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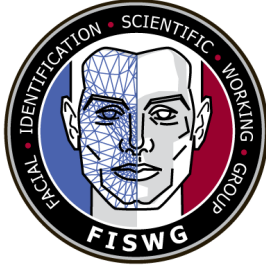
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Guide for Facial Comparison Training of Reviewers to Competency

26 1. Scope

27 1.1 This guide is intended to provide minimum criteria for training of personnel who
28 will conduct facial comparisons at the reviewer level.

29 2. Referenced Documents

30 2.1 *ASTM Standards:*¹

31 ASTM E2916-13 Standard Terminology for Digital and Multimedia Evidence
32 Examination

33 ASTM E3149-18 Standard Guide for Facial Image Comparison Feature List for
34 Morphological Analysis

35 2.2 *FISWG Standards:*²

36 FISWG Facial Image Comparison Feature List for Morphological Analysis

37 FISWG Glossary

¹ For referenced ASTM standards, visit www.nist.gov/osac/astm-launch-code, or the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM.

² Available from Facial Identification Scientific Working Group (FISWG), <http://www.fiswg.org/documents>.

38 FISWG Guide for Mentorship of Facial Comparison Trainees in Role-Based Facial
39 Comparison

40 FISWG Guide for Role-Based Training in Facial Comparison

41 FISWG Minimum Training Criteria When Using Facial Recognition Systems

42 FISWG Physical Stability of Facial Features of Adults

43 **3. Terminology**

44 3.1 *Definitions:*

45 3.1.1 *unfamiliar faces*—Faces of unknown or recently learned people. Unfamiliar
46 faces characterize almost all of face identification decisions made in forensic contexts,
47 as the observer has no previous history with the person they are required to identify.

48 3.1.2 *familiar faces*—Faces of people known to an observer. This includes the faces
49 of family, friends, and colleagues, but also the faces of celebrities and people we
50 encounter regularly (e.g., barista at a café). Familiarity is largely developed over
51 multiple, separate encounters.

52 3.1.3 *face matching*—A type of face identification task requiring a mere perceptual
53 decision whether two simultaneously presented faces (photo, video, live) depict the
54 same person or different people.

55 3.1.4 *holistic process*—The innate human ability of comparing faces by looking at
56 the face as a whole without specifically considering the component parts in isolation.

57 **4. Significance and Use**

58 4.1 Facial Reviewer performs a comparison of image(s)-to-image(s) generally
59 resulting from the adjudication of a candidate list generated by an FRS. The comparison
60 results are often used in either investigative and operational leads or intelligence
61 gathering applications.

62 4.2 The task of facial review includes, but is not limited to, the use of a facial
63 recognition system to review one-to-many galleries. This task may also include
64 environments involving high volume throughput or escalations from facial assessment.

65 4.3 Facial Reviewers require a basic level of training to acquire general knowledge
66 and comprehension of the technology and major elements of the facial comparison
67 discipline and use of available tools (e.g., facial recognition systems, editing software).

68 4.4 The intended audience of this document includes organizations and individuals
69 involved in facial comparison at the reviewer level.

70 **5. Summary of Practice**

71 5.1 This guide provides the minimum criteria for training of facial reviewers and
72 should be read in conjunction with the FISWG Document Minimum Training Criteria
73 When Using Facial Recognition Systems

74 5.2 Organizations should include competency testing or a mentoring program as a
75 component of training. Competency testing may help identify opportunities for
76 continuing education and training. Quality assurance programs should also be a

77 component of training as they are a reliable means of measuring the quality of each
78 trainee's ability to perform work.

79 5.3 Minimum training Requirements for facial reviewers includes demonstrating
80 competency of the following:

81 5.3.1 Familiarity with the history of facial comparisons in forensic science to include
82 past methods and their shortcomings.

