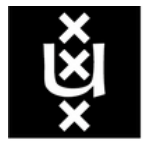


UNIVERSITY OF AMSTERDAM
Institute for Interdisciplinary Studies



Master Forensic Science

Information Session, 12 February 2026,
Arian van Asten, Mika Sprik,
August de Heij



Programme Team



Mika Sprik

- Second year student
- Bachelor Applied Physics



Arian van Asten

- Programme director
- Chair Forensic Analytical Chemistry and On-Scene Chemical Analysis



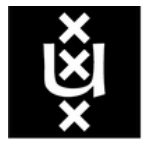
Yorike Hartman

- Programme coordinator



August de Heij

- Study adviser

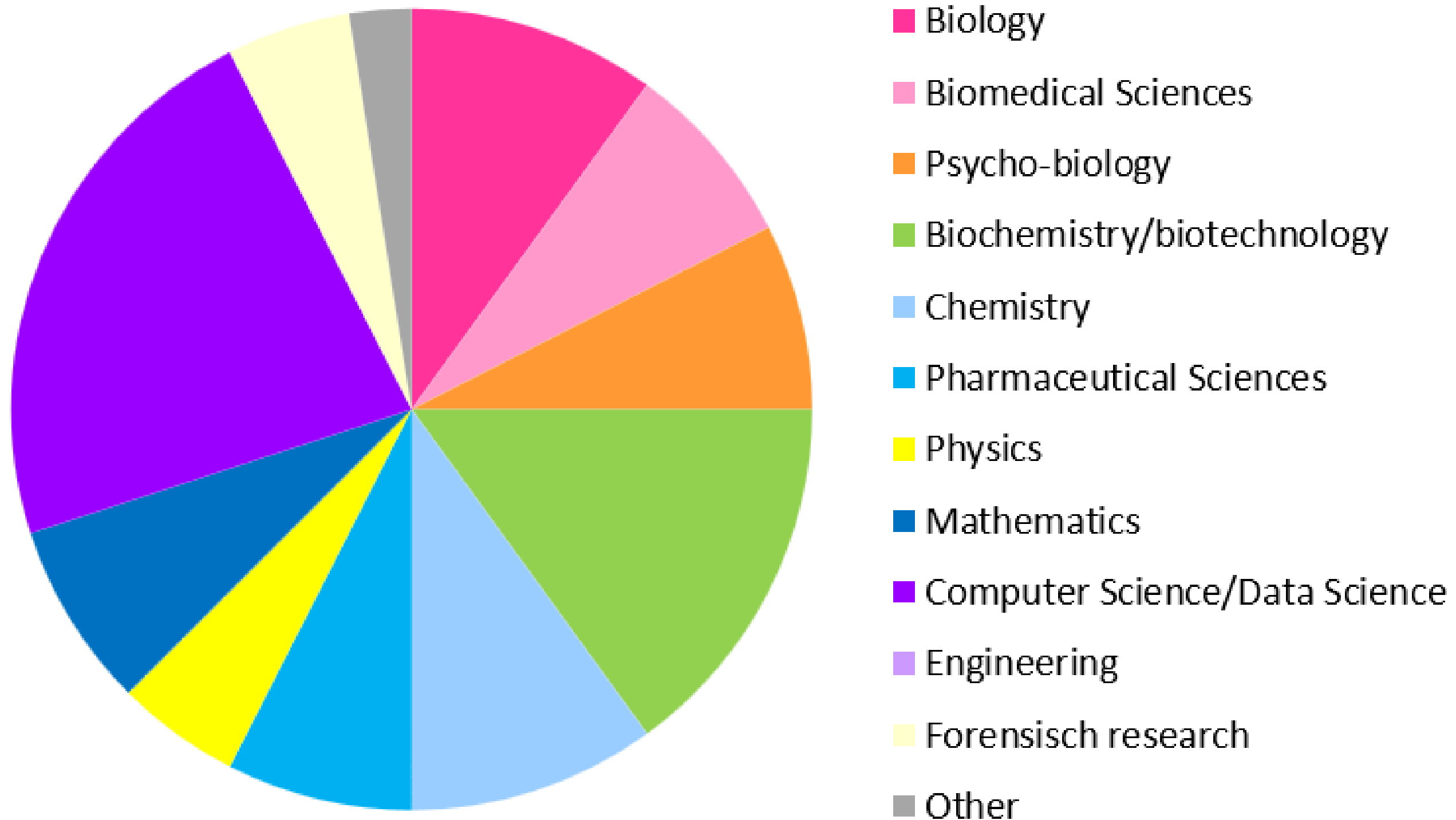


Take home messages

- Research not investigation
- Theoretical not practical (first year)
- Full-time master
- Selective
- International
- In-depth Interpretation of Evidence (first year)
- Disciplinary specialisation (second year)

