

3 **Bridging the Law and Forensic Science Divide**

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7 **Introduction**

8 There cannot be many people with access to popular culture, who have not been entertained by
9 tales of doughty detectives using some scientific prowess to catch a criminal protagonist.
10 Indeed, such is the popularity of the (sometimes ‘true’) crime genre, that research into a so-
11 called ‘CSI Effect’ has tried to gauge the impact of this glut of forensic ‘entertainment’ on the
12 criminal process. Whether or not such an effect exists, what is clear is that there is a popular
13 expectation that even if Sherlock Holmes remains firmly fictional, real detectives work closely,
14 and to great effect, with forensic scientists in the pursuit of criminal justice. Given such
15 expectations, an understandable corollary might be that students entering university with a view
16 to pursuing a ‘criminal justice’ career, whether in law enforcement, or as a criminal lawyer or
17 forensic scientist, anticipate that their studies will prepare them for this close working
18 relationship. On both fronts then, there is, (largely justifiable), disappointment.

19 In this chapter we trace the root of this disappointment, considering the opportunities
20 for cross-disciplinary teaching and learning across law and forensic science in the academy.
21 Drawing upon domestic research, and a study of the Canadian educational landscape in this
22 space, we posit that despite continued calls externally for greater educational collaboration
23 between law and forensic science, UK academics face structural and cultural obstacles to

1 meaningful cooperation. Whilst there may be small pockets of good practice, these perhaps
2 exacerbate frustration that pedagogical innovations that would enhance our disciplines, and
3 address oft-repeated criticisms of legal professionals and forensic scientists in practice, remain
4 firmly on the shelf.

5

6 **Forensic Science and Law: The divide in practice**

7 Reams have been written about the paradigmatic divide between science and law. Whatever
8 the cogency of such arguments (which will not be entered into here), there are risks in accepting
9 too readily that ‘law’ and ‘science’ operate within domains so distinctive that those occupying
10 them cannot communicate. Yet the working lives of both criminal lawyers, and forensic
11 scientists, mean that they cannot effectively operate when there are misunderstandings and
12 misapprehensions on the part of either. They cannot avoid communicating with each other if
13 the criminal justice system is to function. Despite this, there has been a myriad official inquiries
14 and reports, domestic and international (some of which are considered later) over preceding
15 decades into what is ‘wrong’ with forensic science, and universally lament the lack of
16 cooperation and concordance between the policing, forensic science, and legal professions.
17 Miscarriages of justice involving forensic evidence have provided plentiful opportunities for
18 the legal and scientific communities to reflect upon failings and seek preventative medicine.
19 Most often, lawyers have found convenient ‘fall guys’ in experts, but forensic scientists cannot
20 shoulder all the blame, and questions surely arise as to why legal professionals did not identify
21 failings in scientific evidence prior to wrongful convictions.

22 Proposals to ‘stop the rot’ have resulted in laundry lists of recommendations, most of
23 which include references to the need for mutual understanding and dialogue between these
24 professionals to be facilitated and encouraged from the very outset of their careers: as a student.
25 Given these repeated exhortations (some of which are considered later) that the education

1 system work to ensure that students are equipped to build effective working relationships in
2 the criminal justice system, one might expect that the educators of these students themselves
3 work closely to deliver a multi-disciplinary education and develop collaborative skills. Again,
4 the reality is going to be a disappointment to any inquiring outsider.

5

6 **Forensic science and law: The academic divide**

7 Forensic science is the application of science to legal questions. Without a legal use then,
8 science fails to justify the ‘forensic’ appellation. As such, one might expect that you could not
9 become a forensic scientist —without some educational background in law — to understand
10 the questions being asked of you. One might also expect criminal lawyers to have a basic
11 understanding of forensic science, to be able to pose those questions. Yet the disciplines of law
12 and science remain segregated within both the academy and professions, with a rich seam of
13 literature examining the reasons for, and consequences of, their isolation. Physical and
14 geographic divides within academia mean that we remain distanced, normally within separate
15 buildings, often separate campuses. Scientists and lawyers will rarely meet on a university
16 campus (barely ever at conferences), or find themselves researching co-operatively; they will
17 not be catered for in the same libraries or literature sources, or by the same research funding
18 bodies. It requires deliberate and concerted effort therefore, for university-based scientists and
19 lawyers to meet. Can academics then be blamed when we do not inculcate our students with
20 the inherently inter-disciplinary nature of their chosen subjects — law and forensic science,
21 when we are so isolated?