83 5.3.2 An understanding of common terminology used in the discipline and should be
84 able to explain the following (including differences and limitations):

85 5.3.2.1 Human face recognition (familiar/eyewitness)

86 5.3.2.2 Automated facial recognition

87 5.3.2.3 Holistic face processing

88 5.3.2.4 Unfamiliar face matching

89 5.3.3 An understanding of the basics of image science including, but not limited to:

90 5.3.3.1 Human Vision (e.g., color, perception)

91 5.3.3.2 Photography (e.g., distortion, pose, illumination)

92 5.3.3.3 Components of digital images and compression (e.g., sensors, pixels,
93 resolution)

94 5.3.3.4 Detection of alterations within images (e.g., excessive compression,
95 manipulation)

96 5.3.3.5 Properties of video (e.g., limitations, formats, extraction of still images)

97 5.3.3.6 Impact of digital imaging, scanning, and printing on facial features

98 5.3.3.7 The proper handling of digital media, write protection of that media, and
99 generating working copies.

100 5.3.4 An understanding of the principles of comparison including, but not limited to:

101 5.3.4.1 Process of Analysis, Comparison, Evaluation, and Verification (ACE-V)

102 5.3.5 Assessment of facial image quality to determine the value for comparison
103 based on the visibility of facial features

104 5.3.6 The differences between class and individual characteristics, as well as those
105 of transient and stable characteristics.

106 5.3.7 Methods of comparisons See FISWG Facial Comparison Overview and
107 Methodology Guidelines

108 5.3.8 Comparison results and the levels of support relevant to facial review (e.g.,
109 exclusion, investigative lead)

110 5.3.9 Familiarity with scientific research related to the validity of facial comparison
111 methods, including their strengths and limitations.

112 5.3.10 Ability to distinguish between relevant and irrelevant task information per each
113 case.

114 5.3.11 Understanding of the difficulty in comparing faces and variability in individual
115 aptitude to perform facial comparison.

116 5.3.12 Understanding of the practical application and operational uses of facial
117 images.

118 5.3.13 Overview and effects of bias (e.g., cognitive, confirmation, contextual)

119 5.3.14 Knowledge of automated facial recognition systems, to include, but not limited
120 to:

121 5.3.14.1 User input and operation

122 5.3.14.2 System operation and output

123 5.3.15 Facial recognition algorithm limitations including, but not limited to:

124 5.3.15.1 Demographics performance variations

125 5.3.15.2 Imaging conditions (e.g., image quality, pose)

126 5.3.15.3 Accessories (e.g., eyeglasses, jewelry)

127 5.3.15.4 Obstructions (e.g., masks, scarves, head coverings)

128 5.3.16 Familiarity in applying basic image processing operations (e.g., brightness
129 and contrast adjustments, rotations, cropping) and an understanding of the impact of
130 these operations on facial appearance.

131 5.3.17 Familiarity with the bones that comprise the skull and the overlaying
132 musculature.

133 5.3.18 Knowledge of the FISWG Facial Image Comparison Feature List for
134 Morphological Analysis (see also, ASTM E3149-18 Standard Guide for Facial Image
135 Comparison Feature List for Morphological Analysis).

136 5.3.19 Knowledge of and ability to explain the physical stability of facial features in
137 relation to aging, expression, weight changes, health changes; and knowledge of

138 intentional alterations and how they can affect the facial features. See FISWG Physical
139 Stability of Facial Features of Adults

140 5.3.20 Knowledge of temporary (e.g., cosmetics, wounds, and abrasions) and
141 permanent (e.g., scars, surgical alterations, tattoos, piercings) changes of the facial
142 features.

143 5.3.21 Minimum training requirements for facial reviewers includes demonstrating
144 awareness of the following:

145 5.3.21.1 Court Testimony

146 5.3.21.2 Their organization's authorities and policies regarding acceptable use and
147 dissemination

148 5.3.21.3 Relevant judicial decisions including the law governing admissibility of
149 scientific evidence in court.

150 5.3.21.4 Standards, guidelines, and best practices including but not limited to:

151 (1) Rules of evidence

152 (2) Chain of custody

153 (3) Documentation of notes

154 (4) Reporting of results

155 (5) Technical review

156 (6) Mitigating or exculpatory disclosures.

157 **6. Keywords**

158 6.1 facial reviewer; training, facial identification, facial comparison

159 FISWG documents can be found at: www.fiswg.org

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