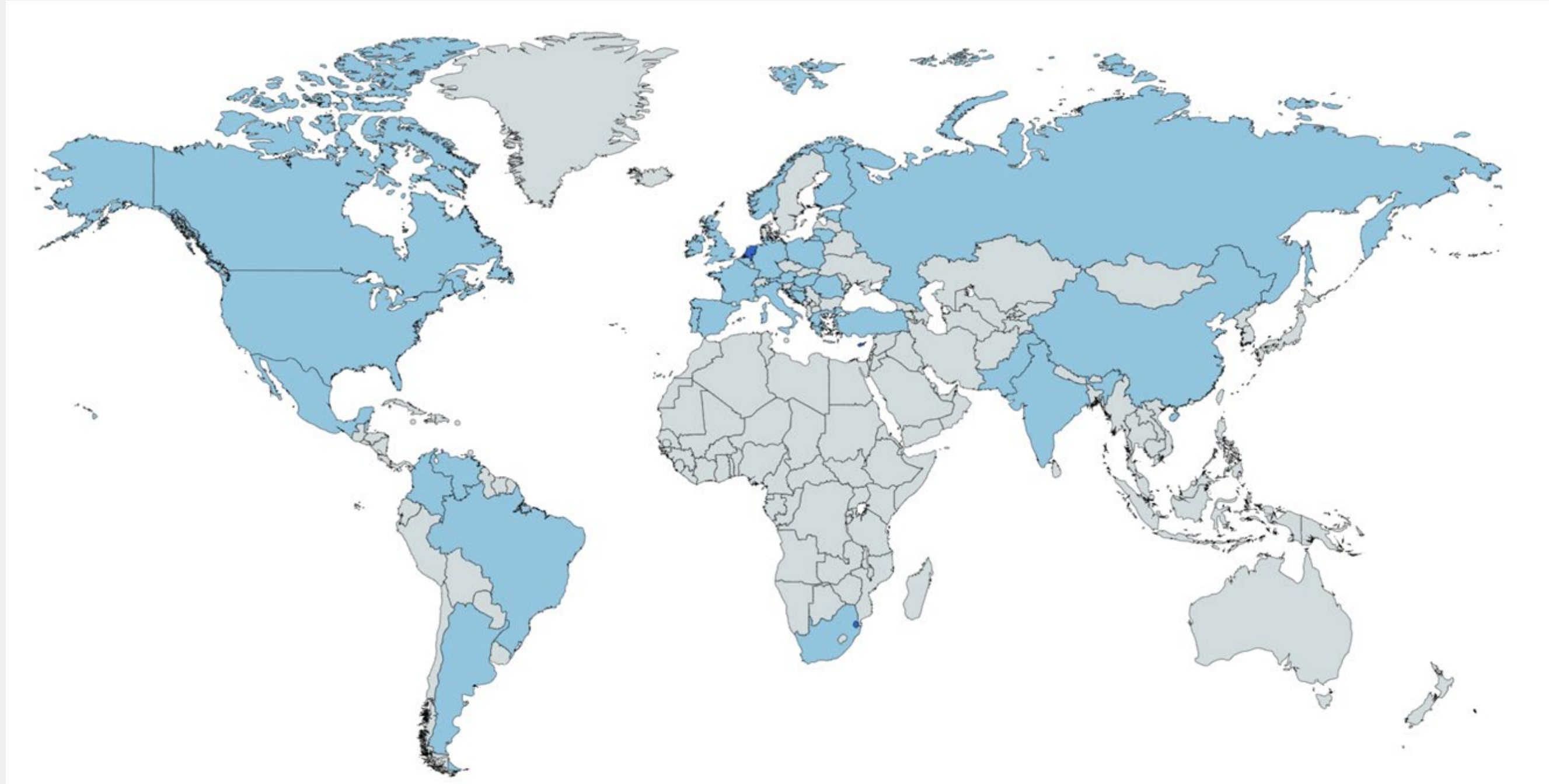


Overview scientific background 25-26



On average: 28 - 42% international students

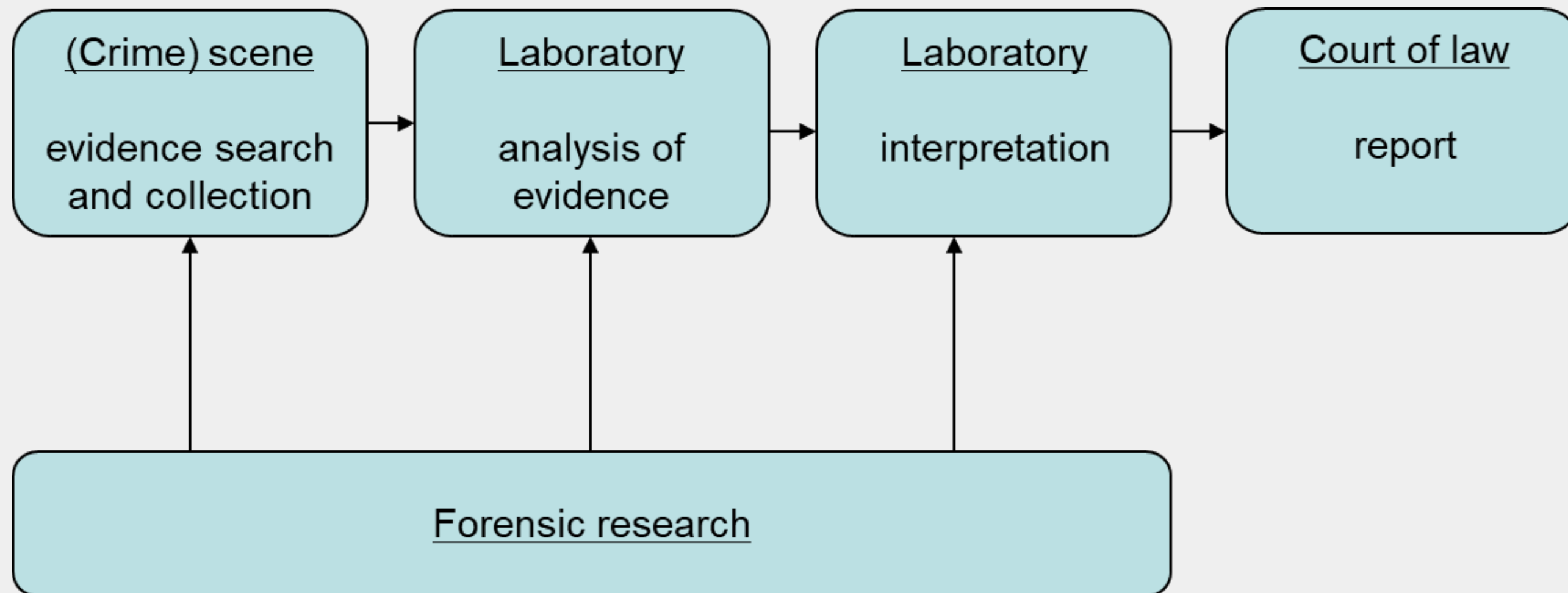
A truly international programme with
alumni and students from 39 countries



550 alumni and 82 students



What is forensic science?



Forensic Science is the application of a broad spectrum of sciences to answer questions of interest to a legal system



Seeing the big
picture &
Sharp eye for
detail



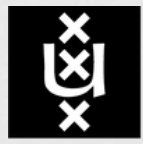


First year: Seeing the big picture

- Overview forensic process and areas of expertise
- Focus on forensic reasoning
- Professional skills: team work and communication
- Many guest lectures from the forensic field

Year 1

Criminalistics Applied to Forensic Chemistry (6 ECTS)	Research and Innovation in Forensic Biophysics (6 ECTS)	Complex Crime Scenes (6 ECTS)	Forensic Statistics and DNA evidence (6 ECTS)	Chain of Evidence (6 ECTS)	Policy, Ethics and Media (6 ECTS)
Statistics for Forensic Science (5 ECTS)	Observer Based Techniques (6 ECTS)		Cybercime, Digital Traces and Forensic Data Analysis (6ECTS)	Criminal Law and Expert Evidence (6 ECTS)	
Professional Development (2 ECTS in 2 years)					



Second year: Sharp eye for detail

Specialisation in your own expertise

- Disciplinary master courses
- Literature Thesis
- Research project

Year 2

Specialisation course** (6 ECTS)	Forensic Elective* Physical and Forensic Anthropology (6ECTS) <u>or</u> Specialisation course**	Research project (36 ECTS)	Students need a total of 18 ECTS for Elective and Specialisation Courses combined or Specialisation Courses only. Therefore: * Elective Courses should add up to 6 EC or no Elective Course is followed ** Specialisation Courses should add up to 12 or 18 ECTS
Specialisation Course** (6 ECTS)			
Literature Thesis (5 ECTS)			
Professional Development (2 ECTS in 2 years)			



