

# OSAC 2022-N-0010 Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program

Bloodstain Pattern Analysis Subcommittee Physics/Pattern Interpretation Scientific Area Committee Organization of Scientific Area Committees (OSAC) for Forensic Science





# **Draft OSAC Proposed Standard**

# OSAC 2022-N-0010 Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program

Prepared by Bloodstain Pattern Analysis Version: 1.0 October 2021

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### Standards for Development of an Accredited Bloodstain Pattern Analyst Certification Program

### 1 Foreword

A bloodstain pattern analyst certification program is a means to ensure the competency, reliability, and quality of the work product of a bloodstain pattern analyst. This document provides guidance in the preparation and participation in an accredited certification program for the discipline of bloodstain pattern analysis (BPA) and for bodies providing certification examination programs. Administration of the process shall be governed and conducted by an International Organization for Standardization (ISO) accredited body.

### 2 Scope

This document targets those persons who have successfully completed the "Standards for a Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard 032, 1st Edition, 2020" planning to pursue BPA certification and for those entities providing the certification examination program. Administration of the process shall be governed and conducted by an ISO accredited body while the certification scheme owner shall be a standard development organization (SDO).

### **3 Normative References**

Standards for a Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard 032, 1<sup>st</sup> Edition, 2020 (http://www.asbstandardsboard.org/wp-content/uploads/2020/05/032\_Std\_e1.pdf).

### 4 Terms and Definitions

### **4.1 Terms**

The following terms are meant to convey the meanings specified.

### 4.1.1

shall - used to indicate that a provision is mandatory (unless otherwise documented for non-compliance).

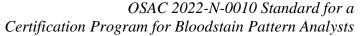
### 4.1.2

**should** - used to indicate that a provision is not mandatory but recommended as good practice.

### 4.2 Definitions

42 For purposes of this document, the following definitions and acronyms apply.

### 4.2.1





**applicant** - person who has submitted an application for admission into the certification46 process.

4.2.2

**assessment** - process that evaluates a person's fulfilment of the requirements of the certification scheme.

4.2.3

**bloodstain pattern analyst** - An individual who has successfully completed the training program set forth in "Standards for a Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard 032, 1<sup>st</sup> Edition, 2020".

4.2.4

**candidate** - applicant who has fulfilled specified prerequisites and has been admitted to the certification process.

4.2.5

**certificate** - document issued by the certification exam provider indicating that the named person has fulfilled the certification requirements.

 4.2.6

**certification** - the process by which a person is tested with regard to knowledge, skill and ability and deemed competent to reliably practice the discipline for which they have been certified.

4.2.7

**certification process** - activities by which the certification exam provider determines that a person fulfils certification requirements, including application, assessment, and certification, recertification.

4.2.8

**certification scheme** - competence and other requirements related to specific occupational or skilled categories of persons.

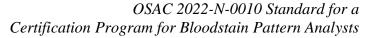
4.2.9

**certification requirements** - set of specified requirements, including requirements of the scheme to be fulfilled in order to establish or maintain certification.

4.2.10

**Competency** - demonstration that a forensic science practitioner has acquired and demonstrated specialized knowledge, skills, and abilities in the standard practices necessary to conduct examinations in a discipline or category of testing prior to performing independent casework.

4.2.11





**examination** - mechanism that is part of the assessment which measures a candidate's competence by one or more means, such as written, oral, practical, and observational, as defined in the certification scheme.

- 4.2.12
- **examiner** person competent to conduct and score an examination, where the examination requires professional judgement.

4.2.13

forensic science practitioner - an individual who (1) applies scientific or technical practices to the recognition, collection, analysis, or interpretation of evidence for criminal and civil law or regulatory issues, and (2) issues test results, provides reports, or provides interpretations, conclusions, or opinions through testimony with respect to such evidence.

- **4.2.14**
- knowledge, skills, and abilities (KSA) the level of information, qualifications, and experience needed to perform assigned tasks.

- **4.2.15** 
  - **proctor** person, authorized by the certification exam provider, who administers or supervises a certification test, but does not evaluate the competency of the candidate.

