

Nicollette S. Appel, Ph.D.

Phone: (516) 672-6198 | **Email:** nappel@unm.edu

EDUCATION:

- 2020-2026 PhD in Evolutionary Anthropology with Distinction
The University of New Mexico
Advisor: Dr. Heather Edgar D-ABFA
- 2020-2022 M.S. in Evolutionary Anthropology
The University of New Mexico
Advisor: Dr. Heather Edgar D-ABFA
- 2015-2017 M.S. in Forensic Anthropology with High Honors
Boston University School of Medicine
Advisor: Dr. Donald Siwek
- 2011-2015 B.S. in Biology
Minors in Anthropology, Chemistry, Dance
The University of Miami
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RESEARCH INTERESTS:

Biocultural Anthropology, Forensic Anthropology, Virtual Anthropology, Human Variation, Age Estimation, Quantitative Analysis, Skeletal Biology, Bioarchaeology

Dissertation Research: *Disparities Between Chronological and Biological Age: A Biocultural Analysis of Aging in Contemporary Populations*

Master's Thesis: *Long-Term Cocaine Use and Its Potential Effect on Bone Morphology*

ACADEMIC APPOINTMENTS:

- 2026 Research Consultant (MOSAIC), University of New Mexico
- CT data collection of craniometrics, postcranial measurements, age estimation, population affinity estimation, dental morphology, dental metrics, and sex estimation
 - Supervise and train undergraduate and graduate students assisting with data collection
- Adjunct Professor, Adelphi University
Forensic Anthropology and Osteology
- Develop a forensic anthropology and osteology lecture and lab course
 - Topics covered include: theories of biological anthropology, introductory osteology, creation of a biological profile, trauma analysis, pathology analysis, taphonomy, and report writing
- 2025-2026 Research Assistant (MOSAIC), University of New Mexico
(Supervisor: Dr. Heather Edgar)
- Collaborate on the development of protocols for biological profile data collection methods

- Data collection of craniometrics, postcranial measurements, age estimation, population affinity estimation, dental morphology, dental metrics, and sex estimation
- 2020-2024 Research Assistant (MMIP), University of New Mexico
(Supervisor: Dr. Heather Edgar)
- Creation of protocols for CT segmentation of cranium and long bones in Amira
 - Creation of a protocol for recording 3D coordinate data in Geomorph R package
 - Data collection of craniometric and postcranial measurements from CT scans
 - Supervise and train undergraduate and graduate students assisting with data collection
- 2020-2022 Graduate Teaching Assistant, University of New Mexico
Forensic Anthropology
(Professors: Anna Rautman; Paige Lynch)
- Held weekly office hours to provide additional assistance to students
 - Graded weekly lab assignments, quizzes, and exams
- 2021 Graduate Teaching Assistant, University of New Mexico
Anthropology of the Skeleton
(Professor: Dr. Osbjorn Pearson)
- Taught the lab section two times a week
 - Graded weekly lab assignments, quizzes, and exams
- 2019 - 2020 Adjunct Professor, Long Island University Post
Forensic Anthropology
- Developed the curriculum for the forensic anthropology course
 - Topics covered include: theories of biological anthropology, introductory osteology, creation of a biological profile, trauma analysis, pathology analysis, taphonomy, and report writing
- Development of the Human Species, Culture and Society
- Independent Summer Course
 - Topics covered include: human evolution, human variation, and relation between human beings and other non-human primates
- Human Society
- Independent Summer Course
 - Topics covered include: marriage and kinship, leadership forms, spiritual beliefs and sacred practices, social inequalities, and economic reciprocity and exchange
- 2017 Graduate Teaching Assistant, Boston University
Experimental Design and Statistics for Forensic Anthropologists
(Supervisor: Dr. Peter Cummings)
- Held weekly office hours to assist first year master's students
 - Advised students on experimental design and methods, and statistical analyses of data based on students individual theses projects
- 2016 Graduate Teaching Assistant, Boston University
Advanced Human Osteology
(Supervisor: Dr. Sean Tallman)
- Provided a workshop on bone histology and histological methods used in creating a biological profile
 - Held weekly office hours and created quizzes for first year master's students
- 2013 Workshop Leader, University of Miami
Introduction to Biology (Supervisor: Dr. Michael Gaines)