A week in the curriculum

Monday, September 22

Tuesday, September 23

Wednesday, September 24

Thursday, September 25

Friday, September 26

9

10

11

12

13

14

15

16

17

Statistics for Forensic Science
Hoorcollege

Criminalistics Applied to Forensic Chemistry
Hoorcollege

Criminalistics Applied to Forensic Chemistry
Hoorcollege

Statistics for Forensic Science
Werkcollege

Statistics for Forensic Science
Deeltoets

Criminalistics Applied to Forensic Chemistry
Presentatie



A week in the curriculum





Chain of evidence

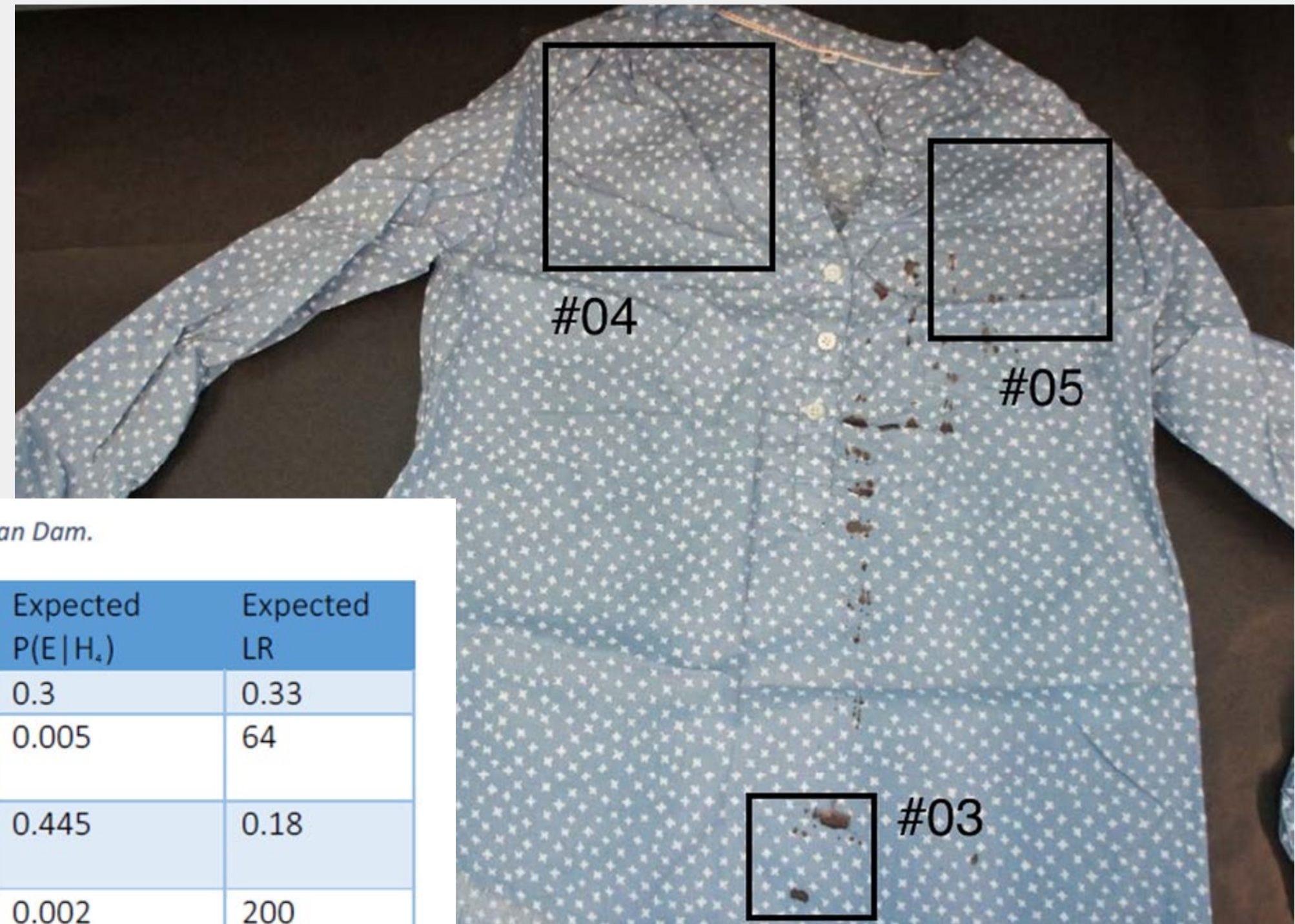


Table 4. Summary of expected values and likelihood ratios for the glass traces from suspect van Dam.

	Expected ($E H_3$)	P	Expected $P(E H_4)$	Expected LR
No glass fragments are recovered	0.1	0.3	0.33	
Few (0-4) glass fragments are recovered, matching the glass found at the crime scene	0.32	0.005	64	
Few (0-4) glass fragments are recovered, not matching the glass found at the crime scene	0.08	0.445	0.18	
Many (>4) glass fragments are recovered matching the glass found at the crime scene	0.4	0.002	200	
Many (>4) glass fragments are recovered not matching the glass found at the crime scene	0.1	0.198	0.5	



Moot court





Excursion



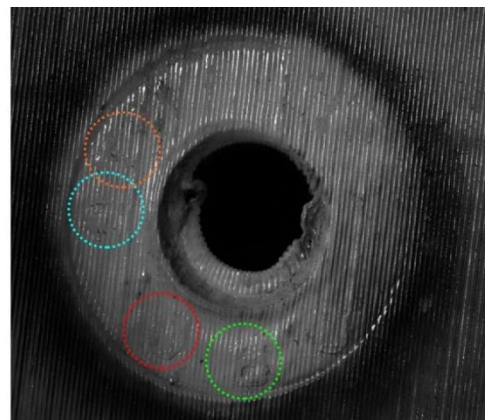
Literature Thesis

→ Investigation of the Dutch firearm expertise framework

- Investigation of current position in expertise framework



Forensic science international 286 pp. 245–251



Forensic science international 295 pp. 137–144

N  DERLANDS National
R  GISTER Register
G  RECHTELIJK of Court
D  SKUNDIGEN Experts

Internship



→ Organization for the Prohibition of Chemical Weapons
Office of Strategy and Policy

- Reports developments in science and technology of relevance
- Science for Diplomats



Research Project

→ Actively looking into

- Physics Simulations
- Geophysics
- Forensic Statistics

Forensic Research Center

<http://www.clhc.nl>



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Co van Ledden Hulsebosch Center

Netherlands Center for Forensic Science and Medicine

Co van Ledden Hulsebosch Center: the interdisciplinary expertise center for forensic scientific and medical research in the Netherlands.

