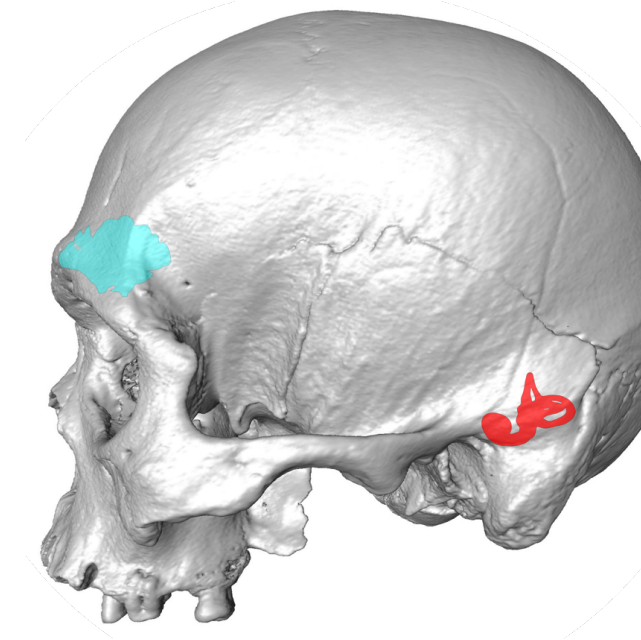


Virtual anthropology & databases for human identification in Mexican populations

Lumila Menéndez
University of Bonn
University of Vienna



On behalf of the “Virtual Anthropology and databases for human identification in Mexican populations” Team