22 Of course, this isolation starts early, in high school, often with the labelling and
23 categorization of students into discipline ‘types’. This specialisation then in ‘science’ or
24 ‘humanities’ takes place (in England and Wales, Scotland is slightly better) around aged
25 fourteen. It is a brave school student who attempts to buck the system and study A-levels across

1 different science/humanity disciplines (in fact, school timetabling systems often simply do not
2 permit such studies). We therefore do not expect our incoming students to have pre-University
3 education that crosses disciplines. In the US, where law is a post-graduate degree, the ten most
4 popular majors studied prior to applying to law school, are:

- 5 1. Political Science
- 6 2. Other - 'Other' simply includes all the other possible degree majors, including all
7 permutations of science/ computing/ mathematics/ technology/ engineering etc.
- 8 3. Psychology
- 9 4. Criminal Justice
- 10 5. English
- 11 6. History
- 12 7. Economics
- 13 8. Philosophy
- 14 9. Arts and Humanities
- 15 10. Sociology

16 At undergraduate level, forensic science education in the UK has undergone a number of
17 developments over the preceding decades, with the pace of change and challenges to both
18 education and practice increasing exponentially over this period. A number of national and
19 international enquiries into the forensic sciences, driven specifically (although not exclusively)
20 by high profile miscarriages of justice, have produced a plethora of recommendations requiring
21 action by the forensic-legal-policing triad. In 2004, the US National Institute of Justice (NIJ)
22 report on *Education and Training in Forensic Science: A guide for forensic science*
23 *laboratories, educational institutions and students* set out ideal educational curricula,
24 formulated by an impressive technical working group comprising of experts from academia,
25 laboratories, forensic science organisations and the legal profession, across the United States

1 and Canada. The working group recommended a ‘solid educational background’ in natural
2 science with extensive laboratory course-work. The document however did not recommend
3 greater liaison between law and science faculties, contrasting with reports since, that have
4 asserted that this be a focus of pedagogical renewal and improvements. Indeed, the NIJ
5 document went no further than specifying that the strengths of a model undergraduate forensic
6 science degree include the ‘acculturation’ of students into the forensic science and justice
7 communities. It went no further in explaining what such acculturation would consist of, or how
8 it could be achieved.

9 The highly influential US National Research Council Report (NRC 2009, p.238) heralded
10 a call for greater collaboration between the ‘law’ and ‘science’, particularly in HEIs;

11 ...lawyers and judges often have insufficient training and background in scientific
12 methodology...Better connections must be established and promoted between
13 experts in the forensic science disciplines and law schools, legal scholars, and
14 practitioners...Law schools should enhance this connection by offering courses in
15 the forensic science disciplines, by offering credit for forensic science courses
16 taken in other colleges, and by developing joint degree programs.

17 This NRC report echoed calls made earlier in the UK, including in the House of Commons
18 Science & Technology Committee report *Forensic Science on Trial* (2005), which underlined
19 the lack of training in forensic science for lawyers: “it is of great concern that there is currently
20 no mandatory training for lawyers in this area.” Both reports recognised that while
21 improvements were needed in educational provision for forensic scientists, there also needs to
22 be a broadening of forensic science education to incorporate those who also have to understand
23 forensic evidence.

1 The most recent report by the UK House of Lords Science and Technology Committee
2 *Forensic science and the criminal justice system: A blueprint for change* (2019), has very little
3 to say about forensic science education, and focuses only upon the scientific understanding of
4 lawyers, explaining that one ‘difficulty’ for legal professionals in understanding scientific
5 evidence, is that forensic science is ‘constantly developing’, and that:

6 Our evidence showed a mixed level of understanding of scientific issues by lawyers
7 and judges...Dr Gillian Tully [the Forensic Regulator] said that “the understanding
8 of forensic science amongst lawyers and judges appears, from transcripts and
9 judgments, to be variable. Judgments have on occasion demonstrated a lack of
10 understanding of the process of scientific reasoning” (para. 125).