Forensic Research Center

<http://www.clhc.nl>

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Courses Open to Forensic PhD students

Topics for Forensic Master Literature Thesis

Topics for Forensic Master Research Projects

Supervisor and examiner instruction

pulsebosch

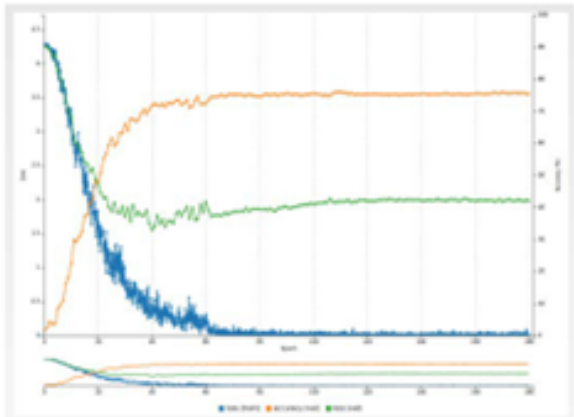
Netherlands Center for Forensic Science and Medicine



Digital Forensics



Forensic Statistics



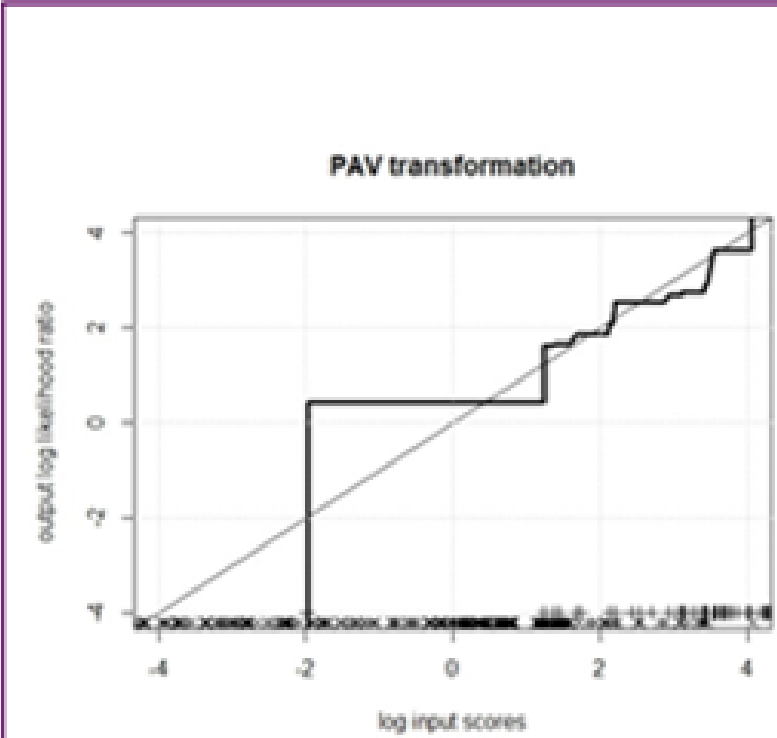
Graphical interpretation of the performance of the model-180 epochs were used. The accuracy plateaus at 75.4% while the loss (val) is 1.9.

test Image Classification Model



Predictions	
T-shirt	62.5%
Blouse	48.6%
Dress	5.8%
Jacket	8.4%

Student	
Research carried out at	NFI
Supervisor	Prof. Dr. Ing. Zeno Geradts
Title thesis	Clothing identification via deep learning: forensic applications
Abstract	Usually, people can be described based on their clothing, which can be considered a visual cue to facilitate the process of identifying individuals. The research project aims to identify people based on the visual information that can be drawn from the attire they wear. Deep learning has been applied in this project in order to train the computer in classifying images with clothing content. Initially, the research involves clothing type classification in a large scale dataset. Unfortunately, the model performs poorly on the large scale dataset. In addition to that, the second part of the research applies clothing attribute classification in a dataset containing popular logos and famous brands images. The results show that the model



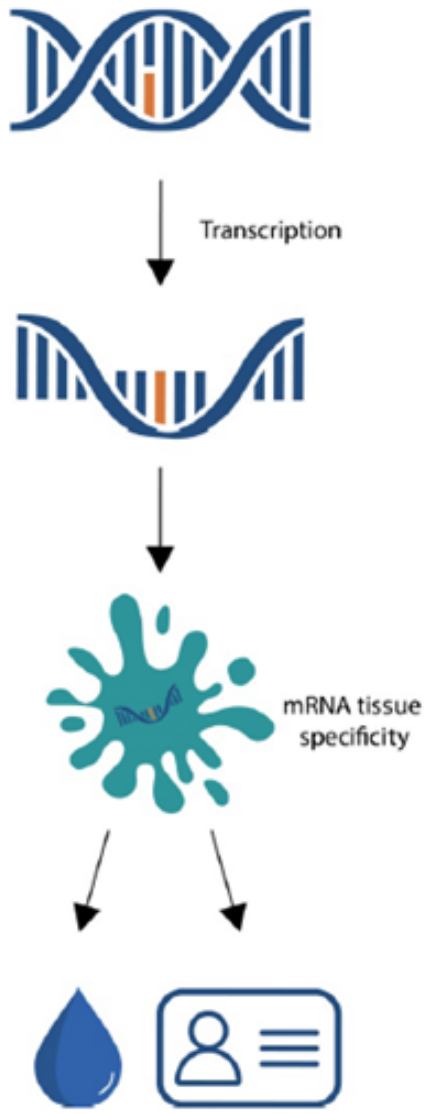
A PAV transformation of LR

Student	
Research carried out at	Dutch Forensic Institute (NFI)
Supervisor	Dr Peter Vergeer
Title thesis	Measuring calibration of likelihood ratio systems
Abstract	When forensic evidence is examined, the conclusions are summarized by a weight of evidence, most commonly the likelihood ratio. There are several methods to calculate these ratios and good performance of such models is essential. Calibration is a performance characteristic and this property can be measured. Different methods to measure the calibration of an LR system are available, and four of them are



Forensic Biology

Student	
Research carried out at	NFI
Supervisor	Margreete van den Berge
Title thesis	Variation in body fluid specific mRNAs: can cell type and donor be associated?
Abstract	In recent years, efforts have been made to associate donors with body fluids found on stains. Although it can be easy to do this in single donor samples and in samples with one male and one female donor and only sex specific cells, in other cases it is normally challenging. In the past, four interns at the NFI have contributed to this field of research, with the first investigating six different body fluids as a proof of principle, the following two increasing the discrimination power for blood and semen, and the last one investigating the assays in mixed samples. The aim of this study was to increase the discrimination power for saliva samples by investigating saliva-specific genes. This was achieved by identifying 42 SNPs in 12 saliva-specific genes. A multiplex set was developed on DNA level, achieving a discrimination power of 69%. Twenty-seven of the 42 SNPs were observed in 86 donors and two new SNPs were posteriorly added to the assay, so, in total, 29 SNPs were observed. Although the discrimination power is already relatively high, it might still be possible to increase it by adding new markers. However, it needs to be done carefully, as the addition of markers that might be expressed in other body fluids in addition to saliva might jeopardise the analysis. Two multiplex sets were synthesised for RNA, however, they could not be sequenced upon the submission of this report. The two sets differ by one marker, which was included to understand how it interferes with the other markers. If the extra marker is added the discrimination power drops to 65%, but if not, it drops to 57%. Although the donors (DNA SNPs) and cell type (RNA SNPs) could not be associated in practice, the markers were chosen for their specificity in saliva, so, as a proof of principle, the results are promising for the association of donors to saliva samples. At the moment, donors are being tested on RNA level using two newly developed multiplexes. The next step is to associate those results with the results on DNA level to ascertain if they can in fact be linked.



Zoom

And many
more fields...

