Bridging the Law and Forensic Science Divide

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Introduction

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

In this chapter we trace the root of this disappointment, considering the opportunities for cross-disciplinary teaching and learning across law and forensic science in the academy. Drawing upon domestic research, and a study of the Canadian educational landscape in this space, we posit that despite continued calls externally for greater educational collaboration between law and forensic science, UK academics face structural and cultural obstacles to
meaningful cooperation. Whilst there may be small pockets of good practice, these perhaps
exacerbate frustration that pedagogical innovations that would enhance our disciplines, and
address oft-repeated criticisms of legal professionals and forensic scientists in practice, remain
firmly on the shelf.

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

Proposals to ‘stop the rot’ have resulted in laundry lists of recommendations, most of
which include references to the need for mutual understanding and dialogue between these
professionals to be facilitated and encouraged from the very outset of their careers: as a student.
Given these repeated exhortations (some of which are considered later) that the education
system work to ensure that students are equipped to build effective working relationships in
the criminal justice system, one might expect that the educators of these students themselves
work closely to deliver a multi-disciplinary education and develop collaborative skills. Again,
the reality is going to be a disappointment to any inquiring outsider.

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

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

Of course, this isolation starts early, in high school, often with the labelling and
categorization of students into discipline ‘types’. This specialisation then in ‘science’ or
‘humanities’ takes place (in England and Wales, Scotland is slightly better) around aged
fourteen. It is a brave school student who attempts to buck the system and study A-levels across
different science/humanity disciplines (in fact, school timetabling systems often simply do not permit such studies). We therefore do not expect our incoming students to have pre-University education that crosses disciplines. In the US, where law is a post-graduate degree, the ten most popular majors studied prior to applying to law school, are:

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

At undergraduate level, forensic science education in the UK has undergone a number of developments over the preceding decades, with the pace of change and challenges to both education and practice increasing exponentially over this period. A number of national and international enquiries into the forensic sciences, driven specifically (although not exclusively) by high profile miscarriages of justice, have produced a plethora of recommendations requiring action by the forensic-legal-policing triad. In 2004, the US National Institute of Justice (NIJ) report on *Education and Training in Forensic Science: A guide for forensic science laboratories, educational institutions and students* set out ideal educational curricula, formulated by an impressive technical working group comprising of experts from academia, laboratories, forensic science organisations and the legal profession, across the United States.
and Canada. The working group recommended a ‘solid educational background’ in natural science with extensive laboratory course-work. The document however did not recommend greater liaison between law and science faculties, contrasting with reports since, that have asserted that this be a focus of pedagogical renewal and improvements. Indeed, the NIJ document went no further than specifying that the strengths of a model undergraduate forensic science degree include the ‘acculturation’ of students into the forensic science and justice communities. It went no further in explaining what such acculturation would consist of, or how it could be achieved.

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

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

This NRC report echoed calls made earlier in the UK, including in the House of Commons Science & Technology Committee report Forensic Science on Trial (2005), which underlined the lack of training in forensic science for lawyers: “it is of great concern that there is currently no mandatory training for lawyers in this area.” Both reports recognised that while improvements were needed in educational provision for forensic scientists, there also needs to be a broadening of forensic science education to incorporate those who also have to understand forensic evidence.
The most recent report by the UK House of Lords Science and Technology Committee
*Forensic science and the criminal justice system: A blueprint for change* (2019), has very little
to say about forensic science education, and focuses only upon the scientific understanding of
lawyers, explaining that one ‘difficulty’ for legal professionals in understanding scientific
evidence, is that forensic science is ‘constantly developing’, and that:

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

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

Omitting any comment on pre-qualification education, they went on to recommend that:
[A]ll advocates practicing in the criminal courts should, as part of their continuing professional development, be required to undertake training in the use of scientific evidence in court and basic scientific principles such as probability, scientific inference and research methods (para.136).

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

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

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

**The Drawbridges Project**

The authors received funding from the University of Leeds in 2009 to commence a project to facilitate the building of vital connections in the academy, to ensure that legal and forensic science undergraduate education was ‘fit for purpose’. The *Lowering the Drawbridges: Legal*
and forensic science education in the 21st century project, hoped that by commencing cross-
disciplinary study during the pre-qualification stage, there could be potential for ending the
‘dialogue of the deaf’ at the professional stage of their careers (and if they do not proceed into
a legal/forensic science career, their greater knowledge base may accrue other ‘transferable
skills’ or benefits). In early 2009, two surveys were emailed to law and forensic science
lecturers to assess the teaching of law to forensic science students, and forensic science to law
students. While most forensic science lecturers attested to there being ‘law’ in their degree
programmes, what this essentially transpired to mean was that they made their forensic science
students walk to the law school and study one of their ‘criminal law/criminal process’ modules
(which some admitted their students struggled to pass). Law lecturers almost all conceded that
there were no real opportunities for students to study any ‘forensic science’ modules as part of
their degree, and that — at best — they might mention scientific evidence in a couple of
evidence lectures (when covering expert evidence —assuming the student elected to study
evidence, which is —lamentably not a pre-qualifying compulsory subject in England and
Wales).