11 The report highlighted the problem of lawyers not having an educational background in
12 statistics, and that “An incorrect understanding of probability by legal professionals can lead
13 to evidence being given more weight than it deserves” (para. 128). The House of Lords
14 ‘blueprint’ did refer to the production (in 2017) of two ‘primers’, by the Royal Society in
15 conjunction with the judiciary in England and Wales and Scotland, written by leading scientists
16 and judges (para. 131). These were intended to be the first in a series of easily understood and
17 accurate documents assisting judges in handling forensic scientific evidence. The two primers
18 — on forensic DNA analysis and forensic gait analysis — have apparently been well received,
19 albeit there remain questions over their use, and controversy among the scientific community
20 over the scientific status of forensic gait analysis. Aside from such issues, the House of Lords
21 lamented the fact that “aside from criminal practice directions and primers, there are few other
22 resources for judges and lawyers, and no formalised training in forensic science” (para. 133).
23 Omitting any comment on pre-qualification education, they went on to recommend that:

1 [A]ll advocates practicing in the criminal courts should, as part of their continuing
2 professional development, be required to undertake training in the use of scientific
3 evidence in court and basic scientific principles such as probability, scientific
4 inference and research methods (para.136).

5 The US National Research Council had previously firmly placed responsibility for making
6 improvements upon prequalification legal educators: “It might be too late to effectively train
7 most lawyers and judges once they have entered their professional fields. For the long term,
8 the best way to get lawyers and judges up- to-speed is for law schools to offer better courses in
9 forensic science in their curricula” (NRC 2009, pp.8-15). Yet they were silent on how forensic
10 science graduates might go about learning the law and legal processes impacting upon their
11 discipline. Indeed, how to ensure that legal professionals and forensic scientists understand the
12 basic principles, vernacular, and nomenclature of both science and law, as well as the working
13 practices and customs of each group of practitioners remains resolutely unarticulated.

14 15 **Forensic science and law: The challenge to educators**

16 Despite these repeated exhortations to educators to cross the science-law divide, little reaction
17 has been readily apparent, indeed, ‘cross-fertilisation’ between law and forensic science degree
18 programs in the UK remains unusual (and limited where it can be found). So we —those who
19 educate forensic science and law students— are left with a daunting task; how to go about such
20 remodelling of our educational structures?

21 22 **The Drawbridges Project**

23 The authors received funding from the University of Leeds in 2009 to commence a project to
24 facilitate the building of vital connections in the academy, to ensure that legal and forensic
25 science undergraduate education was ‘fit for purpose’. The *Lowering the Drawbridges: Legal*

1 *and forensic science education in the 21st century* project, hoped that by commencing cross-
2 disciplinary study during the pre-qualification stage, there could be potential for ending the
3 ‘dialogue of the deaf’ at the professional stage of their careers (and if they do not proceed into
4 a legal/forensic science career, their greater knowledge base may accrue other ‘transferable
5 skills’ or benefits). In early 2009, two surveys were emailed to law and forensic science
6 lecturers to assess the teaching of law to forensic science students, and forensic science to law
7 students. While most forensic science lecturers attested to there being ‘law’ in their degree
8 programmes, what this essentially transpired to mean was that they made their forensic science
9 students walk to the law school and study one of their ‘criminal law/ criminal process’ modules
10 (which some admitted their students struggled to pass). Law lecturers almost all conceded that
11 there were no real opportunities for students to study any ‘forensic science’ modules as part of
12 their degree, and that — at best — they might mention scientific evidence in a couple of
13 evidence lectures (when covering expert evidence —assuming the student elected to study
14 evidence, which is —lamentably not a pre-qualifying compulsory subject in England and
15 Wales).