THE TEAM



LUMILA MENÉNDEZ



MIRSHA QUINTO SÁNCHEZ



IVET GIL-CHAVARRÍA



ALICIA FONSECA MUÑOZ



SHUNASHI VICTORIA BUSTAMANTE



YEIMI GUEVARA CONTRERAS



JAIME MAYORAL

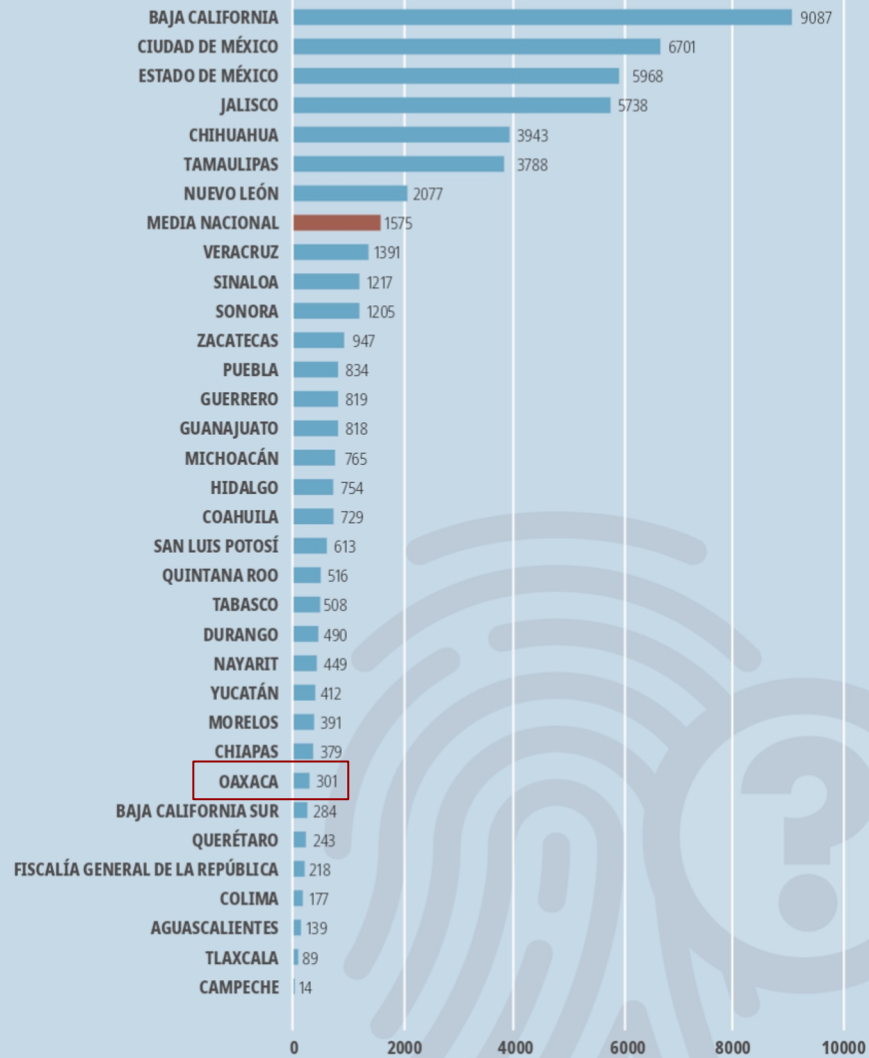


MARCO VELAZQUEZ GUERRERO

PERSONAS FALLECIDAS SIN IDENTIFICAR



52,004



Fuente: solicitudes de acceso a la información pública.

FORENSIC SITUATION IN OAXACA

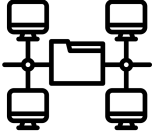


300 non-identified persons



~ 30 skeletons

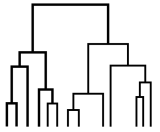
OBJECTIVES OF OUR PROJECT



Set up an internal database for the unidentified bodies/skeletons in Oaxaca



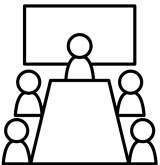
Create a prospective and retrospective imaging repository for the identified and unidentified persons in Mexico city and Oaxaca



Apply Virtual Anthropology and statistics to analyze craniofacial phenotypes for human identification



Train Mexican experts, researchers, and students on Virtual Anthropology techniques for human identification

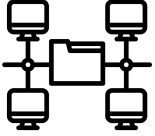


Share the results of the project (conferences, colectivos)



Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

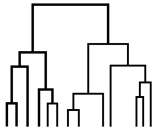
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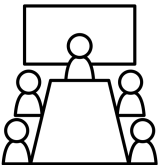
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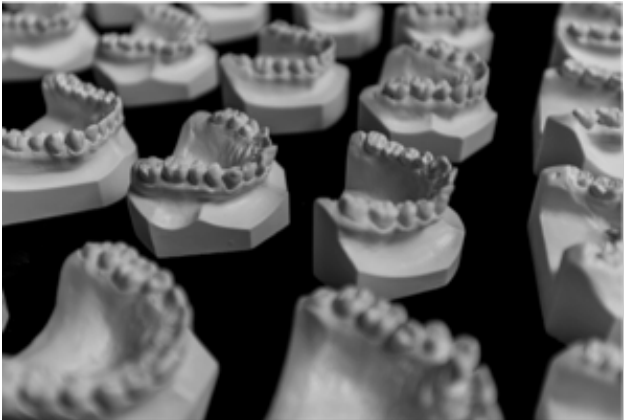


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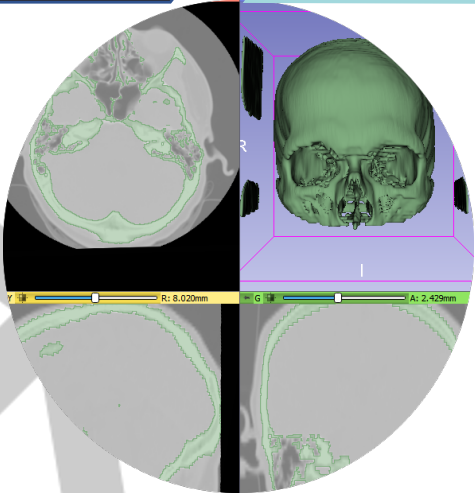


Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

INTERNAL DATABASE IN OAXACA



Dental models



CT-scans

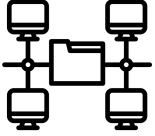


X-rays



AM/PM data

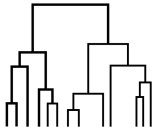
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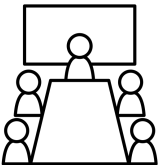
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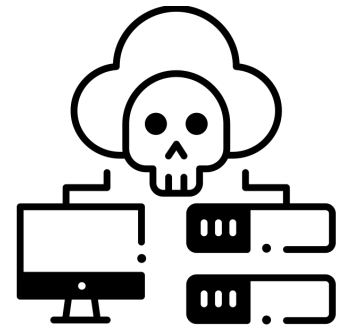
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Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