5 Job and Task Description

Bloodstain pattern analysis involves documentation, evaluation, and analysis of bloodstain patterns; specifically, the size, shape, distribution, appearance, and location of the bloodstains, as well as the surfaces upon which the blood was deposited. The bloodstain pattern analyst uses their knowledge, skills, training, and experience to evaluate the bloodstain(s) and relevant case evidence through application of the scientific method.

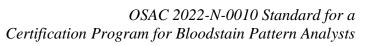
- 6 Application and Administration
- Application and administration of the certification program shall be the responsibility of the certification exam provider.

6.1 Application Process

**6.1.1** 

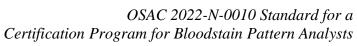
The applicant shall file an application in accordance with the certification examination provider's requirements.

- **6.1.2**
- The applicant shall provide proof of having successfully completed the "Standards for a
- 131 Bloodstain Pattern Analyst's Training Program, ANSI/ASB Standard 032, 1st Edition, 2020".





133	6.2 Assessment Process
134	
135	6.2.1
136	The certification process shall consist of five examination components developed by
137	certified bloodstain pattern analysts. All certification examinations shall be proctored.
138	
139	6.2.1.1
140	Proctor is approved and designated by the certification exam provider.
141	
142	6.2.1.2
143	Candidate has eight (8) hours to complete the examination. The examination shall be divided
144	into the following five components:
145	
146	6.2.1.2.1
147	Pattern Classification: classify a minimum of twenty (20) bloodstain patterns.
148	
149	6.2.1.2.2
150	Practical Exercise: a minimum of 1 (one) Area of Convergence/Area of Origin Determination.
151	
152	6.2.1.2.3
153	Comprehensive Scene Exercise: a section to test the candidate's analytical abilities regarding
154	BPA principles where the candidate is provided bloodstain photographs and investigative
155	questions. There shall be a minimum of ten (10) scenarios.
156	
157	6.2.1.2.4
158	Written Examination: consisting of a minimum of 150 multiple choice and true-false questions.
159	The written examination shall include the topic areas below with the questions apportioned as
160	follows:
161	
162	6.2.1.2.4.1
163	Properties of blood
164	
165	6.2.1.2.4.1.1
166	Composition
167	
168	6.2.1.2.4.1.2
169	Clotting
170	
171	6.2.1.2.4.1.3
172	Drying
173	
174	6.2.1.2.4.2
175	Physics
176	





177	6.2.1.2.4.2.1
178	Surface tension
179	
180	6.2.1.2.4.2.2
181	Viscosity
182	,
183	6.2.1.2.4.2.3
184	Target surface
185	
186	6.2.1.2.4.2.4
187	Forces
188	
189	6.2.1.2.4.2.4.1
190	Gravity
191	
192	6.2.1.2.4.2.4.2
193	Air Resistance/Aerodynamic Drag
194	
195	6.2.1.2.4.2.4.3
196	External forces
197	
198	6.2.1.2.4.2.4.4
199	Adhesive/Cohesive properties
200	
201	6.2.1.2.4.2.5
202	Flight Patterns
203	
204	6.2.1.2.4.2.6
205	Newton's Laws
206	
207	6.2.1.2.4.2.7
208	Cast-off Mechanism
209	
210	6.2.1.2.4.3
211	Mathematical Equations
212	
213	6.2.1.2.4.3.1
214	Basic Trigonometry
215	624244
216	6.2.1.2.4.4
217	Interaction with fabrics
218	
219	6.2.1.2.4.4.1

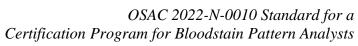
Woven vs. knit fabric composition



264

6.2.1.2.4.12

221	
222	6.2.1.2.4.4.2
223	Awareness of distortion of bloodstain on fabric
224	
225	6.2.1.2.4.5
226	Pattern Classification
227	
228	6.2.1.2.4.6
229	Documentation
230	
231	6.2.1.2.4.6.1
232	Photography
233	
234	6.2.1.2.4.6.1.1
235	Bloodstain Patterns
236	
237	6.2.1.2.4.6.1.2
238	Road mapping
239	
240	6.2.1.2.4.6.1.3
241	Bloodstain Evidence
242	
243	6.2.1.2.4.6.2
244	Sketching
245	
246	6.2.1.2.4.6.3
247	Notes
248	
249	6.2.1.2.4.7
250	Terminology
251	
252	6.2.1.2.4.8
253	Report Writing
254	
255	6.2.1.2.4.9
256	Bias in BPA
257	
258	6.2.1.2.4.10
259	Ethics in BPA
260	
261	6.2.1.2.4.11
262	Recognition of Staged Scenes
263	