16 In May 2009 a workshop was attended by over 40 academics and practitioners with
17 scientific and legal backgrounds. The intensive day raised issues related to teaching forensic
18 science and law and explored avenues for improving communication and collaboration.
19 Discussion at the workshop quickly revealed that the specific matters under consideration
20 comprised only a sub-section of a host of concerns that emanate from the highly complex array
21 of aims and interests (and stakeholders) of these two disciplines, only some of which were
22 complementary. It became clear that institutional barriers created in universities also presented
23 as many, if not more, practical impediments to working across disciplines. It was also readily
24 apparent that glibly stating that academics need to find the time to design more pedagogically
25 robust material that can cross disciplinary boundaries was obtuse, if not impertinent, given the

1 levels of dedication and effort already demonstrated by many forensic science and law
2 academics across the UK.

3 What could be easily concluded without much contestation was that achieving anything
4 like true cross-disciplinary educational aims required a far more fundamental rethinking,
5 necessitating a new common language in order that those academics working in diverse areas
6 of academic pursuit could understand one another. It would also definitely require some
7 dismantling of administrative roadblocks (“hitting a university brick wall” was an oft-heard
8 refrain) within HEIs, even if physical adjustments to teaching and learning facilities was
9 unrealistic. This is an essential prerequisite so ‘systems’ can communicate to facilitate student
10 and/or staff movement across schools/faculties etc., and ultimately, students can be taught to
11 study, converse, and be understood beyond law/science borders. Finding the route(s) to cross-
12 disciplinary experiences for students is thus highly complex and multi-faceted, although we
13 still firmly believe this should not preclude discussion that could assist attempts at navigating
14 a path.

15

16 **The Canadian experience**

17 Casting an eye internationally to seek solutions to problems can often be beneficial, particularly
18 when issues affect many nations similarly, so following the 2009 workshop and report (2011)
19 the authors ventured further afield for inspiration. It became apparent that the Canadians were
20 significantly ‘ahead of the game’ developing their forensic-legal-policing education, and
21 pivotal relationships between practitioners and Canadian HEIs were changing the educational
22 landscape. This anecdotal evidence required further interrogation so we sought the advice of a
23 number of individuals from organisations within their forensic-legal-policing triad. These
24 individuals provided us with a range of perspectives and were knowledgeable about their own,

1 as well as partner communities. They were all able to offer a micro- as well as macro-level
2 account of developments and their rationales, locally and nationally, including the socio-
3 political climate that engendered the developments. These individuals included: judges
4 (Justices); defence and prosecution lawyers; forensic practitioners (some of whom are also
5 warranted police officers); and forensic science and legal academics.

6 Whilst there are some differences in the legal establishment and the criminal process in
7 Canada (in particular, it is a federal country, although criminal law and procedure is exclusively
8 a federal matter and not delegated to Provinces and Territories) it overlaps with the English
9 and Welsh criminal justice system in most important respects. The Canadian system has had
10 its own issues in the delivery of justice as supported by forensic science, with a number of
11 high-profile inquiries including into the Sophonow case (1982), and the Goudge enquiry into
12 Pediatric Forensic Pathology in Ontario (2008). These, and other influential reports placed
13 interdisciplinary communication between law/science at the top of the criminal justice reform
14 agenda.

15 In 2002, the Federal, Provincial, and Territorial Heads of Prosecutions (HOP) Committee
16 in Canada established a Working Group on the Prevention of Miscarriages of Justice. Their
17 mandate was to develop best practice to assist prosecutors and police in better understanding
18 the causes of wrongful convictions, and to recommend proactive policies, protocols and
19 educational processes to guard against future miscarriages of justice. In providing clear,
20 comprehensive and practical recommendations for improvements to the criminal justice
21 system, the HOP Committee Report focused on the education of justice system participants. It
22 suggested that such education must be multi-faceted and directed at all participants in the
23 justice system to be effective, because the errors that lead to wrongful convictions are multi-
24 layered and often the result of a combination of events.