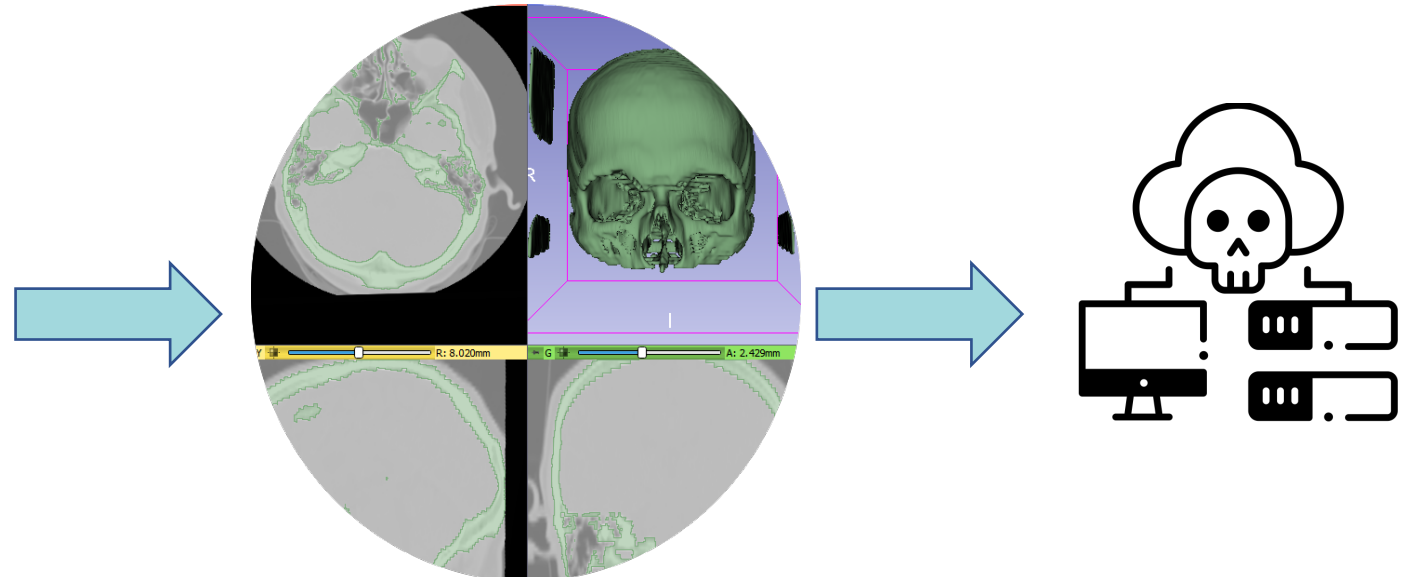
REPOSITORY: PROSPECTIVE DATA FROM IDENTIFIED AND UNIDENTIFIED PERSONS FROM OAXACA

- Hospital Regional de Alta Especialidad (n=200)
- Fiscalía General de Oaxaca (non-identified; n30)

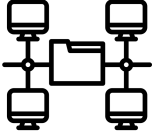


REPOSITORY: RETROSPECTIVE DATA FROM IDENTIFIED AND UNIDENTIFIED PERSONS FROM MEXICO

- Hospital General de México (n=240)
- Hospital Universitario “Dr. José Eleuterio González” (n=30)
- Instituto Nacional de Neurología y Neurocirugía (n=30)
- Colecciones Osteológicas CONa-UNAM (n=35)
- Colección Osteológica de la UNAM (n=30)
- Base de datos Universidad de New Mexico (n=15,000)



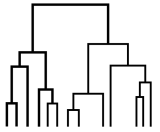
OBJECTIVES OF OUR PROJECT



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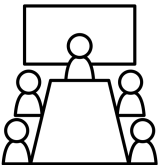
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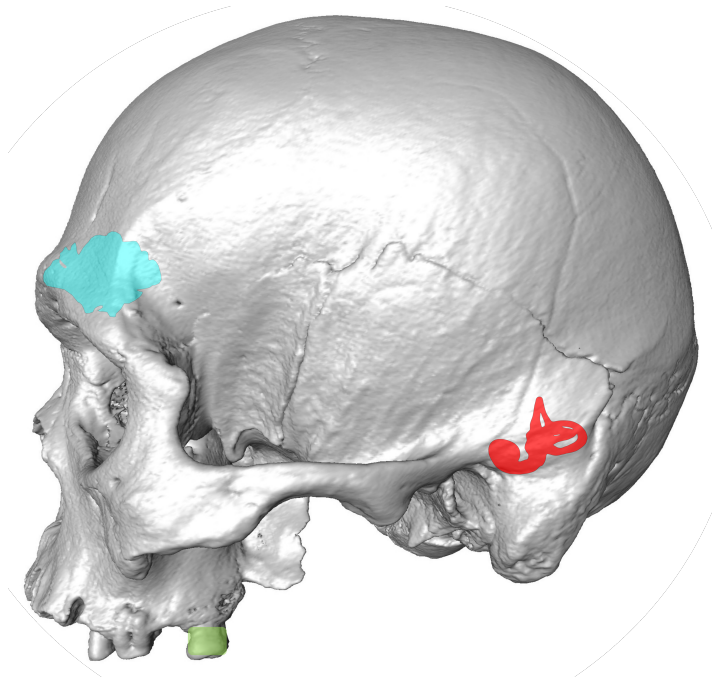


