

## **CRIS E. HUGHES**

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### **EDUCATION**

University of California at Santa Cruz	Anthropology	Ph.D.	2010
University of California at Santa Cruz	Anthropology	M.A.	2007
University of Florida	Anthropology	B.A.	2004

### **ACADEMIC APPOINTMENTS**

2014 -	Clinical Assistant Professor of Anthropology University of Illinois at Urbana-Champaign, IL
2014-	Outreach Affiliate, Carl R. Woese Institute for Genomic Biology University of Illinois at Urbana-Champaign, IL
2011-2014	Postdoctoral Researcher, Visiting Professor of Anthropology University of Illinois at Urbana-Champaign, IL
2011	Lecturer in Anthropology University of Illinois at Urbana-Champaign, IL
2010-2011	Lecturer in Anatomy and Physiology Parkland College, Champaign IL

### **PROFESSIONAL APPOINTMENTS**

2013-Present	Deputy Forensic Anthropologist, Champaign County Coroner's Office, Champaign, IL
2011	Forensic Anthropologist, Pima County Office of the Medical Examiner, Tucson, AZ
2005-2010	Forensic Anthropology Case Analyst, Forensic Osteological Investigations Laboratory, University of California at Santa Cruz, CA
2006	Forensic Anthropology Case Analyst, volunteer, Fundacion de Antropologia Forense de Guatemala, Guatemala

## **PEER REVIEW PUBLICATIONS**

**Hughes CE**, BFB Algee-Hewitt, L Konigsberg. *In press*. Population Identifiability from Forensic Genetic Markers: Ancestry Variation in Latin America. *Human Biology*.

Go, MC, BFB Algee-Hewitt, B Dudzik, **CE Hughes**. *In press*. Classification Trends Among Contemporary Filipino Crania Using Fordisc 3.1. *Forensic Anthropology*.

Algee-Hewitt BFB, **CE Hughes**, MC Go, B Dudzik. *In press*. An Admixture Approach to Trihybrid Ancestry Variation in the Philippines with Implications for Forensic Anthropology. *Human Biology*.

**Hughes CE**, B Dudzik, BFB Algee-Hewitt, A Jones, BE Anderson. 2018. Understanding (Mis)classification Trends of Hispanics in Fordisc 3.1: Incorporating Cranial Morphology, Microgeographic Origin, & Admixture Proportions for Interpretation. *Journal of Forensic Sciences* <https://doi.org/10.1111/1556-4029.13893>

Trammel L, CA Juarez, **CE Hughes**. 2018. A Case Study Highlighting the Utility of Multiple Techniques for Testing Investigative Leads. *Forensic Anthropology* 1(2):105-116.

Algee-Hewitt, **CE Hughes**, BE Anderson. 2018. Temporal, Geographic, and Identification Trends in Craniometric Estimates of Ancestry for Persons of Latin American Origin. *Forensic Anthropology* 1(1):4-17.

Fowler G, **CE Hughes**. 2017. Development and Assessment of Postcranial Sex Estimation Methods for a Guatemalan Population. *Journal of Forensic Sciences*. DOI: 10.1111/1556-4029.13570

**Hughes CE**, BFB Algee-Hewitt, E Clausen, R Reineke, BE Anderson. 2017. Temporal Patterns of Mexican Migrant Ancestry: Implications for Identifications. *American Anthropologist* 119(2):193-208.

Zaidi, AA, BC Mattern, P Claes, B McEcoy, B, **CE Hughes**, MD Shriver MD. 2017. Investigating the case of human nose shape and climate adaptation. *PLoS Genetics*, 13(3), p.e1006616.

**Hughes CE**, Rogers M, A Owings, D Goldberg, R Malhi. 2016. Genetic structure of First Nation communities in the Pacific Northwest. *Human Biology* 88(4):251-63.

**Hughes CE**, Hunter CD, Vargas PT, Schlosser MD, Malhi RS. 2016. Police endorse color-blind racial beliefs more than lay. *Journal of Criminal Justice*. *Race and Social Problems* 1-11.

Sans M, G Figueiro, **CE Hughes**, J Lindo, PC Hidalgo, RS Malhi. 2015. A South American prehistoric mitogenome: context, continuity, and the place of C1d haplogroup. *PloS one*, 10(10), e0141808.

