual Meeting, 1 Apr. San Francisco, California 2016
- Young SG**. Avian influenza in Egypt: ecological niche modeling and co-infection risk. International Medical Geography Symposium, 7 Jul. Vancouver, BC, Canada 2015
- Young SG**, Carrel M, Kayali G. Landscape genetics of avian influenza in Egypt. Association of American Geographers Annual Meeting, 22 Apr. Chicago, Illinois 2015
- Young SG**. Landscape epidemiology: West Nile virus in the US. American Society for Photogrammetry and Remote Sensing Annual Meeting, 28 Mar. Baltimore, Maryland 2013
- Young SG**, Tullis J, Mpedi O. Remote sensing-assisted landslide detection after the 2007 Pisco, Peru earthquake. Association of American Geographers Annual Meeting, 28 Feb. New York City, New York 2012
- Local/Regional Meetings
- Young SG**. Location! Location! Location! Geocoding, Spatial Clusters, and Geographic Accessibility. Public Health Seminar. College of Public Health, 25 Feb. UAMS, Little Rock, Arkansas 2020
- ***Young SG**. Using optimization models for spatial accessibility to health care. AR GIS Spring Meeting, 20 Mar. Little Rock, Arkansas 2019
- ***Young SG**. An introduction to using GIS and medical geography in public health. Department of Geosciences Colloquium, 21 Sep. University of Arkansas, Fayetteville, Arkansas 2018
- ***Young SG**. Are you sure that's a thing? A brief introduction to medical geography. AR GIS Users Forum & OPENGATE Outreach Partnership Conference, 2 Nov. Little Rock, Arkansas 2018
- ***Young SG**. Medical geography and GIS for public health. Research & Application Seminar. Department of Biomedical Informatics, 2 Nov. UAMS, Little Rock, Arkansas 2017
- Young SG**. Animal rabies in Arkansas, 1995-2016. Arkansas GIS Users Forum Training and Symposium, 5 Oct. Eureka Springs, Arkansas 2017
- ***Young SG**. More than maps: GIS in public health. Public Health Seminar. College of Public Health, 26 Sep. UAMS, Little Rock, Arkansas 2017
- Young SG**, Carrel M, Kitchen A, Kayali G. The fifth Egyptian plague returns? A landscape genetics analysis of avian influenza in Egyptian poultry. Jakobsen Memorial Graduate Conference, 26 Mar. Iowa City, Iowa 2016
- Young SG**, Carrel M, Kayali G. Mapping co-infection risk for avian influenza in Egypt. Great Plains Emerging Infectious Diseases Conference, 10 Apr. Iowa City, Iowa 2015
- Bales Z, Landgren J, Muñoz C, Smith A, **Young SG**, Santos K, Cowles MK. Modeling and predicting mine sites for hydraulic fracking silica sand in north eastern Iowa. Annual GEEMaP Workshop, 18 Oct. Iowa City, Iowa 2014
- Grand Rounds Presentations
- ***Young SG**. Geospatial technologies for public health: Moving beyond mapping. Public Health Grand Rounds, 1 Feb. Arkansas Department of Health, Little Rock, Arkansas 2018
- Poster Presentations**
- National/International Meetings
- Kandeil A, Hicks JT, **Young SG**, El Taweel AN, Kayed AS, Moatasim Y, Kutkat O, Bagato O, McKenzie PP, Cai Z, Badra R, Kutkat M, Bahl J, Webby 2019

- RJ, Kayali G, & Ali MA. Are H9N2 and H5N8 outcompeting H5N1 in Egypt? Active surveillance, niche models, and replication rates of avian influenza viruses in Egypt, 2016-2018. Centers for Excellence in Influenza Research and Surveillance (CEIRS) Annual Meeting, 24 Jun. Baltimore, Maryland
- El-Hassan NO, **Young SG**, Gokun Y, Wan F, Nembhard WN. Prevalence and spatial variability of gastrochisis in Arkansas, 1998-2013. Pediatric Academic Societies Meeting, 30 Apr. Baltimore, Maryland 2019
- Young SG**, Aram J., Hayes CJ, Tait MA. Doctor shopping and high-risk use of opioid prescriptions in Arkansas. American Association of Geographers Annual Meeting, 13 Apr. New Orleans, Louisiana 2018
- Wilson E, Distelhorst K, Hughes M, **Young SG**, Griffith S, Nygaard T, Voyich J. Expression and function of bovine CCL28. American Association of Immunologists Annual Meeting, 11 May. Seattle, Washington 2009

Local/Regional Meetings

- Dasgupta A, Simonson ME, Acuña J, Compadre A, Bimali M, Runnels GA, **Young SG**, Faulkner JL, Su J, Kadlubar SA, Zorn KK. Disadvantage and rurality of African-American participants in SFTC biorepository. Poster presentation at UAMS Student Research Day, 10 Mar. Little Rock, Arkansas 2020
- Young SG**, Carrel M, Young R, & Lynch C. Cutaneous melanoma in Iowa exhibits spatial clustering by stage and sex. Poster presentation at Student Interdisciplinary Health Research Poster Session, 29 Apr. Iowa City, Iowa 2014

