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UNIVERSITY OF DUNDEE

‘From Innovation to Identification’

BAHID 2016 Summer Conference

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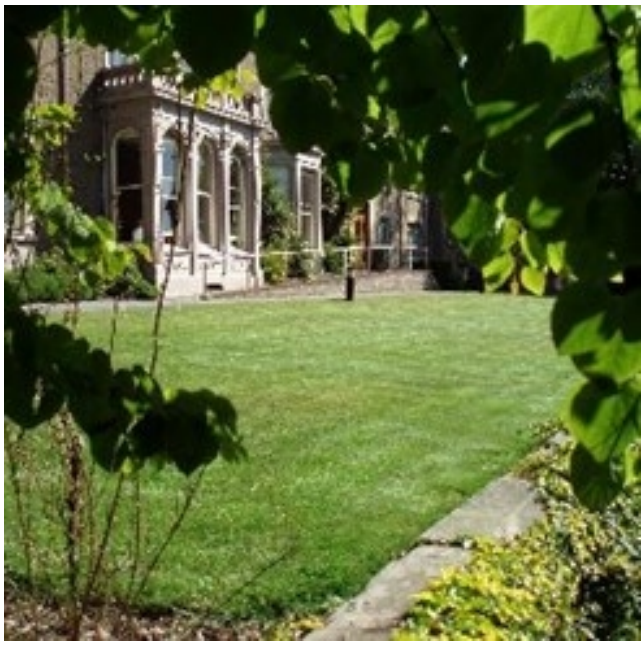

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Accuracy study of nose profile estimation method from the skull in Indonesian adult population

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This study investigated nose profile morphology and its relationship to the skull in an Indonesian adult population, with the aim of improving the accuracy of forensic facial reconstruction. A sample of 355 lateral head cephalograms from Universitas Padjadjaran Dental Hospital Bandung Indonesia was measured. Sexual dimorphism was clearly seen in all craniometric and nose profile dimensions: notably, males exhibited statistically significant larger values than females. The nose profile estimation method based on skull morphology previously proposed by Rynn et al. (2010) was tested in this study. In addition, regression formulae were derived to estimate nose profile dimensions based on the craniometric measurements. This derived method and the published method (Rynn et al, 2010) were compared to the actual nose profile dimensions of Indonesian individuals. The published method produced statistically significant mean differences between the actual and the estimated measurements in all nose profile dimensions in both male and female groups. The percentage of mean difference – actual mean ratio ranged from 2.94 – 16.91%. The derived method produced more accurate results than the published method. For the derived method, the percentage of mean difference – actual mean ratio decreased to a range of 0.3 – 4.81 %. This study demonstrates that the relationship between the morphology of the nasal aperture and that of the nose profile is different between the Indonesian population and the predominantly Caucasoid population from which the published method was derived. It is proposed that the regression equations derived herein from the Indonesian population would yield more accurate nasal profile estimation and should be used in the forensic facial reconstruction of an unidentified Indonesian individual. Future research will investigate the accuracy of both methods on skulls of related ancestry groups.