Share the results of the project (conferences, colectivos)

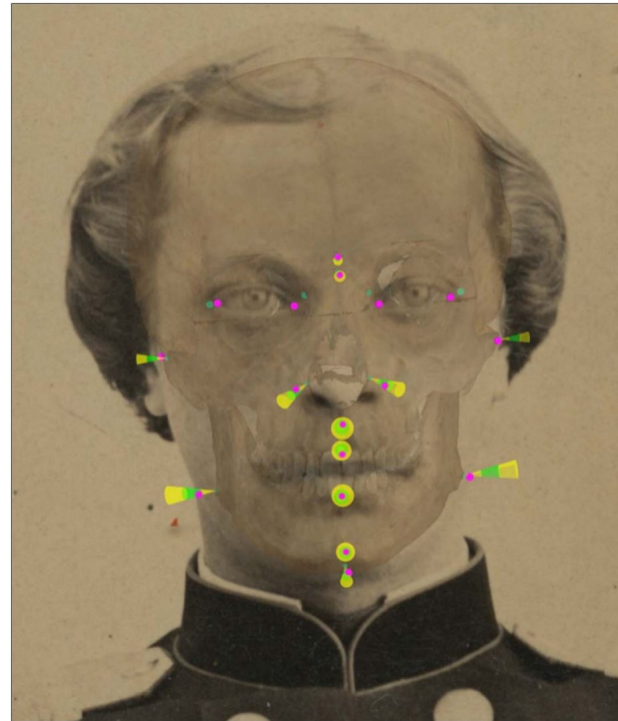


Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

APPLY VIRTUAL ANTHROPOLOGY FOR THE ANALYSIS OF PHENOTYPES



Populational and individual focused study on endocranial, craniofacial, and dental variation



Algorithms for craniofacial correspondence by overlapping photographs and CT-scans

COLLECT PHENOTYPIC DATA



Fotografías AM



Brazo digitalizador "Microscribe"

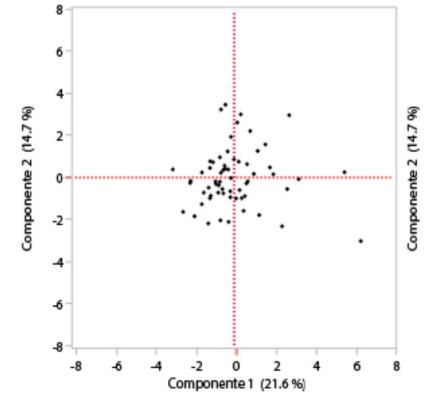
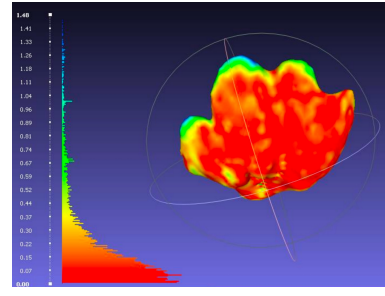
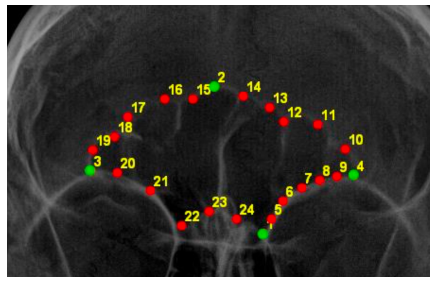
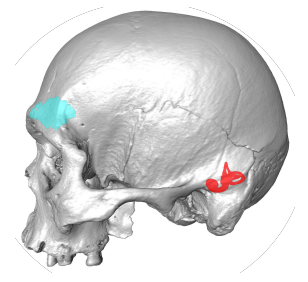