265 266	Standards of evidence
267	6.2.1.2.4.13
268	History
269	
270	6.2.1.2.4.14
<ul><li>271</li><li>272</li></ul>	Safety/PPE Consideration
273	6.2.1.2.4.15
274	Circulatory System
275	
276	6.2.1.2.4.16
277	Serological/DNA considerations
278	
279	6.2.1.2.4.17
280	Wound Dynamics
281	
282	6.2.1.2.4.17.1
283	External Injuries
284	
285	6.2.1.2.4.17.2
286	Internal Injuries
287	
288	6.2.1.2.4.18
289	Detection/Enhancement/Collection
290	
291	6.2.1.2.4.19
292	Chemical
293	
294	6.2.1.2.4.20
295	ALS/IR
296	
297	6.2.1.3
298	Legal issues shall be tested on in the written exam portion. Suggested topics to be tested on are
299	issues surrounding qualification and admissibility of the analyst and evidence and notable cases
300	to the bloodstain pattern analysis community.
301	
302	6.2.1.3.1
303	Voir dire
304	
305	6.2.1.3.2
306	Discovery and disclosure
307	
308	6.2.1.3.3



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309 310	Frye and Daubert Standard
311	6.2.1.3.4
312	Federal Rules of Evidence
313	
314	6.2.1.3.5
315	Landmark Court Decisions
316	
317	6.2.1.3.6
318	Notable bloodstain pattern analysis cases
319	Trotable biodustam paccern analysis cases
320	6.2.2
321	Assessment scoring shall adhere to the following guidance:
322	Assessment scoring shall adhere to the following guidance.
323	6.2.2.1
324	The minimum passing score on the written and pattern identification examination components
325	shall be established by the certification exam provider. The recommended minimum passing
326	score for both is 75%. The practical exercise and the comprehensive scene exercise shall be
327	graded on a pass/fail basis.
328	graded on a passyran basis.
329	6.2.2.2
330	If a candidate fails any one of the five components of the certification examination, the
331	certification exam provider shall require a six-month waiting period to apply to retake the failed
332	component. The six-month waiting period starts on the date the candidate was notified of their
333	assessment score by the certification exam provider.
334	assessment score by the certification exam provider.
335	6.2.2.3
336	If a candidate fails two or more components of the certification examination, the certification
337	exam provider shall require a 12-month waiting period to apply to retake the entire
338	examination (all five components). The 12-month waiting period starts on the date the
339	candidate was notified of their assessment score by the certification test provider.
340	during the services of their descentilities of the services providers
341	7 Recertification Criteria
342	7 Access villation of the same same same same same same same sam
343	7.1
344	Certification shall be in effect for a period of five years from the date of issue. Application and
345	administration of the recertification scheme shall be the responsibility of the certification exam
346	provider.
347	provide:
348	7.2
349	The certification exam provider shall establish a minimum requirement for annual continuing
350	education. It is recommended that there is an average of 8 hours of continuing education per
351	year for a period of 5 years.
352	, ca. 10. a pelioa of 5 years.



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353	7.3
354	Applicants for recertification shall be required to:
355	
356	7.3.1
357	Provide proof of continued involvement in the bloodstain pattern analysis discipline.
358	Documentation of continued involvement in the bloodstain pattern analysis discipline shall be
359	defined by the certification exam provider.
360	
361	7.3.2
362	Participate in an examination demonstrating continued competency in the area of bloodstain
363	pattern analysis. The examination shall consist of the following three components:
364	
365	7.3.2.1
366	Pattern classification: classify ten (10) bloodstain patterns.
367	
368	7.3.2.2
369	Practical Exercise: 1 (one) Area of Convergence/Area of Origin Determination utilizing Tangent
370	Method.
371	
372	7.3.2.3
373	Comprehensive Scene Exercise: a section to test the candidate's analytical abilities regarding
374	BPA principles where the candidate is provided bloodstain photographs and investigative
375	questions. There shall be a minimum of ten (10) scenarios.
376	

**7.3.2.47.3.2.4** 

378 All recertification examinations shall be proctored.