1 An objective of our research was to outline examples of good practice, including lessons
2 on how the Canadians proceeded and the possible future risks to the systems in place. This
3 could then be imported as a potential template for ‘next steps’ and provide some renewed
4 impetus to work toward solutions to the issues facing the law and forensic science interface in
5 the UK. One clear initial requirement for progress is the necessary blurring of the dividing line
6 between ‘academics’ and ‘practitioners’, a demarcation that is no longer inflexible in Canada.
7 The research thus sought to address the multi-layered nature of forensic science-legal education
8 and made no apology for not concentrating upon just ‘academia’ or just ‘practitioners’. Indeed,
9 attempts to encompass the full complexity of the educational landscape, requires a broad-
10 brushed interpretation of ‘education’, often conflated with ‘training’ (is there a strict or
11 discernible boundary between education and training? Or is this yet another barrier that needs
12 dismantling?). This is necessary to demonstrate the ‘good will’ and enthusiasm required by
13 those working within HEIs and the criminal justice system to cross professional as well as
14 disciplinary boundaries.

15 With forensic science and forensic medicine both situated in funding-restricted
16 government ministries, neither had been able to undertake scientific research to an adequate
17 degree. Equally, education was limited to what other government-based ministries or officials
18 requested. As Canadian academic institutions did not adequately provide a platform for such
19 research, a dedicated forensic institute was required to undertake these R & D and professional
20 (CPD) educational tasks: a dedicated forensic institute able to provide on-going education for
21 justice system professionals. The response was the construction of a ‘Forensic Services and
22 Coroners Complex’ in Toronto, which, while impressive in size and scale of operations, has
23 a clear focus on educational programmes, and research collaborations with academic
24 institutions.

1 Whilst the Forensic Services and Coroners Complex has considerably strengthened the
2 provision of forensic science and medicine in Ontario, there already existed at least two
3 establishments, exemplary for their work in blurring the dividing lines between law and
4 science, academia and practice. We were fortunate to be able to visit both the Centre for
5 Forensic Science and Medicine (CFSM) at the University of Toronto, and Osgoode Hall Law
6 School, at York University. The CFSM, opened in September 2008, was created with
7 interdisciplinarity at its core. The Centre holds regular seminar series, special public lectures,
8 as well as conferences and workshops, to advance teaching and research in the forensic
9 disciplines. The CFSM has forged a forensic research network, while unifying the forensic
10 community, creates an environment that fosters interdisciplinary research. The Centre has
11 developed forensic educational programs across the entire training spectrum and through inter-
12 professional education.

13 A concurrent effort is being undertaken at Osgoode Law School, to educate students
14 across the law/science divide, providing experiential learning opportunities and creating
15 working collaborative partnerships with justice professionals. The School has both an
16 Innocence Project and a ‘Criminal Law Intensive’ clinic. Both of these involve extensive work
17 with the local and national forensic community, and advanced education for law students in
18 forensic science. The Criminal Law clinic includes visiting a live autopsy, as well as spending
19 time in forensic laboratories. Both the CFSM and Osgoode Law School provided much food
20 for thought on what can be achieved, when the legal and forensic communities are committed
21 to working together within educational settings. This combined with the progress that has been
22 made within the justice system since inquiries into miscarriages of justice, (particularly with
23 respect to the on-going education of legal representatives and judges) and the similarity of their
24 legal system to our own, makes Canada an obvious choice when looking internationally for
25 routes to effecting real change in education in the UK.

1

2 **Lessons still to learn?**

3 Of course, Canada is not alone in trying to address the disciplinary divide, and it has become
4 increasingly common for forensic science programmes both sides of the Atlantic, as well as in
5 the southern hemisphere, to include—at the very least—some experience for forensic science
6 students in presenting evidence in a courtroom. As was reported upon in our ‘Drawbridges’
7 project a decade ago, many legal academics assist with, or organise ‘mock trials’ for forensic
8 science students, sometimes as the culmination of a practically-focused module, and often with
9 the involvement of law students, to great mutual benefit:

10 Over the years, we have found the collaboration between the forensic science
11 program and the law school to be beneficial to both programs. Although a
12 challenging course, the Scientific Evidence course taken by our students is
13 applauded as one that is effective in preparing our graduates for the common
14 experience of testifying in court. In addition, the participation by law students in
15 the moot court experience allows the law school to offer additional opportunities
16 to their students to hone their skills in critical thinking and oration in the
17 preparation and presentation of their arguments in front of a sitting judge (Allen &
18 Wagner, 2007 p.239).