Other Scholarly Products

- Consultant/analyst: Milburn, A. (PI), Rainwater, C. (Co-PI). Models for disaster relief shelter location and supply routing. Final Report for MBTC DOT 3028. 2013
- Expert Editorial Review: "Introduction to Geospatial Technologies" (2nd ed) by Brad Shellito 2013
- Expert Editorial Review: "Discovering GIS and ArcGIS" (1st ed) by Brad Shellito 2014
- Expert Editorial Review: "Introduction to Geospatial Technologies" (3rd ed) by Brad Shellito 2015
- Expert Editorial Review: "Discovering GIS and ArcGIS" (2nd ed) by Brad Shellito 2016
- Expert Editorial Review: "Introduction to Geospatial Technologies" (4th ed) by Brad Shellito 2017
- Expert Editorial Review: "Introduction to Geospatial Technologies" (5th ed) by Brad Shellito 2019
- Expert Editorial Review: "Discovering GIS and ArcGIS Pro" (3rd ed) by Brad Shellito 2020

Professional Community Activities

Peer Review

- Article, Vaccines 2020
- Book Chapter, "Human Dynamics in Smart Cities" series by Springer 2020
- Article, Health Services Research 2020
- Article, Remote Sensing 2020
- Article, Progress in Physical Geography 2020
- Article, Applied Geography 2020
- 2 Articles, International Journal of Environmental Research and Public Health 2020
- Article, Remote Sensing 2019
- Article, Journal of Clinical Medicine 2019
- Article, BMC Veterinary Research 2018
- Article, Landscape Ecology 2018
- 2 Articles, International Journal of Environmental Research and Public Health 2018

Article, Genes	2018
Article, Tropical Medicine and Infectious Disease	2018
Article, Landscape Ecology	2017
2 Articles, International Journal of Environmental Research and Public Health	2017
Article, Sustainability	2016
2 Articles, Applied Geography	2013
Article, Geography Compass	2011
Departmental, College, and University Service	
COVID-19 Response Modeling and GIS Support, University of Arkansas for Medical Sciences and Arkansas Department of Health, Little Rock, AR	2020
Esri Site License Coordinator, University of Arkansas for Medical Sciences	2019-Present
Member, M7 Taskforce for Development of Public Health Informatics Certificate, University of Arkansas for Medical Sciences	2018-2019
Judge, ILE Poster Presentations, University of Arkansas for Medical Sciences	2018
Graduate Student Representative to Faculty Meetings, Geographical and Sustainability Sciences, University of Iowa	2015-2016
Graduate Committee, Geographical and Sustainability Sciences, University of Iowa	2014-2015
Professional Service	
Conference Volunteer, AAG Annual Meeting in San Francisco, CA	2016
President, UA Student Chapter of the ASPRS, Fayetteville, AR	2012-2013
Moderator, "Disasters - Mapping" Technical Session, ASPRS Annual Meeting in Baltimore, MD	2013
ASPRS Student Assistant, MAPPS-ASPRS Fall Specialty Conference in Tampa, FL	2012
ASPRS Volunteer, The Glossary of Mapping Sciences 2nd Edition	2012
Other Service	
Pack Committee Chair, Cub Scout Pack 220, Iowa City, IA	2015-2017
Den Leader, Cub Scout Pack 220, Iowa City, IA	2013-2014
Geography Tutor, BYU	2010-2011
Volunteer Research Assistant, BYU	2009-2011
Full-Time Missionary, Church of Jesus Christ of Latter-day Saints, Maryland Baltimore Mission	2005-2007
Mentor, Provo Youth Mentoring Program, Provo, UT	2004-2005
Community Outreach	
"Maps in Action!" – Presentation to Joe T. Robinson Elementary School in Little Rock, AR	2020
"Geographic Variation and Disparities in Screening Mammography Utilization in Arkansas" – Presentation to TRI Community Advisory Board, in Jonesboro, AR	2019
"Examining radon levels in Woodbury County, Iowa" - Health and Environment: GIS Applications course in partnership with Siouxland Interstate Metropolitan Planning Council, the City of Sioux City, and the Siouxland District Health Department, supported by the Iowa Initiative for Sustainable Communities (IISC)	2015
"Mapped sources of Sioux City Farmers' Market 2015 products: analysis of individual health outcomes and accessibility to healthy food choices" - Health and Environment: GIS Applications course in partnership with Siouxland Interstate Metropolitan Planning Council, the City of Sioux City, and the Sioux City Farmers' Market, supported by the IISC	2015
Presentations to AP Geography classes at Washington High School in Cedar Rapids, IA	2015

“Modeling and predicting potential frac sand mine locations” - Interdisciplinary 2014-2015
project with GEEMaP and Winneshiek County, IA, supported by the IISC