- Lead a small group workshop to mentor students and help them understand the topics taught in Biology 101
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PROFESSIONAL EXPERIENCES:

- 2025 Forensic Anthropology Intern, New York Office of the Chief Medical Examiner
- Shadow Forensic Anthropology Unit during intake, processing, and case analysis
 - Digitization of files and compilation of dental radiographs for cold case work
 - Reorganization of World Trade Center files
- 2021-2024 Anthropology Morphology Technician, Office of the Medical Investigator
- Process human remains for forensic anthropological analysis
 - Analyses include biological profile, trauma, pathology, and taphonomy
 - Assist with field work for recovery of remains
 - Write and edit official reports
- 2023 Research Collaborator, American Museum of Natural History
- Forensic examination of a subset of skeletal remains
 - Analysis of biological profile and trauma
 - Development of short report to guide future efforts related to human remains
- 2019-2020 Forensic Scientist I: Latent Print Section, Nassau County Office of the Medical Examiner
- Perform comparisons of latent prints from scenes throughout Nassau County, NY.
 - Process latent prints using physical and chemical methods
 - Obtain post-mortem prints in order to identification an individual
 - Accession evidence on a rotating basis
- 2018 Forensic Scientist Trainee: Latent Print Section, Nassau County Office of the Medical Examiner
- Part of the internal training program of the Latent Print Section
 - Read professional articles, performed comparison and processing exercises, and completed two written exams
 - Obtained post-mortem prints in order to identify an individual
- 2017 Educator, Harlem Education Activities Fund
- Taught a middle school level forensic science course to high potential underserved students in Brooklyn, New York
 - Developed my own lesson plans, curricula, and lab activities
- 2016 Medico-legal Death Investigations Intern, Massachusetts Office of the Chief Medical Examiner
- Assisted the medico-legal investigations team on active and cold cases
- Forensic Anthropology Intern, Massachusetts Office of the Chief Medical Examiner
- Worked alongside Dr. James Pokines with reconstruction of the cranium and post cranial elements related to active cases
 - Catalogued and documented past forensic odontological specimen
- 2011 Research Assistant, Feinstein Institute Orthopedic Research Laboratory
- Aided in research with aims to improve treatment for injuries of the musculoskeletal system including cartilage regeneration and repair
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PUBLICATIONS:

- In Revision **Nicollette S Appel**, Paige Lynch, Cris Hughes. *Identification trends in forensic anthropology cases at the New Mexico Office of the Medical Investigator*. Journal of Forensic Sciences.
- In Review **Nicollette S Appel**, George C Farah, Lexi O'Donnell, Vera Tiesler, Heather JH Edgar. *Bayesian Approaches to Adult Skeletal Age Estimation, Part I: Model Construction Using Skeletal Biomarkers*. Forensic Science International.
- Nicollette S Appel**, George C Farah, Lexi O'Donnell, Vera Tiesler, Heather JH Edgar. *Bayesian Approaches to Adult Skeletal Age Estimation, Part II: Improving Precision with Skeletal Biomarkers*. Forensic Science International.
- 2025 Kelly R Kamnikar, **Nicollette S Appel**, Hannah N Cantrell, Heather JH Edgar. *The impact of identity and population history on population affinity analysis in New Mexico using cranial macromorphoscopic data*. Forensic Sciences. 5(3):45.
- Nicollette S Appel**, Kelly R Kamnikar, Esteban Rangel, M Katherine Spradley, Heather JH Edgar. *A newly developed AI-assisted tool for the collection of cranial landmark data*. American Journal of Biological Anthropology, 187:e70106.
- Max N Golden, Matthiew Matthew H Lee, John W Garrett, Shamsi Daneshvari Berry, **Nicollette Appel**, Ronald M Summers, Heather JH Edgar, Perry J Pickhardt. *AI-enabled body composition biomarkers at post-mortem CT for enriching autopsy: analysis of a large decedent cohort*. Abdominal Radiology.
- 2024 **Nicollette S Appel**, Heather JH Edgar. *A Pilot Study of Age Estimation and Cause of Death: Insights into Skeletal Aging*. Forensic Sciences, 4(4), 508-522.
- Kelly R Kamnikar, **Nicollette S Appel**, Rachel Menegaz, Tea Jashashvhili, Ethan Hill, Heather JH Edgar. *Technical Note: Measuring Bicondylar Length in Computed Tomography Data*. American Journal of Biological Anthropology, 185(4), e25032
- Kelly R Kamnikar, **Nicollette S Appel**, Esteban Rangel, Natalie Adolphi, Amaya Abeyta-Brown, Steven D Ousley, Heather JH Edgar. *Stature estimation equations for modern American Indians in the American Southwest*. Forensic Science International, 361, 2024:112151.
- 2023 **Nicollette S Appel**, Heather JH Edgar, Shamsi Daneshvari Berry, Keith Hunley. *Error and bias in race and ethnicity descriptions in medical examiner records in New Mexico: consequences for understanding mortality among Hispanic/Latinos*. Forensic Science International, 7, 2023:100388.
- 2017 James Pokines, **Nicollette Appel**, Corey Pollock, Christopher Eck, Amanda Maki, A. Skylar Joseph, Lindsey Cadwell, and Christina Young. *Anatomical Taphonomy at the Source: Alterations to a Sample of 84 Teaching Skulls at a Medical School*. Journal of Forensic Identification, 67(4) 2017:600-632.

PRESENTATIONS:

- 2026 **Nicollette S Appel**, Jasmine R Hernandez, Esteban Rangel, Kelly R Kamnikar, Heather JH Edgar. *Bridging the Gap: Validating CT-derived craniometrics with measurements from dry bone*. Presented at the 95th Annual American Association of Biological Anthropologists Conference. Symposium: The First Five Years of Anthropological Research Using The New Mexico Decedent Image Database Denver, Colorado.
- Kelly R Kamnikar, **Nicollette S Appel**, Jasmine R Hernandez, Esteban Rangel, Kate Spradley, Heather JH Edgar. *Using NMDID data to develop methods for underrepresented groups in forensic*

anthropology. Presented at the 95th Annual American Association of Biological Anthropologists Conference. Symposium: The First Five Years of Anthropological Research Using The New Mexico Decedent Image Database Denver, Colorado.

2025 **Nicollette S Appel**. *Detecting differences between biological and chronological age using AI-driven CT biological age modeling: applications for social inequality and health disparities*. Presented at UNM Research and Discovery Week: Weathering, Frailty, and Advanced Biological Age Symposium.

Nicollette S Appel, Kelly R Kamnikar, Kate Spradley, Heather JH Edgar. *AI-Assisted Technological Advancements for the Collection of Cranial Landmark Data and Interlandmark Distances From Medical Imaging Software*. Presented at the 77th Annual American Academy of Forensic Science Conference (Anthropology Section). Baltimore, Maryland.

Kelly R Kamnikar, **Nicollette S Appel**, Micayla C Spiros, Hannah N Cantrell, Heather JH Edgar. *Exploring Cranial Macromorphoscopic Variation in a Modern American Indian Sample From New Mexico*. Presented at the 77th Annual American Academy of Forensic Science Conference (Anthropology Section). Baltimore, Maryland.

Kelly R Kamnikar, **Nicollette S Appel**, Micayla C Spiros, Hannah N Cantrell, Heather JH Edgar. *Improving Identification of Unknowns American Indians and Hispanic/Latinx Americans*. Presented at the National Institute of Justice Research and Development Symposium, American Academy of Forensic Sciences. Baltimore, MD.