Escaner de superficie "Capture"



Tomógrafo

VIRTUAL ANTHROPOLOGY WORK FLOW

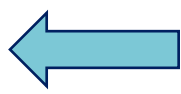
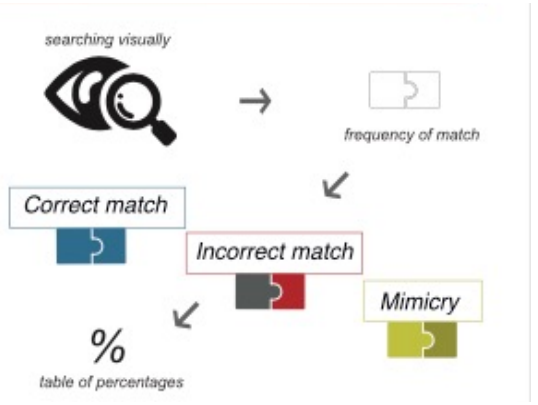
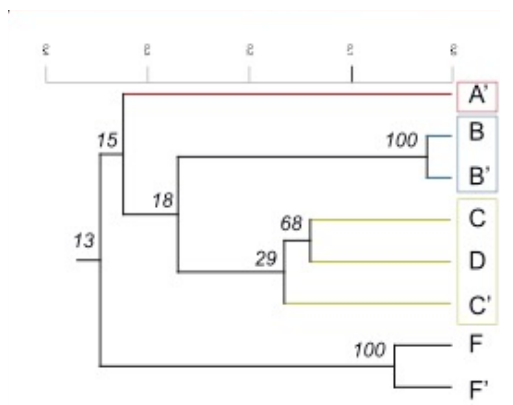


STEP 1 CT-scanning

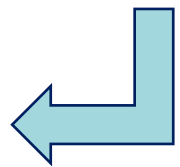
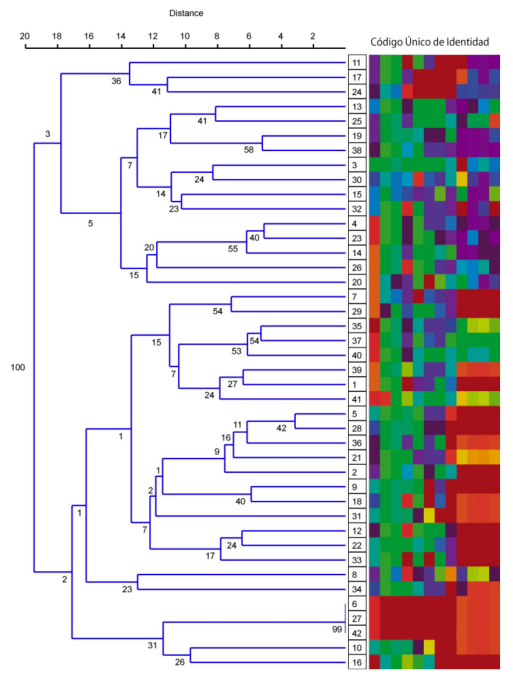
STEP 2 Phenotypic variables