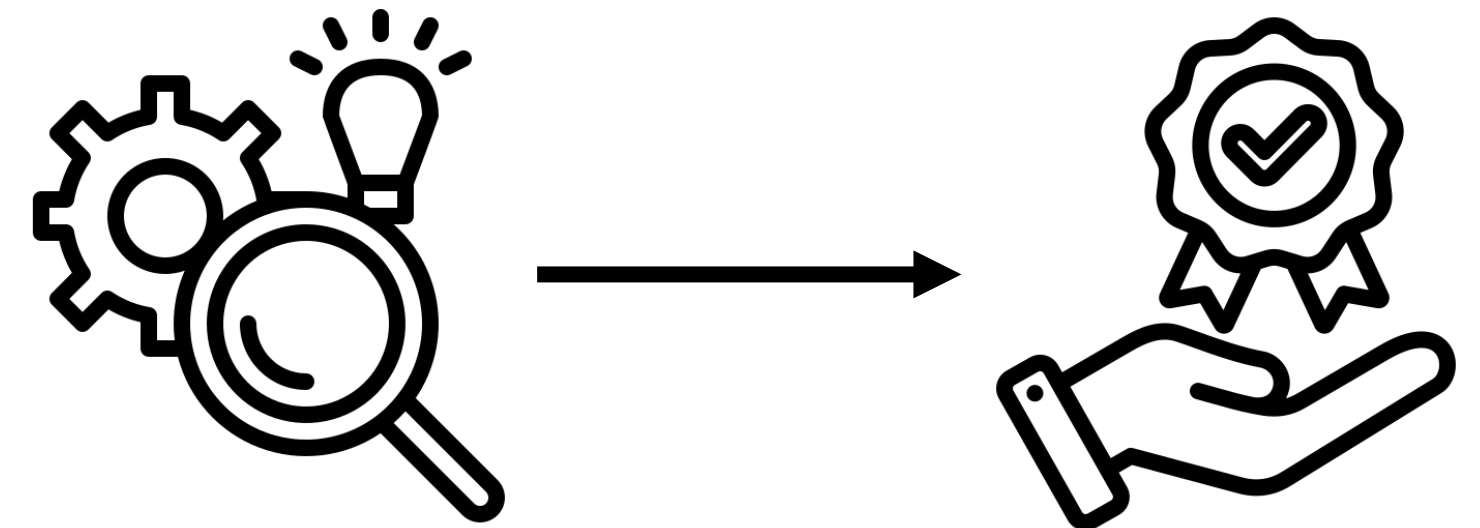


Research Project booklets

→ www.uva.nl/mfs > study programme > second year

 **Research Project Guide MFS UvA 2024-2025**

 **Research Project Guide MFS UvA 2023-2024**





Deepfake - Credit: Tenebrous / DepositPhotos - License: DepositPhotos

TECH SCIENCE DEEFAKE DEEFAKES UNIVERSITY OF AMSTERDAM FORENSIC
» MORE TAGS

FRIDAY, 23 MAY 2025 - 12:50

Dutch forensic experts unveil breakthrough heartbeat test to detect deepfakes

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Netherlands Forensic Institute
Ministry of Justice and Security