2024 Kelly R Kamnikar, **Nicollette S Appel**, Esteban Rangel, Heather JH Edgar. *El uso de muestras osteológicas virtuales para combatir problemas en la antropología forense: Ejemplos del estado de Nuevo Mexico, EE.UU.* Presented at the anual meeting of the Latin American Association of Forensic Anthropology (ALAF). Panama City, Panama.

Natalie L Adolphi, Heather JH Edgar, Kethery Haber, Kelly R Kamnikar, **Nicollette S Appel**, Esteban Rangel. *Determining decedent stature from PMCT images in the New Mexico Decedent Image database (NMDID)*. Presented at the annual meeting of the International Society of Forensic Radiology and Imaging. Krakow, Poland.

Max Golden, Matthew Lee, John Garrett, Shamsi Berry, **Nicollette Appel**, Heather Edgar, Perry Pickhardt. *AI-Based Body Composition Biomarkers at Post-Mortem CT for Enriching Autopsy Evaluation*. Presented at the Society for Advanced Body Imaging Meetings.

Esteban Rangel, Kelly R Kamnikar, **Nicollette S Appel**, Heather JH Edgar. *A comparison of stature estimation methods for contemporary American Indians*. Presented at the 93rd Annual American Association of Biological Anthropologists Conference. Los Angeles, California. Winner of the AABA Outstanding Student Presentation Award.

Nicollette S Appel, Paige Lynch, Cris Hughes. *Identification trends in forensic anthropology cases at the New Mexico Office of the Medical Investigator*. Presented at the 76th Annual American Academy of Forensic Science Conference (Anthropology Section). Denver, Colorado.

Kelly R Kamnikar, Heather JH Edgar, **Nicollette S Appel**, Esteban Rangel. *Improving identification of unknown American Indians and Hispanic/Latinx Americans*. Presented at the 76th Annual American Academy of Forensic Science Conference (NIJ Section). Denver, Colorado.

2023 **Nicollette S Appel**, Kelly R Kamnikar, Heather JH Edgar. *Improving identification of unknown Hispanic Americans and Native Americans in the US. Mejorando la identificación de desconocidos que son Estadounidense Hispanos y gente Indígena de los EEUU*. Presented at the 2023 XXII Coloquio Internacional de Antropología Física Juan Comas. Mexico City, Mexico.

Nicollette S Appel, Heather JH Edgar, Kelly R Kamnikar. *Improving forensic identification of unknown Native and Hispanic Americans: results, progress, and future endeavors*. Presented at the 2023 PittCon Conference and Expo. Philadelphia, Pennsylvania.

Heather JH Edgar, Kelly R Kamnikar, Taylor Busby, Jordan Martinez, Jana Meyer, Mario Pena Munoz, Roberto Rios, Ian Wallace, **Nicollette S Appel**, Stephen Ousley. *A Reassessment of Stature for Modern Native Americans Using the New Mexico Decedent Image Database (NMDID) Data*. Presented at the 75th Annual American Academy of Forensic Science Conference (Anthropology Section). Orlando, Florida.

2022 Heather JH Edgar, **Nicollette S Appel**, Katherine Spradley, Hannah Cantrall, Nichole Benally. *A Pilot Study to Improve the Identification of Unknown American Indians and Hispanic/Latinx Americans*. Presented at the 74th Annual American Academy of Forensic Science Conference (Anthropology Section). Seattle, Washington.

Nicollette S Appel, Heather JH Edgar, Keith Hunley, Shamsi Daneshvari Berry. *Misidentification of Hispanic Individuals During Death Investigations: The Impact of Identification Error on Research in Anthropology and Public Health*. Presented at the 91th Annual American Association of Biological Anthropologists Conference. Denver, Colorado.

2018 **Nicollette Appel**, Donald Siwek, Tara Moore. *Long-Term Cocaine Use and Its Potential Effect on Bone Morphology*. Presented at the 70th Annual American Academy of Forensic Science Conference (Anthropology Section). Seattle, Washington.