STEP 3 Analysis of variation

STEP 4 Biodistance models



STEP 6 Individualization methods



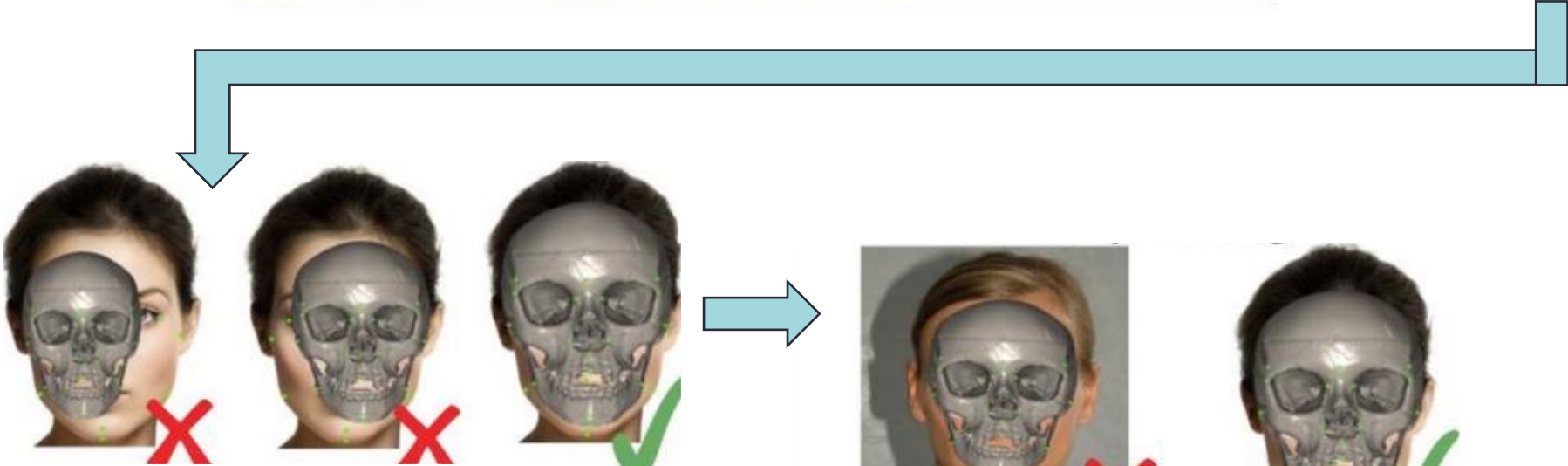
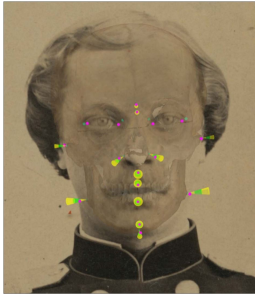
STEP 5 Clustering analysis

PHOTOGRAPHS AND CT-SCAN MATCHING

STEP 1 Acquisition of CT-scans, 3D models, photographs



STEP 2 Landmark registration



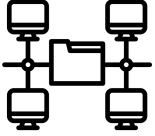
STEP 3 Iterative process trial and error



STEP 4 Decision making after evaluating phenotypic similarities



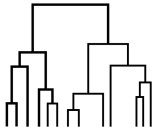
OBJECTIVES OF OUR PROJECT



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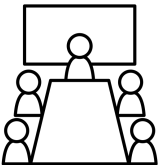
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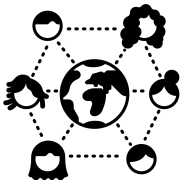
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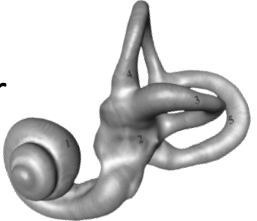


Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

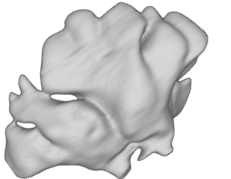
SUBPROJECTS – MASTER THESIS IN MEXICAN UNIVERSITIES



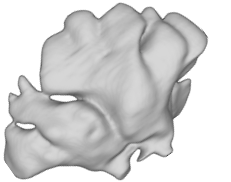
DANIELA IVETH CANCHOLA HERNÁNDEZ (UNAM) – Characterization of inner ear bony labyrinth for human identification in Mexico



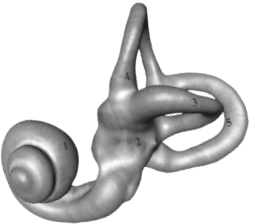
JOEL ORTEGA ALBOR (UNAM) – Morphological variation of paranasal sinuses in humans from central Mexico



IBETH GUADALUPE LEÓN LUNA (UABJO) – Morphological variation of paranasal sinuses in humans from Oaxaca



ALFONSO CHÁVEZ MANUEL (UABJO) – Characterization of inner ear bony labyrinth for human identification in Oaxaca



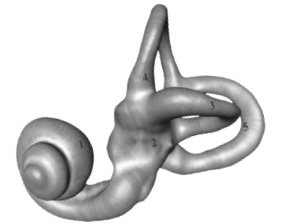
MASTER, PHD, AND POSTDOC PROJECTS IN GERMANY



DANIELA BERRÍO DOMÍNGUEZ (Uni Bonn) – Sexual determination based on imaging techniques on skull and pelvis from individuals from Oaxaca



MARÍA CLARA LÓPEZ SOSA (Uni Bonn) – Characterization of inner ear bony labyrinth for human identification in individuals from Oaxaca



GUILLERMO BRAVO MORANTE (Uni Bonn) – Cranial superimposition techniques for human identification in individuals from Oaxaca



TRAINING FORENSIC STUDENTS & EXPERTS ON VIRTUAL ANTHROPOLOGY METHODS



V CONGRESO DE CIENCIA FORENSE

6, 7 y 8 de octubre de 2021
Modalidad virtual

Para mayor información consultar la página web
<http://www.congresocienciaforense.unam.mx/>

Logos of the organizing institutions: UNAM, Facultad de Medicina, and the Forensic Science Society of UNAM.