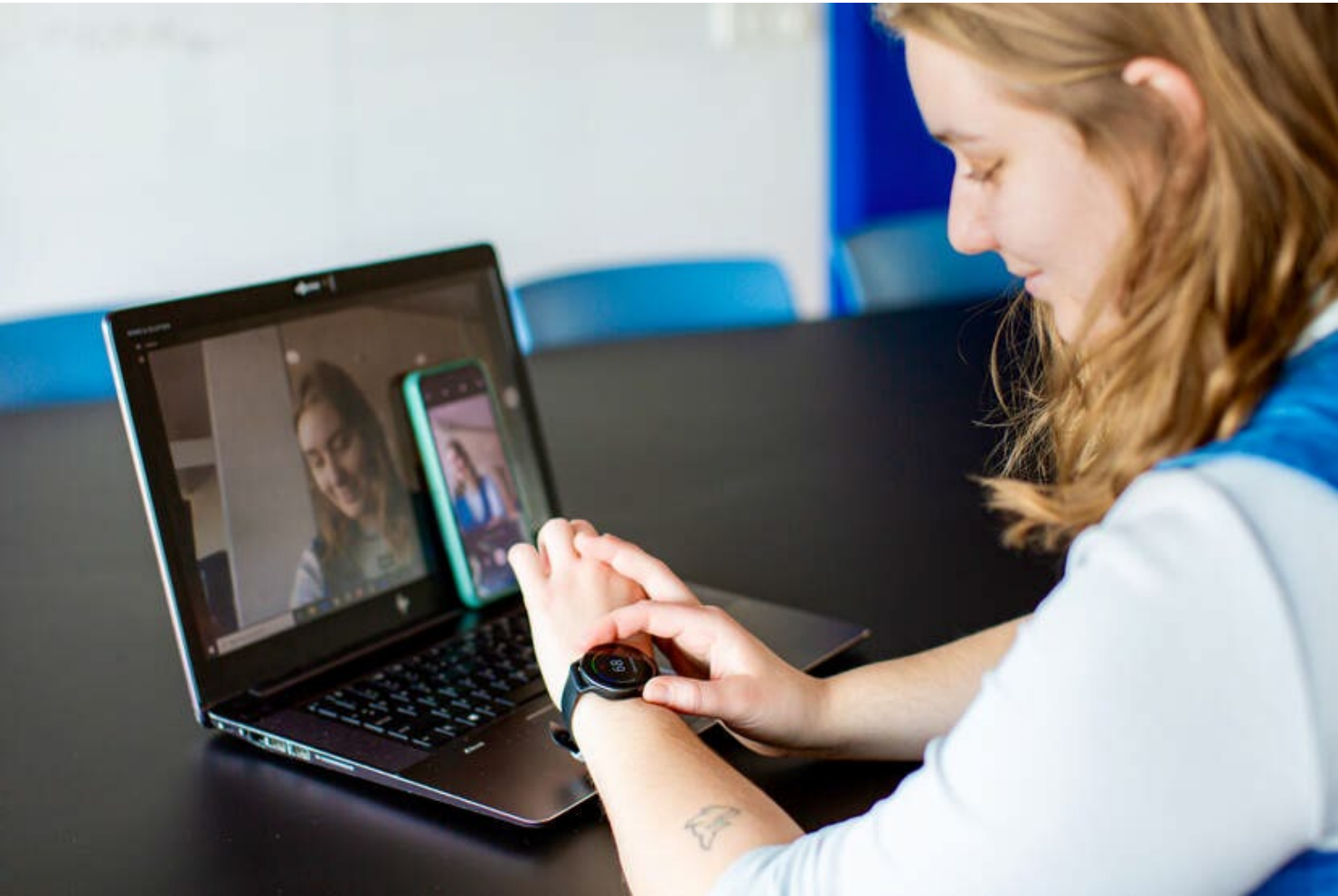


She/Her · 2de

Forensic Science MSc Graduate & Computer Science BSc Graduate



Universiteit van Amsterdam



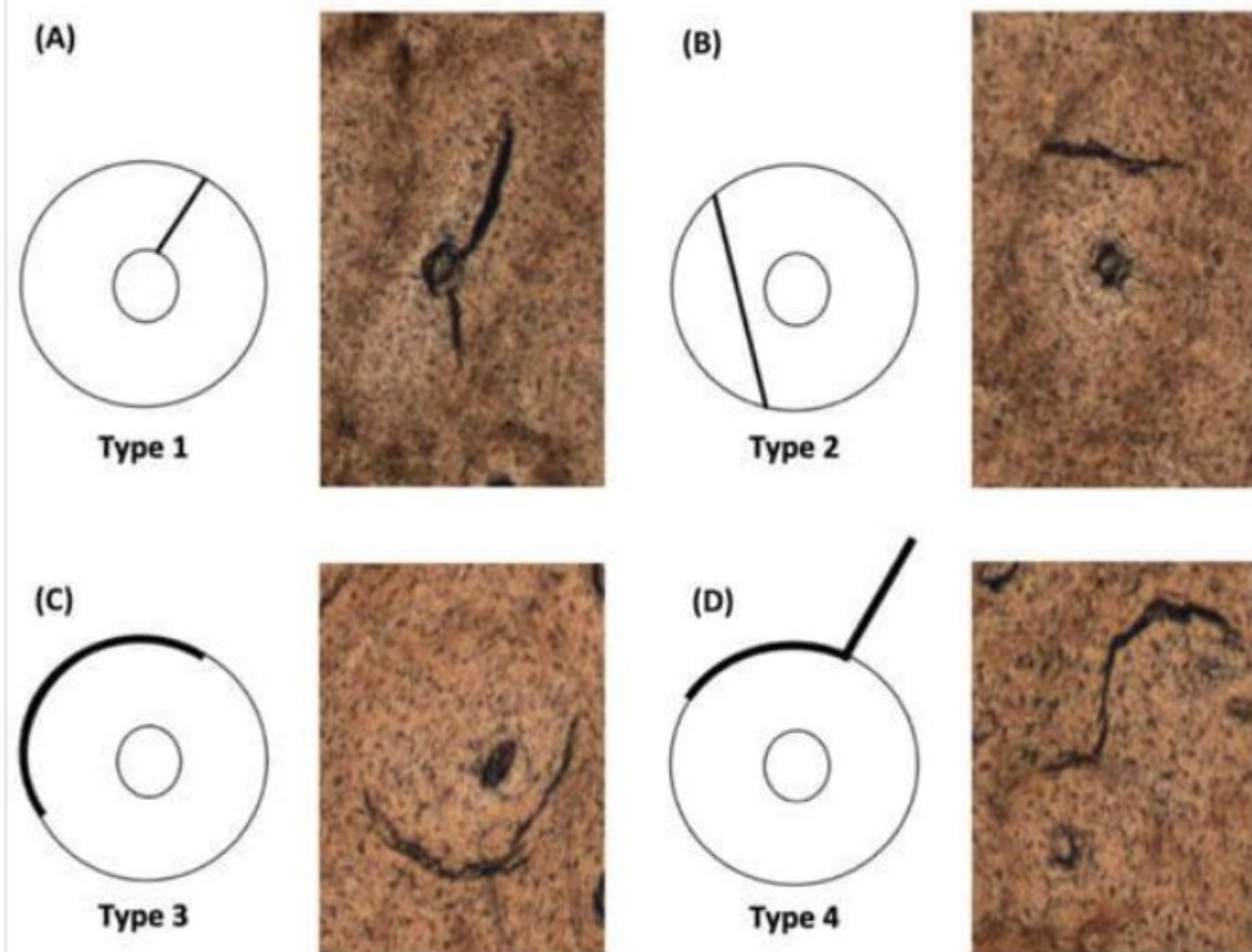
How do forensic experts detect fake videos?



Article

Osteonal Damage Patterns from Ballistic and Blunt Force Trauma in Human Long Bones

Keira Sexton ^{1,2} , Nathalie Schwab ^{2,3} , Ignasi Galtés ^{2,4,5,*} , Anna Casas ³, Nuria Armentano ³, Pedro Brillas ⁶, Xavier Garrido ⁷ and Xavier Jordana ^{3,8,*} 



Forensic Chemistry 45 (2025) 100680

Contents lists available at [ScienceDirect](https://www.sciencedirect.com/journal/forensic-chemistry)

Forensic Chemistry

journal homepage: www.sciencedirect.com/journal/forensic-chemistry



Discovery of selective markers for chlorine gas exposure in concrete

Mirjam de Bruin-Hoegée ^{a,*}, Bence Dallos ^b, Tomas van Groningen ^a, Jelle de Koning ^{a,b}, Latifa Lamriti ^a, Marcel J. van der Schans ^a, Arian C. van Asten ^{b,c}

^a TNO Defence, Safety and Security, Dep. CBRN Protection, Lange Kleiweg 137, 2288GJ Rijswijk, the Netherlands

^b van 't Hoff Institute for Molecular Sciences, Faculty of Science, University of Amsterdam, P.O. Box 94157, 1090GD Amsterdam, the Netherlands

^c CLHC, Amsterdam Center for Forensic Science and Medicine, University of Amsterdam, P.O. Box 94157, 1090GD Amsterdam, the Netherlands



TNO
innovation
for life



REVEALING THE ORIGIN OF CHEMICAL WEAPONS





Tracing Threats

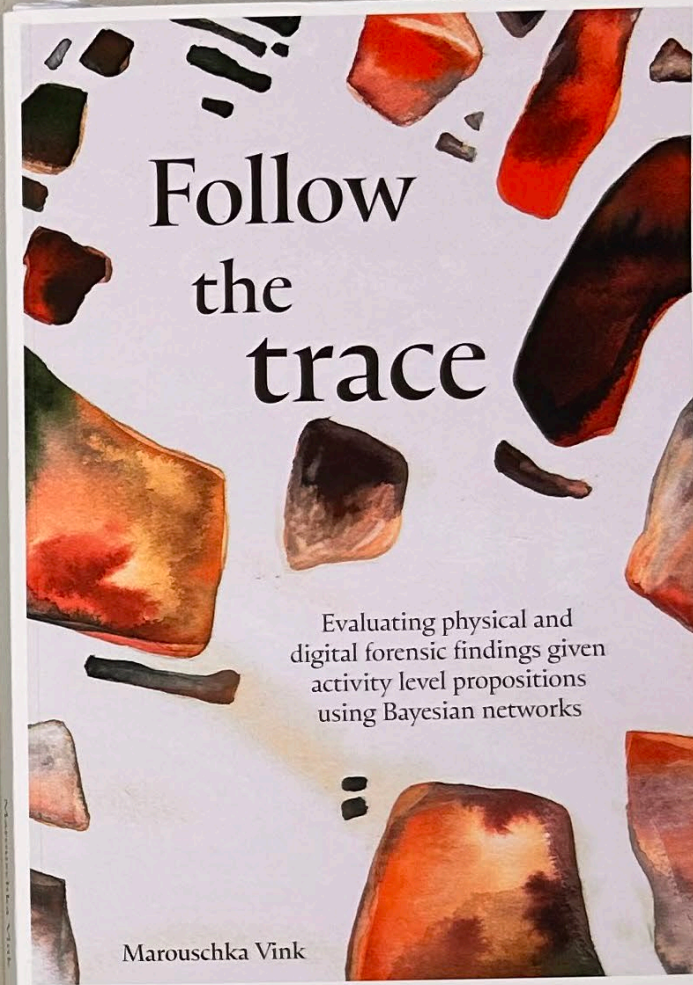
Towards source- and activity-level interpretation
in forensic explosives investigations



Irene van Damme

Follow the trace

Evaluating physical and
digital forensic findings given
activity level propositions
using Bayesian networks



Marouschka Vink

FORENSIC EXPLOSIVES INTELLIGENCE

Karlijn Bezemer



WHAT FINGERMARKS REVEAL ABOUT ACTIVITIES



Anouk de Ronde





Karlijn Bezemer
Explosievendeskundige NFI

Ik ben explosievendeskundige bij het
Nederlands Forensisch Instituut.