2017 James Pokines, **Nicollette Appel**, Corey Pollock, Christopher Eck, Amanda Maki, A. Skylar Joseph, Lindsey Cadwell, and Christina Young. *Anatomical Taphonomy at the Source: Alterations to a Sample of 84 Teaching Skulls at a Medical School*. Presented at the John McCahan Medical Campus Education Day, Boston University School of Medicine.

FIELD EXPERIENCES:

2023-present Team Member, Kenyon International

- Deployment as needed in mass disaster and disaster recovery situations
- Provide aid for cases involving forensic anthropology, forensic archaeology, fingerprint comparison, search and recovery, and more

2016 Field School Participant, Odyssey Field School, Limassol, Cyprus

- Learned excavation and preservation methods related to modern cemetery human skeletal remains
- Was exposed to a variety of pathological changes and trauma to the remains not commonly seen in a forensic context

2014 Field School Participant, The Azoria Project, Kavousi Crete, Greece

- Participated in an excavation of a Neolithic, Late Minoan IIIC, and early Iron Age- Archaic site
- Learned excavation, preservation, and conservation methods related to an archaeological site

GRANTS, AWARDS, AND HONORS:

Grants:

2025 National Institute of Justice. "MOSAIC: Unifying Methods of Sex, Stature, Affinity, & Age for Identification through Computational Standardization." 15PNIJ-24-GG-03840-NIJB. **Research Assistant**.

- 2024 National Science Foundation Doctoral Dissertation Research Improvement Grant. "Doctoral Dissertation Research: Assessing differences between biological age-at-death estimations and known chronological age-at-death in humans." **Co-PI.**
- 2022 National Institute of Justice. "Improving identification of unknown American Indians and Hispanic/Latinx Americans." 15PNIJ-21-GG-04139-SLFO. **Research Assistant.**
- FY22 Congressional Spending. "Pilot Project: Improving identification of unknown American Indians and Hispanic/Latinx Americans." **Research Assistant.**

Awards:

- 2025 Forensic Science Foundation Field Research Grant (Co-PI)
GPSA Student Research Grant
- 2024 Evolutionary Anthropology Research Award
Anthropology Research Development Award
Joseph Powell Anthropology Endowment Fund
- 2023 Forensic Science Foundation Student Travel Award
New Mexico Research Grant – High Priority
Doctoral Conference Presentation Award
GPSA Professional Development Grant
NIJ consultant for the 6th NIJ Forensic R&D Symposium at PittCon
- 2022 Student Conference Award Program
Pollitzer Prize Winner. American Association of Biological Anthropologists
GPSA Student Research Grant
Joseph Powell Anthropology Endowment Fund
- 2011-2015 University of Miami Dickinson Scholarship

Honors:

- 2015-2017 Boston University High Honors
- 2014-2015 Gamma Sigma Alpha Academic Honor Society
University of Miami President's Honor Roll
- 2013-2015 University of Miami Dean's List
University of Miami Provost's Honor Roll
- 2011-2015 National Society of Collegiate Scholars
- 2011-2013 PRISM Program, University of Miami
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SKILLS AND CAPABILITIES:

Laboratory Techniques

- Osteological analysis
- Virtual Anthropology
- Maceration and skeletal processing
- Forensic Photography
- Tissue preservation and sectioning
- Histological staining
- Physical and chemical processing for latent print analysis

Field Techniques

- Field search and recovery
- Burial excavation (solitary and commingled graves)

- Site mapping with Leica TS02 Total Station with Nomad Data

Computer Software

- R Programming
- Amira
- FORDISC 3.1
- 3Skull program and digitizer
- ImageJ Analysis
- Laboratory Information Management System (LIMS/Beast)
- MideoCaseworks computer software
- SPSS statistical software
- Microsoft Office

FEMA certifications (ICS-100, ICS-200, IS-700)