Virtual anthropology Workshop
Online, 4-5th October 2021

FGEO
FISCALÍA
GENERAL
DEL ESTADO DE
OAXACA

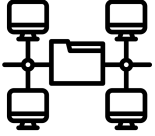


Hands-on Workshop
Oaxaca, 18-19th October 2021



ANDRÉS LOPEZ QUINTERO
Morphometrics and virtual anthropology seminar
University of Guadalajara, February 2022

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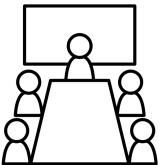
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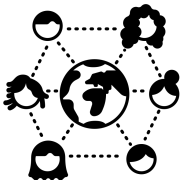
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Share the results of the project (conferences, colectivos)



Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

SHARE THE RESULTS OF THE PROJECT AT CONFERENCES

We organized a session on Virtual Anthropology and Unidentified persons, moderated by Jorge Valdes, at the Congreso de Ciencia Forense:

- Alicia, Entomology & Forensic Science in Oaxaca
- Shunashi, Forensic crisis in Oaxaca
- Yeimi, Dental forensics in Oaxaca
- Mirsha, Virtual Anthropology and forensic science
- Lumila, current project design

The screenshot shows a Zoom Webinar window. The main content is a presentation slide for the 'V CONGRESO DE CIENCIA FORENSE' (5th Forensic Science Congress). The slide features a dark background with white and light blue text and graphics. The title 'V CONGRESO DE CIENCIA FORENSE' is at the top left, with icons for 'INVESTIGACIÓN', 'DIFUSIÓN', 'DOCENCIA', and 'VINCULACIÓN'. Below the title, it says 'Mesa 3' and 'antropología virtual y personas no identificadas' in a large, stylized font. At the bottom right of the slide is a 3D model of a human skull with a cyan-colored area on the forehead. The date 'Octubre 2021' is at the bottom center. The slide also includes logos for LAOF, UNIVERSITÄT BONN, INSTITUTO DE SERVICIOS PERICIALES, CoCiMex, and giz. The Zoom interface shows a grid of participants on the right side, with names like Jorge Alfredo Gómez Val..., Lumila Paula Menéndez, Mirsha Quinto Sánchez, Yelmi Nayely Guevara Co..., Alicia Fonseca Muñoz, Shunashi Soledad Victori..., Chantal Loyzance, Mtro. Juan Carlos Segun..., Ing. Luis Floriberto Fl..., and Mtra. Karla Ivonne Vá... The Zoom window title bar indicates 'Zoom Webinar' and 'You are viewing Mirsha Quinto Sán...s screen'.

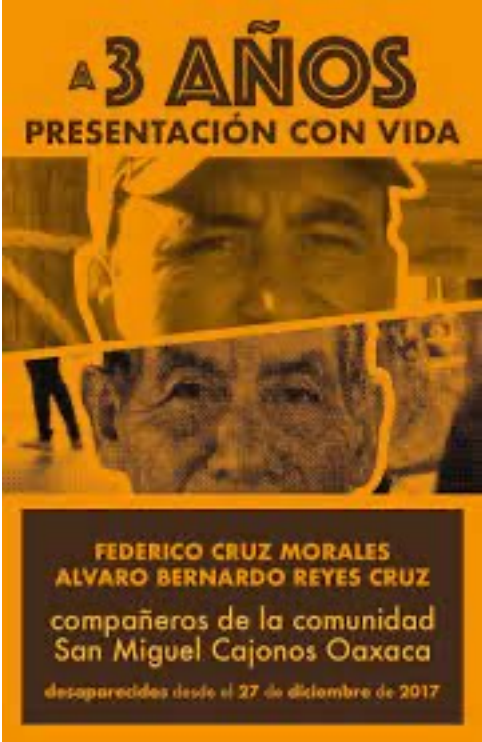
SHARE THE RESULTS OF THE PROJECT WITH COLECTIVOS

OAXAQUEÑOS UNIDOS EXIGIENDO JUSTICIA

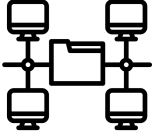
CAMINOS OAXACA: ACOMPAÑAMIENTO A MIGRANTES