Events:

Frontiers of Forensic Science & Annual Symposium



UNIVERSITY OF AMSTERDAM
Institute for Interdisciplinary Studies



ICA
Innovation Center
for Artificial Intelligence

UNIVERSITY OF AMSTERDAM
Institute for Interdisciplinary Studies



LECTURE SERIES FRONTIERS OF FORENSIC SCIENCE

A.I.-assisted Forensic Investigations

Friday, September 27th, 2024
15:00 - 17:00

Amsterdam Science Park
Building 904
Room C0.05

Free admission

To register, click or scan

The lecture series is an initiative of the Co van Ledden Hulsebosch Center (CLHC) and the Master's Programme in Forensic Science at the Institute for Interdisciplinary Studies, UvA.

15:00 - 15:15
Zeno Geradts (UvA, NFI)
Welcome and Introduction to the Theme

15:15 - 15:45
Jan Peter van Zandwijk (NFI)
Conor McCarthy (UvA)
Data2activity: Inferring Physical Activities from Digital Traces

15:45 - 16:15
Anneleke Hulsbergen (NFI)
Ewout van Dijk (NFI)
Recognizing Fireworks After the Blast

16:15 - 16:30
Gonçalo Barreto Ferrelra Marcelino (UvA)
A.I. Tools for Money Laundering Investigation

16:30 - 16:45
Melke Kombrink (NFI, UvA)
Finding What's Hidden in Plain Sight

16:45 - 17:00
Marcel Worring (UvA)
Outlook and Concluding Remarks

17:00
Social Drink

LECTURE SERIES FRONTIERS OF FORENSIC SCIENCE

At the Frontiers of Forensic Advice

Friday, June 6th, 2025
15:00 - 17:00

Amsterdam Science Park
Building 904, Room C0.110

Free admission

To register, click or scan

The lecture series is an initiative of the Co van Ledden Hulsebosch Center (CLHC) and the Master's Programme in Forensic Science at the Institute for Interdisciplinary Studies, UvA.

15:00 - 15:30
Floor Dussel (Dutch Court)
Forensic advice at the Dutch criminal courts:
Bridging the gap between science and criminal law

15:30 - 16:00
Jan de Koeljer (NFI)
Optimizing forensic contributions through strategic collaboration in criminal justice

16:00 - 16:30
Yvette van Duin (NFI)
International forensic advice at the NFI

16:30 - 17:00
Peter Hotchkiss (OPCW)
Chemical forensics and the OPCW

17:00
Social Drink

Co van Ledden Hulsebosch Center

10th CLHC ANNUAL FORENSIC SYMPOSIUM

EVERY BODY TELLS A STORY

Forensic Human Taphonomy

Shari Forbes
Spinoza Professor Amsterdam UMC

09:00 Registration and coffee

10:00 **Maurice Aalders** and **Arian van Asten** (CLHC)
Welcome and introduction of the Spinoza Visiting Professor

10:15 **Shari Forbes** (University of Windsor, Canada)
The importance of human taphonomy facilities and how they assist criminal justice

11:00 Coffee break

11:30 **Roelof-Jan Oostra** (Amsterdam UMC)
ARISTA: Past, present and future

12:00 **Mike Groen** (OBI, NFI)
Forensic Archaeology, Anthropology and Taphonomy: Reconstructing Crime Scenes

12:30 Lunch + Poster Session + Exhibition + Events

14:30 **Lisette Kootker** (VU)
Isotope Analysis in Forensics:
A Game Changer in Human Provenancing

15:00 **Lisa Vangeel** and **Bas Van Haperen** (ICMP)
Next Generation Sequencing for Missing Persons Identification

15:30 **Rogier van der Hulst** (NFI)
Toxicological Investigations at Long Postmortem Intervals

16:00 Best CLHC & Student Poster Award

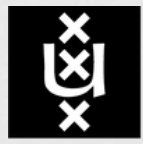
16:30 Social Drink

Friday October 24th, 2025
Amsterdam Science Park
CWI Conference Center

To register, click or scan

The lecture series is an initiative of the Co van Ledden Hulsebosch Center (CLHC) and the Master's Programme in Forensic Science at the Institute for Interdisciplinary Studies, UvA.





UNIVERSITY OF AMSTERDAM
Institute for Interdisciplinary Studies



Application & admission

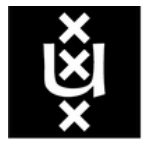


Application

- Procedure see: uva.nl/mfs
- Reference letter from an academic staff member
- Motivation letter
- Deadlines:
 - Dutch/EU: April 30th, 2026
 - Non-EU: January 31st, 2026

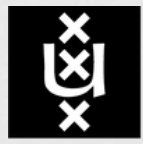
Admission

- By assessment committee
- Assessment interview



Take home messages

- Research not investigation
- Theoretical not practical (first year)
- Full-time master
- Selective
- International
- In-depth Interpretation of Evidence (first year)
- Disciplinary specialisation (second year)