Kistler L, A Ratan, LR Godfrey, BE Crowley, **CE Hughes**, R Lei, Y Cui, ML Wood, KM Muldoon, H Andriamialison, JJ McGraw, LP Tomscho, SC Schuster, W Miller, EE Louis AD Yoder, RS Malhi, GH Perry. 2015. Comparative and population genomic analyses of Madagascar's extinct, giant 'subfossil' lemurs. *Journal of Human Evolution* 79:45-54.

P Verdu, TJ Pemberton, RL, BM Kemp, A Gonzalez-Oliver, Clara G, **CE Hughes**, MR Shattuck, BP, J Mitchell, H Harry, T William, R Worl, JS Cybulski, NA Rosenberg, RS Malhi. 2014. Patterns of admixture and population structure in native populations of northwest North America. *PloS Genetics* DOI: 10.1371/journal.pgen.1004530

Cui Y, J Lindo, **CE Hughes**, J Johnson, A Hernandez, BM Kemp, J Ma, R Hernandez, B Petzelt, J Mitchell, D Archer, JS Cybulski, RS Malhi. 2013. Ancient DNA analysis reveals temporal continuity of complete mitochondrial genomes from the mid-Holocene to the present-day on the Northwest Coast of North America. *PloS one* 8.7:e66948.

**Hughes CE**, M Tise, L Trammell, B. Anderson. 2013. Cranial Morphological Variation among Contemporary Mexicans: Regional Trends, Ancestral Affinities, and Genetic Comparisons. *American Journal of Physical Anthropology*, 151(4):506-517.

**Hughes CE**, C Juarez, L Zephro, G Fowler and S Chacon. 2012. Past or Present? Differentiating California Prehistoric Native American Remains from Forensic Cases: An Empirical Approach. *International Journal of Osteoarchaeology* 22:110-118.

**Hughes CE**, C Juarez, T Hughes, A Galloway, G Fowler. 2011. A Simulation for Exploring the Effects of the "Trait List" Method's Subjectivity on Consistency and Accuracy of Ancestry Estimations. *Journal of Forensic Sciences* 56:5:1094-1106.

**Hughes CE** and C White. 2009. Crack Propagation in Teeth: A Comparison of Perimortem and Postmortem Behavior of Dental Materials and Cracks. *Journal of Forensic Sciences* Volume 54, Issue 2, 263-66.

## **BOOK CHAPTERS**

Juarez C and **CE Hughes**. 2013. The Forensic Anthropologist's Role in Identifying Intimate Partner Violence (IPV): Demographics, Skeletal Injury Patterns, and the Limitations and Confidence of IPV Assessments. In: V Wedel and A Galloway, editors. Broken Bones, 2<sup>nd</sup> Edition.

## **CONFERENCE ABSTRACTS**

**Hughes CE** and BFB Algee-Hewitt 2018. Compatibility of Ancestry Composition Estimations of Forensic STR loci. *American Association of Physical Anthropologists Annual Conference*.

Algee-Hewitt, BFB, **Hughes CE**, Go MC. 2018. Elucidating ancestry variation in the Philippines via mixture analysis. *American Association of Physical Anthropologists Annual Conference*.

**Hughes CE**, Dudzik B, Algee-Hewitt BFB. 2017. Understanding (Mis)classification Trends of Hispanics in Fordisc 3.1: Incorporating Cranial Morphology, Microgeographic Origin, and Admixture Proportions For Interpretation. *American Association of Physical Anthropologists Annual Conference*.

Owings AO, **CE Hughes**, MP Rogers, JS Cybulski, RS Malhi. 2015. Maternal and Paternal population history of Indigenous individuals in British Columbia. *American Association of Physical Anthropologists Annual Conference*.

**CE Hughes** and BFB Algee-Hewitt. 2015. A Multi-component analysis of Mexican Variation with Forensic Implications. *American Association of Physical Anthropologists Annual Conference*.

Sans, M, V Figuero, **CE Hughes**, J Lindo, PC Hidalgo, RS Malhi. 2014. First South American Prehistoric mitogenome: context, continuity and the place of the C1d haplogroup. *American Association of Physical Anthropologists Annual Conference*.

Owings AC, **CE Hughes**, M Rogers, RS Malhi. 2014. Y-chromosome analysis of ancient Native Americans from British Columbia. *American Association of Physical Anthropologists Annual Conference*.