COMITÉ DE FAMILIARES DE SAN MIGUEL CAJONOS

SABUESOS GUERREROS EXTENSIÓN OAXACA



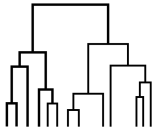
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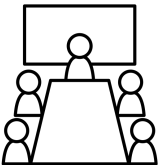
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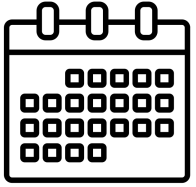


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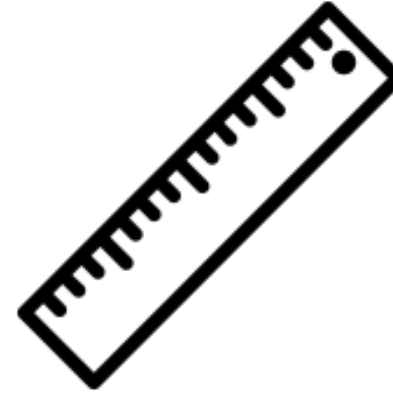


Build up a network on Databases for Unidentified Persons and Virtual Anthropology Techniques for Human Identification

NEXT ACTIVITIES



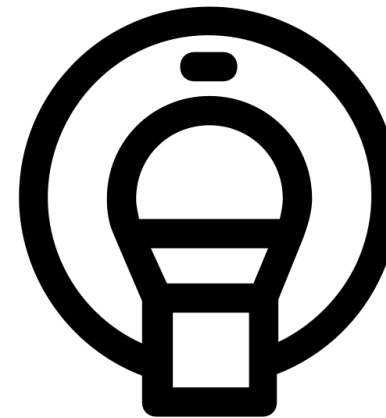
Discuss and development of a protocol



Register data for validation models

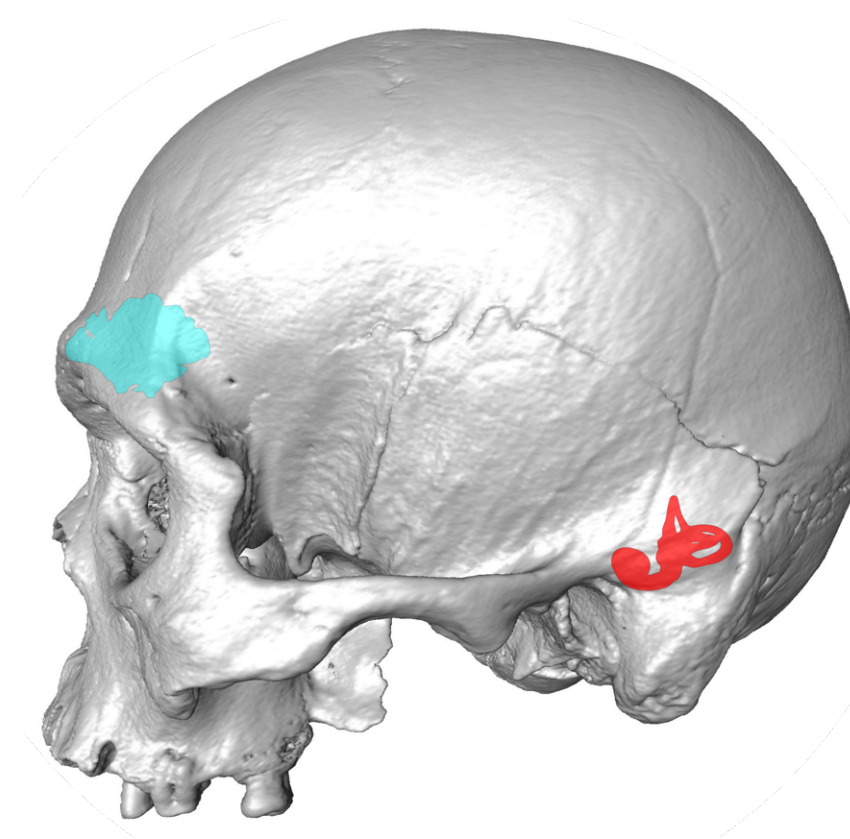


Talk and work with people from colectivos



Collect prospective and retrospective data

*Thank you!
Vielen Dank!
¡Gracias!*



@mexhumanid



mexhumanid@gmail.com



@lumilapm



menendez@uni-bonn.de



Deutscher Akademischer Austauschdienst
German Academic Exchange Service