UNIVERSITY OF AMSTERDAM
Institute for Interdisciplinary Studies

More information

<http://www.uva.nl/mfs>

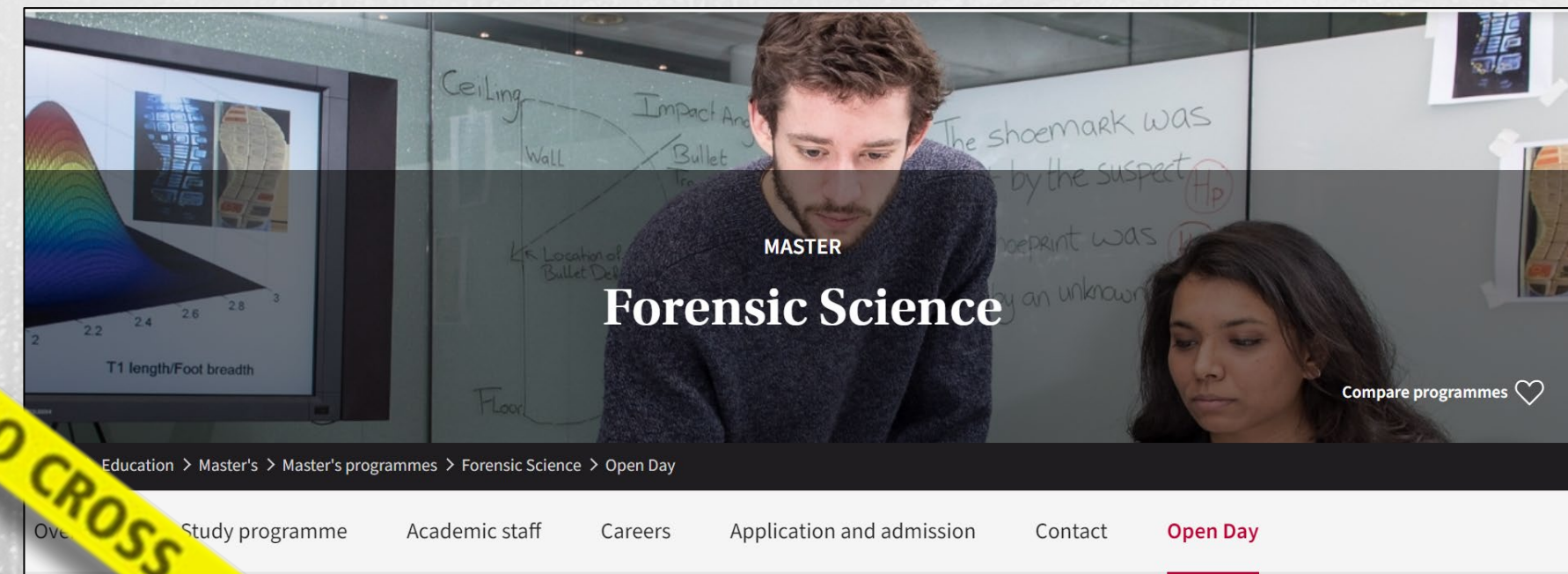
<http://www.clhc.nl>



August de Heij: studieadviseur-iis@uva.nl

Programme: fs-iis-science@uva.nl

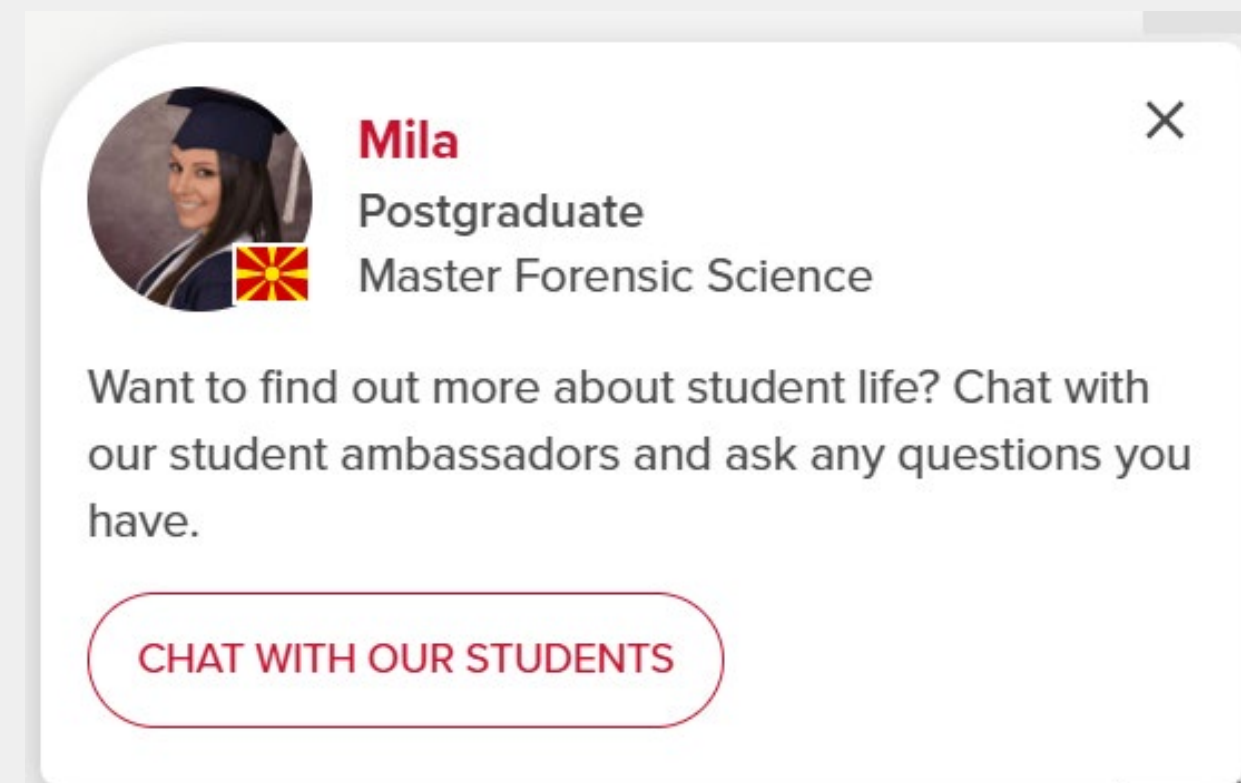
Mika Sprik: mika.sprik@student.uva.nl



Meet the Master

Want to know if Forensic Science suits you?
Accompany a Master's student in their daily
study routine and find out!

[Yes, sign me up! →](#)





Curriculum

Year 1	Semester I			Semester II		
	Block 1 (8 weeks)	Block 2 (8 weeks)	Block 3 (4 weeks)	Block 4 (8 weeks)	Block 5 (8 weeks)	Block 6 (4 weeks)
	Criminalistics Applied to Forensic Chemistry (6 ECTS)	Research and Innovation in Forensic Biophysics (6 ECTS)	Complex Crime Scenes (6 ECTS)	Forensic Statistics and DNA evidence (6 ECTS)	Chain of Evidence (6 ECTS)	Policy, Ethics and Media (6 ECTS)
Statistics for Forensic Science (5 ECTS)	Observer Based Techniques (6 ECTS)	Cybercrime, Digital Traces and Forensic Data Analysis (6 ECTS)		Criminal Law and Expert Evidence (6 ECTS)		
Professional Development (2 ECTS in 2 years)						
Year 2	STEM elective** (6 ECTS)	Special elective* Physical and Forensic Anthropology (6 ECTS) or STEM elective**	Research project (36 ECTS) Students need a total of 18 ECTS in Elective Courses: * Special elective courses can be up to 6 EC but are optional ** STEM elective courses adding up from 12 to 18 ECTS depending on whether the student decides to choose a special elective or not.			
	STEM elective** (6 ECTS)					
	Literature Thesis (5 ECTS)					
	Professional Development (2 ECTS in 2 years)					



Forensic Expert: DNA Analyst



Forensic Weapons expert



Forensic Expert: Data scientist
– Team High Tech Crime

State Criminal Police Office Berlin,
Forensic Science Institute

Forensic Scientist - Crime Scene Unit
at Forensic Science Institute, State Criminal Police Office Berlin



Forensic advisor



Consultant Forensic Technology



PhD student: “Using drones and remote sensing to locate clandestine graves.”



PhD student: “From identification to a chemical fingerprint for explosives in forensic research”

Career examples