Zaidi AA, P Claes, K Danials, W Yao, **CE Hughes**, RS Malhi, MD Shriver. 2014. A novel method of estimating facial ancestry using 3D images. *American Association of Physical Anthropologists Annual Conference*.

**Hughes CE**, PT Vargas, AC Owings, LH Brown, W Yao, AA Zaidi, MD Shriver, RS Malhi. 2014. Examining the Effects of Genetic Ancestry on the Accuracy of Predicting Hair Color using the HirisPlex Prediction Tool. *American Association of Physical Anthropologists Annual Conference*.

Rogers M, **CE Hughes**, A Owings, D Goldberg, R Malhi. 2013. Multiple loci provide a more complete picture of Native American evolutionary histories. *American Association of Physical Anthropologists Program*.

**Hughes CE**, J Cybulski, RS Malhi. 2013. An ancient crime scene: a genetic investigation of decapitated individuals from prehistoric Pacific Northwest coast warfare. *American Association of Physical Anthropologists Annual Conference*.

Perry GH, L Kistler, A Ratan, LR Godfrey, BE Crowley, **CE Hughes**, R Lei, Y Cui, ML Wood, KM Muldoon, H Andriamialison, JJ McGraw, LP Tomsho, SC Schuster, W Miller, EE Louis AD Yoder, RS Malhi, GH. 2013. Comparative and population genomic analyses of Madagascar's extinct, giant 'subfossil' lemurs. *International Prosimian Congress Annual Conference*.

**Hughes CE**, C Juarez, and R Reineke. 2012. Research and data collection on the border dead: Access, ethics, and centralization. *Disaster, Displacement and Human Rights Program Inaugural Conference*.

**Hughes CE**, C Juarez, and R Reineke. 2012. Research and data collection on the border dead: Access, ethics, and centralization. *American Anthropological Association Annual Conference*.

Rogers M, Goldberg D, **Hughes CE**, Rode A, Johnson J, Malhi R. 2012. Post-European contact Native American female and male population histories inferred from the analysis of mitochondrial DNA and Y-chromosomes. *American Association of Physical Anthropologists Annual Conference*

### **CONFERENCE PROCEEDINGS**

**Hughes CE**, CA Juarez, K Pope. Learning From Our Casework: The Society of Forensic Anthropologists (SOFA) Case Database. *2018 Proceedings of the American Academy of Forensic Sciences Annual Conference*.

Go, M, BFB Algee-Hewitt, **CE Hughes**. 2017. Classification Trends Among Contemporary Filipino Crania Using Fordisc 3.1. *21st International Association of Forensic Sciences Conference*.

**Hughes CE**, BFB Algee-Hewitt. Population Identifiability from Forensic Genetic Markers: Ancestry Variation in Latin America. *2017 Proceedings of the American Academy of Forensic Sciences Annual Conference*.

**Hughes CE**, BFB Algee-Hewitt, E Clausen, R Reineke, BE Anderson. Temporal Patterns of Mexican Migrant Ancestry: Implications for Identifications. *2015 Proceedings of the American Academy of Forensic Sciences Annual Conference*.

**Hughes CE**, G Fowler. Same Border, Different People: Development and Assessment of Sex Estimation Methods for Multiple Hispanic Populations. *2014 Proceedings of the American Academy of Forensic Sciences*

**Hughes CE**, B Algee-Hewitt. Assessing Morphogenetic Variation in Mexico: Tests of Method Informedness for Improved Skeletal Identifications. *2014 Proceedings of the American Academy of Forensic Sciences Annual Conference*

**Hughes CE** and C Juarez. A Simulation for Exploring the Effects of the “Trait List” Method’s Subjectivity on Consistency and Accuracy of Ancestry Estimations *2011 Proceedings of the American Academy of Forensic Sciences*

**Hughes CE** and C Juarez. Frequencies of Non-Metric Characteristics in Northern California Native Populations: Establishing a Foundation for Comparison. *2009 Proceedings of the American Academy of Forensic Sciences*

**Hughes CE** and C Juarez. Past or Present? An Empirical Basis for Quantitatively Distinguishing Between Prehistoric and Modern Forensic Cases Using a California Native American Population. *2009 Proceedings of the American Academy of Forensic Sciences*

**Hughes CE.** Ancestry Informative Markers and Forensic Anthropologists' New Competition: Understanding Theories, Methods and Techniques for Allocating Ancestry in the Field of Forensic Genetics. *2008 Proceedings of the American Academy of Forensic Sciences*

### **CURRENT RESEARCH**

- Uses and Limitations of Forensic DNA Phenotyping: Race, Pigmentation and Genetic Ancestry
- Morphogenetic variation in Mexican Migrants: Tests of method informedness for improved skeletal identifications
- Iso-mito GIS prediction tool for identifying region of origin for unidentified deceased migrants along the U.S.-Mexico border.

