Introduction
The identification of human remains believed to be migrants continues to be a complicated problem regardless of the border state in which remains are discovered (e.g. California, Arizona, New Mexico, or Texas). However, some challenges relate to the context of the border and international migration, whereas others are more local and procedural. The purpose of this presentation is to explain the differences in medico-legal death investigation efforts for undocumented migrants in Arizona and Texas, through comparison of Pima County, Arizona and Brooks County, Texas and the proximate and ultimate factors that contribute to identification.

Although Arizona has no laws pertaining to procedures that must be carried out in reference to unidentified human remains, the Pima County Office of the Medical Examiner (PCOME) received over 1,230 migrant fatalities with an identification rate of 65% since 2001 (PCOME 2014). With 271 recorded deaths, the Pima County, Arizona and Brooks County, Texas and the proximate and ultimate factors that contribute to identification.

Data and Methods
A master file database provides for a medical examiner (ME) system for each county. The PCOME provides ME services for four additional counties, covering 95% of undocumented migrant deaths in Arizona (Figure 1). The PCOME also employs two full-time forensic anthropologists. Texas has a combination ME and section of the Peace (JP) system. In Texas, there is one ME office along the border in Webb County and two contacted forensic pathologists serving Hudspeth and Cameron counties. In Texas, many migrant deaths occur in Brooks County, the location of the Border Patrol checkpoint. Brooks County falls under the jurisdiction of the JP system.

Comparisons are made between the protocols employed for unidentified human remains, in this case presented undocumented migrants, at the PCCOME and in Brooks County. Review begins with the pick-up and transport from the death scene to the final disposition of human remains. As DNA associations are increasingly important for migrants that remain unidentified, this review is conducted for its identification protocol with emphasis on DNA associations and ultimate disposition of unidentified human remains. Information found in the TCCP (Texas Coffee Table Chair: Arizona and Texas) was found to be critical to the identification process at the PCCOME (Anderson 2016) and annual reports (PCOME 2014). Information about Brooks County was generated through personal communications with the Argentinian Forensic Anthropology Team (EAAF), Forensic Border Coalition (FBC), and the Webb County Medical Examiner’s Office (Sears 2010).

Results
At the PCCOME, unidentified human remains are subjected to an autopsy and examination (see Figure 2), in the PCCOME employees two full-time forensic anthropologists. Information entered into NamUs and DNA samples are submitted to a private, ASCLD certified DNA laboratory. The unidentified DNA samples are cross-referenced with DNA family reference samples (FRS) from Mexico and Central America collected by the Argentinean Forensic Anthropology Team (EAAF). Case information is then cross-referenced with missing person reports (MP) from NamUs and the Colibri Center for Human Rights. The Colibri Center arches MP reports from the US, Mexico, and Central America from names listed in Mexican and US asylum requests in the past 25 years. DNA samples are collected at the death scene. However, as the Colibri Center is a non-law enforcement agency, their MP reports are often not eligible for NamUs inclusion. If DNA association results from the partnership between the PCOME and Colibri, it is reviewed by both agencies and, if agreement is obtained, the appropriate counselor will facilitate the resolution.

Prior to 2013 (see Figure 2), it is reported that 38% of migrants would distinguish between US and foreign nationals. US nationals were sent for autopsy as an ME office, while suspected foreign nationals were sent directly to a funeral home. The funeral home would attempt identification and an anthropologist would be requested by the JP. The process of identification at the funeral home remains unclear. Some cases remained without an ID hypothesis and were retained with the local coroner. The plot numbers were not recorded and case information was not associated with the burial. No cases were entered into NamUs and no DNA samples were submitted to UNT. The only way to facilitate identification for Brooks County remains, prior to 2013, was through re-exhumations carried out by Baylor University and University of Indianapolis. Remains resulting from the exhumations brought to Texas State are subjected to a protocol following the TCCP (Necropsy entry, DNA sample to UNT for CODIS inclusion) in addition to working with the EAAF. Texas State submits DNA profiles from UNT to the JP. The EAAF profiles are then cross-referenced with FRS collected by the EAAF, resulting in identifications.

Discussion
The focus of this presentation is the PCCOME, while not governed by any specific laws, provides flexibility to compare unidentified information and to submit DNA samples to the most appropriate agency to facilitate identification. The largest challenge for ascertaining long-term unidentified cases (those unidentified for a year or more) lies in the logistic report for the PCOME is also the largest challenge border-wide because the families are unidentified or live in Mexico or Central America countries. Care information for their missing persons is largely absent from NamUs and CODIS. The EAAF and the Colibri Center for Human Rights have developed innovative approaches to this challenge (see www.eaaf.org and www.colibri.org).

For those working to identify the long-term unidentified dead, the context in Brooks County, is challenging for the same reasons described above, with added impediments brought about by specific local and regional practices. Prior to 2013, the system failed to follow the TCCP policy regarding unidentified deaths, and remains were buried prior to autopsy, and anthropology. When a family member submitted their loved one was buried in the local cemetery. There was no identification hypothesis for the individual. While the JP system is currently cross-referenced to the NCIC system at the national level, the TJ system is currently cross-referenced to the CODIS system of all 50 states. Thebury (2016) task is tackling the best practice for evidence collection of unidentified human remains found within and 250 miles of the US border. The work of the PCCOME team, in part, is focused on making it possible to cross-reference FRS from international genetic databases with CODIS. This will allow for a higher number of identifications.

The EAAF will aid identification for jurisdictions that utilize a medical examiner or forensic pathologist. However, preliminary work of the RGI has found that some countries may provide autopsy but fail to follow through with DNA submission, bury remains with temporary markers, and/or to associate the burial with a specific number and/or other counties still use a funeral home to provide identification services. Problems at both the national and regional levels exist and will be addressed comprehensively in order for the majority of unidentified remains cases to be identified and reported.

Conclusions
Most of the critical aspects of DNA comparison is that the appropriate FRS are compared to samples from unidentified human remains cases. The fact that the PCOME is not restricted by state law and can use any system makes for a flexible standard operating procedure that results in high number of identifications. Texas State law requires DNA submission to UNT and subsequently CODIS, although, CODIS currently lacks FRS from the majority of families of missing migrants. Based on the processes generated here, the Texas Peace (JP) system is a possible solution. The PCOME is not restricted by state law and can use any system makes for a flexible standard operating procedure that results in high number of identifications.

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References

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Figure 1: County map of Arizona (left) indicating counties served by the PCCOME (blue) and county map of Texas (right) indicating locations of Brooks, County (red).

Figure 2: Flow chart of process for unidentified human remains at the PCCOME

Figure 3: Flow chart of process for unidentified human remains found in Brooks County, Texas.

Figure 4: County map of Arizona (left) indicating counties served by the PCCOME (blue) and county map of Texas (right) indicating locations of Brooks, County (red).