19 The ongoing frustration perhaps then lies with the fact that this partnering of law/science
20 academics (and their students) to deliver impactful teaching, has been undertaken (and
21 extolled) for almost as long as forensic science undergraduate programmes have existed.
22 Indeed, there would be few forensic science programmes that could be accredited, or have any
23 external approval, without a ‘mock trial’ form of assessment featuring at some point, proving
24 too that law and forensic science academics can be made to meet and collaborate, albeit to this

1 limited degree. Yet, the wrongful convictions, and critical reports have continued unabated.
2 Why have forensic educators not innovated further, building upon these apparently strong
3 foundations?

4 And what of the law students? If law students are not studying any science beyond a
5 high-school level and can then avoid any further science at pre- or post-qualification stages of
6 their education, when are lawyers learning how to handle ‘evidence’ and interpret
7 information—the mainstay of their occupation? If becoming a criminal law practitioner, or
8 indeed almost any variety of lawyer, they will often be required to assess scientific evidence,
9 yet have no educated basis upon which to do this. Indeed, aside from the obvious examples of
10 miscarriages of justice, research has demonstrated the need for scientific understanding to be
11 more widespread among the legal profession: “To do justice in a technological world, judges
12 —and lawyers educating them about their cases— must learn to grapple with the scientific
13 method” (Beecher-Monas, 1998 p.75). This should also include a basic understanding of
14 statistics, which are barely mentioned, if at all, on a traditional law degree. Most recent
15 inquiries would suggest that very little has changed since Gabel (2010 p.257) identified that
16 “mathematics and science are a black hole in legal education”. Gatowski et al (2001), surveying
17 US State judges, found a lack of scientific literacy, demonstrating the need for more science-
18 based judicial education. The authors argue that:

19 What judges need to know is not how to design the best scientific study, but how
20 to evaluate imperfect ones. Judges do not need to be trained to become scientists;
21 they need to be trained to be critical consumers of the science that comes before
22 them. This is an important distinction...Determining just what constitutes a
23 sufficient level of scientific understanding for the judiciary is a question for future
24 study and policy development. Those involved in legal education at every level

1 should make efforts to raise the scientific literacy of all of those involved in the
2 legal system (Gatowski, 2001 p.455).

3 Much resistance to the blurring of the law/science divide focuses upon this theme: not wishing
4 to turn lawyers into scientists and vice versa. This is not a rational sticking-point and lawyers
5 and scientists can, and must, achieve a sufficient point of overlap in order to operate effectively
6 and cooperatively within the criminal process. Faigman asked in 2000 (p197): “how are
7 lawyers to learn enough science to supervise the scientists effectively?” arguing that non-
8 scientists should be sufficiently empowered to intelligently integrate scientific knowledge into
9 decision making without being required to become a fully-fledged scientist in the process:
10 “they must merely be good consumers of science” (Faigman, 2000:199).

11 In light of these issues, further to our efforts to assess the extent of cross-disciplinary
12 undergraduate education in the UK and Canada, we also worked together with others to
13 produce an open-source set of materials that could bring forensic science into the law degree
14 via an elective module: ‘Forensic Process and the Law’ (the ‘traditional’ evidence module was
15 unyielding to change, necessitating a bespoke module). These materials: a combination of
16 staged crime-scene photographs (of which several sets pertaining to different scenarios
17 amounted to nearly 1000 images), with accompanying documents including evidence
18 schedules, witness statements etc. — the paraphernalia of a criminal investigation and
19 subsequent criminal case, were packaged so that educators could use them to create a
20 simulacrum of a criminal case for law students to ‘work’. During the weekly progress through
21 the investigation and prosecution, the law students had to identify the different roles/ agencies
22 involved in a complex criminal investigation and how these intersect. Using both mock
23 statements from police and witnesses, alongside the photographic images of the scene, students
24 were able to gain an appreciation of the role of a forensic scientist, and ultimately, how their
25 role sat within the policing and legal processes. Ultimately they would come to understand how

1 scientific evidence is generated, and presented within an investigation, and subsumed into a
2 prosecution. The goal was for the law students to gain an appreciation of how decisions are
3 made during investigations that then impact upon evidence at trial, and how a dialogue with
4 scientists always improved investigative and prosecutorial outcomes —a lesson they
5 hopefully take into practice with them.