### **GRANTS AND AWARDS**

- 2019–21 Department of Justice Research Grant (\$267,117): *Learning from Our Casework: The Forensic Anthropology Database for Assessing Methods Accuracy*
- 2013 Society of Forensic Anthropology ATLAS Research Grant (\$1000): *Web-Based Forensic Anthropology Case Database for Research Purposes*
- 2012–4 UIUC Interdisciplinary Innovation Initiative Research Grant (\$189,000): *Uses and Limitations of Genomic Research in Forensic Science*
- 2008 Alliance for Graduate Education and the Professoriate (AGEP) Research Grant
- 2007 International Association for Identification Robert L. Johnson Grant (\$2,000)
- 2005–7 National Science Foundation Graduate Research Fellow

### **PANELS AND INVITED PRESENTATIONS**

- 2018 “Compatibility of Ancestry Composition Estimations of Forensic STR loci versus Ancestry Informative Markers”  
*AAPA Annual Conference*
- 2018 “Collaborating and Educating Investigators on Genetic Prediction of EVCs and Ancestry: The Role of Forensic Anthropologists”  
*Society of Forensic Anthropologists Annual Meeting*
- 2018 “Estimating a Person's Race, Ancestry and Appearance: Practices and Implications in Forensic Investigations “

- UIUC Psychology Department Seminar Series*
- 2017 “Novel Forensic Applications of mtDNA and STRs”  
*Genomics for™ Police*
- 2016 “Temporal Patterns of Mexican Migrant Genetic Ancestry: Implications for Identification”  
*UCSC Department of Anthropology Arch/Phys Colloquium, Santa Cruz CA*
- 2016 “Exploring Fundamental Challenges in Forensic Approaches to Race, Physical Appearance and Ancestry as Evidence”  
*UCSC Center for Science and Justice, Santa Cruz CA*
- 2015 Human Identity Trade Association (HITA) Workshop Panelist: “Addressing Social Issues with Human Identification: An Interactive Workshop”  
*International Symposium on Human Identification 2015 Conference, Dallas TX*
- 2015 Taboo Talks Seminar Panelist: “Immigration: Myths and Legalities”  
*UIUC Department of Anthropology, La Colectiva, La Casa Cultural Latina*
- 2015 “A Multi-Component Analysis of Mexican Variation with Forensic Implications”  
*AAPA Annual Conference*
- 2014 “Forensic Investigations and New Genomic Technologies”  
*Genomics for™ Prosecutors*
- 2014 “Forensic Genomics and Race”  
*Genomics for™ Teachers*
- 2013 “Multi-tool Approaches to Forensic Anthropology Casework: A Case Study”  
*Society of Forensic Anthropologists Annual Meeting*
- 2013 “Race and Face in the Forensic Context”  
*UIUC Department of Psychology*
- 2013 “Bordering on Identity; Forensic Science in the Genomic Age”  
*UIUC Department of Anthropology*
- 2013 “Forensic Science in the United States”  
*China Executive Leadership Program: China Ministry of Justice Delegation*
- 2012 “DNA as Evidence and its Dynamic Applications in Forensics, Native American Land Claims and the U.S-Mexico Border Crisis”  
*Innocence Project, University of Illinois at Springfield*
- 2012 Panelist for “Death on the U.S.-Mexico Border: Biological and Cultural Approaches”  
*American Anthropological Association Annual Conference*
- 2008 Panelist for “Race and Forensic Anthropology: Where the Field Needs to Go”  
*UC Santa Cruz Science and Justice Working Group*

## **PROFESSIONAL MEMBERSHIPS**

- American Academy of Forensic Sciences (2006 – Present)
- Society of Forensic Anthropologists (2012 – Present)
- American Association of Physical Anthropology (2012 – Present)
- American Anthropological Association (2012 – 2014)
- International Association for Identification (2007 – 2009)

## **SYNERGISTIC ACTIVITIES**

- Journal Reviewer for *Human Biology*, *PLOS Genetics*, and *American Journal of Physical Anthropology*, *Proceedings of the National Academy of Sciences*
- Grant Reviewer for National Geographic Society
- Advisory Board Member for the University of Illinois at Urbana- Champaign Police Training Institute (2018 – Present)
- Member of the American Academy of Forensic Sciences Academy Standards Board, Anthropology Section (2016 – Present)
- Research Advisory Board Member for Colibri Center for Human Rights (2015 – Present)
- Research Review Board Member for Pima County Office of the Medical Examiner (2014 – Present)
- Development Committee Member for Society of Forensic Anthropology Case Database (2012 – Present)
- Co-instructor for UIUC Carl R. Woese Institute for Genomic Biology’s Massive Open Online Course (MOOC): Genomics for™ Lawyers (2018)
- Co-editor for *Human Biology* special issues “Thinking Computationally about Forensics: Anthropological perspectives on advancements in technologies, data and algorithms” (2017 – 2018)
- Co-organizer of Carl R. Woese Institute for Genomic Biology’s Genomics for™ Workshop (2014 – 2015)
- Co-organizer for UIUC Forensic Genetics Workshop (2014)
- Co-organizer for the UCSC Science and Justice Working Group’s “Race and Forensic Anthropology” Panel (2008)
- Case Consultant for DNA and/or forensic anthropology (2006 – Present)
  - Illinois State Police
  - Illinois County Coroners’ Offices: Le Salle, Iroquois, Will, Peoria, Franklin
  - Innocence Project, University of Illinois Springfield Branch
  - St. Louis County Medical Examiner’s Office, Missouri
  - Wake County Sherriff’s Office, North Carolina
  - Colibri Center for Human Rights
  - Forensic Anthropology Foundation of Guatemala
  - Pima County Office of the Medical Examiner
  - California Counties: Santa Cruz, San Luis Obispo, Humboldt, and Alameda

## **COMMUNITY ENGAGEMENT**

- 2017 Invited Speaker, Champaign County Investigators Meeting
- 2017 Co-organizer of 4H Illini Summer Academies Anthropology Course
- 2017 Invited Speaker, Parkland Community College
- 2016 Invited Speaker, Santa Barbara Community College
- 2015 – 6 Forensic Science Curriculum Development, Urbana High School, ESL students
- 2014 – 5 Genomics for™ Workshops Speaker
- 2014 Invited Speaker, Saint Joseph Middle School
- 2014 Invited Career Day Speaker, Mahomet High School



2010     Invited Speaker, University of Illinois Laboratory High School

Media Highlights:

- Court Testimony:
- How Aware of Bias are the Police? <https://www.wbez.org/shows/wbez-news/how-aware-of-bias-are-the-police/940320da-62fd-4d8e-b6db-5d59e4a9e3b8>
- Forensics 2.0 <https://www.the-scientist.com/?articles.view/articleNo/47794/title/Forensics-2-0/>
- Even in Death, Indigenous Border Crossers Marginalized
  - <https://phys.org/news/2017-05-death-indigenous-border-crossers-marginalized.html>
  - <https://scienmag.com/report-even-in-death-indigenous-border-crossers-marginalized/>
  - [healthmedicinet.com/i/report-even-in-death-indigenous-border-crossers-marginalized/](http://healthmedicinet.com/i/report-even-in-death-indigenous-border-crossers-marginalized/)
  - [www.sciencenewsline.com/news/2017050318030088.html](http://www.sciencenewsline.com/news/2017050318030088.html)

**COURSES TAUGHT AND DEVELOPED**

- Introduction to Forensic Science (online, general education credit)
- Forensic Genetics Laboratory
- Forensic Anthropology
- Human Osteology
- Introduction to Biological Anthropology
- Human Anatomy (undergraduate, graduate, and medical school curricula)
- Human Physiology
- Issues in Contemporary Forensic Anthropology Seminar

**CERTIFICATIONS AND TRAINING**

2009     San Luis Obispo Fire Investigation Strike Force Training; 40 hours of fatal fire scene investigation and case preparation