6 Anecdotally, there are other ‘evidence’ scholars who use real or simulated cases to bring
7 evidence law ‘to life’ for their students. Yet these individuals seem to prefer to remain in the
8 shadows, and such pedagogical methods are far from prevalent in the legal academy (albeit
9 ‘simulated’ and experiential teaching methods are growing in popularity and gaining traction
10 in the UK, having always been more widespread in the US). Are (the majority of) legal
11 academics still defying the calls for changes to law undergraduate teaching to facilitate the
12 critical skills essential for lawyers to assess evidence? This is not just an issue for criminal law
13 students, nor even those who might expect to handle ‘scientific’ evidence fairly regularly, but
14 how to weigh facts against one another and assess evidence: the bread and butter of their
15 professional lives.

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19 **Conclusions**

20 Assisting with legal disputes is the *raison d'être* of forensic science, and as such, one would
21 expect that the disciplines of law and forensic science be entwined. Yet we educate students of
22 these disciplines either as if never the twain shall meet, (or sometimes simply launching them
23 in the deep end of the other discipline —sitting science students in the back of a law lecture
24 and expect them to work out how to swim). Working closely with forensic and legal academics,

1 it is clear that despite small and isolated pockets of collaboration, real pedagogical innovation
2 combining forensic and legal academic communities is still rare despite repeated exhortations
3 to come together in the academy. Not only are we still a long way from any meaningful
4 dialogue, in many instances we still seem content in our disciplinary silos, which are then —
5 unsurprisingly — replicated in professional arenas. While the capstone 2009 NRC Report
6 reserved its harshest criticisms for the forensic science community, it also admonished lawyers
7 and judges, who were portrayed as having insufficient training and background in scientific
8 methodology and failing to fully comprehend scientific evidence and assess its reliability. What
9 is clearly evident in this report and others, is that amid all the discussion on the pressing need
10 to improve communication and collaboration, there is still very muted, or superficial discussion
11 over actual measures to augment the education of forensic science or law students, or the focus
12 is on post-graduation training/continuing professional development.

13 Yet there remain powerful drivers that should motivate the introduction of science (and
14 statistical method) into law degrees, and the enhancement of legal education for forensic
15 students. Research into the causes of wrongful convictions clearly demonstrates that if legal
16 professionals are unable to competently assess and handle scientific evidence, the pursuit of
17 justice can be seriously hampered, potentially leading to factual errors, as well as the
18 misrepresentation and/or misinterpretation of evidence. The awakening of the forensic industry
19 to the issues of bias are an example of threats to appropriate criminal justice outcomes. Issues
20 such as bias need to be addressed at the point of education delivery, not the point of delivery
21 of justice – for then it is all but too late. Within the UK forensic industry over the past few
22 years there has been a wider understanding and an acceptance to tackle the issue of bias
23 (Kukucka et al, 2017) and also to better inform those key stakeholders in the legal fraternity
24 the true value of the forensic evidence being presented. But much remains to be done, which
25 will require collaboration.

1 Our pedagogy impacts upon our students’ futures and what sort of professionals they go
2 on to be. While as forensic scientists, our mistakes may not end up in the morgue, our failings
3 can have significant consequences: “the work we do and the conclusions we reach — either in
4 forensic reports or testimony — have lasting effects on people’s lives, so we must pursue every
5 effort to understand and identify our weaknesses” (Laporte, 2018). We aim as educators to
6 equip our students with the tools to become the best forensic scientists and the best legal
7 professionals. If we were leaving big gaps in their knowledge with glaring holes in our
8 curricula, we would swiftly amend the curriculum (indeed, for our degree accreditation we
9 would be quickly brought up by our respective external examiners and regulators if we were
10 failing to cover essential knowledge in our programmes). And yet, are we still failing to
11 demonstrate to our students the truly interdisciplinary world in which they will have to work
12 in the future?

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