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

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

The Canadian experience

Casting an eye internationally to seek solutions to problems can often be beneficial, particularly
when issues affect many nations similarly, so following the 2009 workshop and report (2011)
the authors ventured further afield for inspiration. It became apparent that the Canadians were
significantly ‘ahead of the game’ developing their forensic-legal-policing education, and
pivotal relationships between practitioners and Canadian HEIs were changing the educational
landscape. This anecdotal evidence required further interrogation so we sought the advice of a
number of individuals from organisations within their forensic-legal-policing triad. These
individuals provided us with a range of perspectives and were knowledgeable about their own,
as well as partner communities. They were all able to offer a micro- as well as macro-level account of developments and their rationales, locally and nationally, including the socio-political climate that engendered the developments. These individuals included: judges (Justices); defence and prosecution lawyers; forensic practitioners (some of whom are also warranted police officers); and forensic science and legal academics.

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

In 2002, the Federal, Provincial, and Territorial Heads of Prosecutions (HOP) Committee in Canada established a Working Group on the Prevention of Miscarriages of Justice. Their mandate was to develop best practice to assist prosecutors and police in better understanding the causes of wrongful convictions, and to recommend proactive policies, protocols and educational processes to guard against future miscarriages of justice. In providing clear, comprehensive and practical recommendations for improvements to the criminal justice system, the HOP Committee Report focused on the education of justice system participants. It suggested that such education must be multi-faceted and directed at all participants in the justice system to be effective, because the errors that lead to wrongful convictions are multi-layered and often the result of a combination of events.
An objective of our research was to outline examples of good practice, including lessons on how the Canadians proceeded and the possible future risks to the systems in place. This could then be imported as a potential template for ‘next steps’ and provide some renewed impetus to work toward solutions to the issues facing the law and forensic science interface in the UK. One clear initial requirement for progress is the necessary blurring of the dividing line between ‘academics’ and ‘practitioners’, a demarcation that is no longer inflexible in Canada. The research thus sought to address the multi-layered nature of forensic science-legal education and made no apology for not concentrating upon just ‘academia’ or just ‘practitioners’. Indeed, attempts to encompass the full complexity of the educational landscape, requires a broad-brushed interpretation of ‘education’, often conflated with ‘training’ (is there a strict or discernible boundary between education and training? Or is this yet another barrier that needs dismantling?). This is necessary to demonstrate the ‘good will’ and enthusiasm required by those working within HEIs and the criminal justice system to cross professional as well as disciplinary boundaries.

With forensic science and forensic medicine both situated in funding-restricted government ministries, neither had been able to undertake scientific research to an adequate degree. Equally, education was limited to what other government-based ministries or officials requested. As Canadian academic institutions did not adequately provide a platform for such research, a dedicated forensic institute was required to undertake these R & D and professional (CPD) educational tasks: a dedicated forensic institute able to provide on-going education for justice system professionals. The response was the construction of a ‘Forensic Services and Coroners Complex’ in Toronto, which, while impressive in size and scale of operations, has a clear focus on educational programmes, and research collaborations with academic institutions.
Whilst the Forensic Services and Coroners Complex has considerably strengthened the provision of forensic science and medicine in Ontario, there already existed at least two establishments, exemplary for their work in blurring the dividing lines between law and science, academia and practice. We were fortunate to be able to visit both the Centre for Forensic Science and Medicine (CFSM) at the University of Toronto, and Osgoode Hall Law School, at York University. The CFSM, opened in September 2008, was created with interdisciplinarity at its core. The Centre holds regular seminar series, special public lectures, as well as conferences and workshops, to advance teaching and research in the forensic disciplines. The CFSM has forged a forensic research network, while unifying the forensic community, creates an environment that fosters interdisciplinary research. The Centre has developed forensic educational programs across the entire training spectrum and through inter-professional education.

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

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

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

The ongoing frustration perhaps then lies with the fact that this partnering of law/science academics (and their students) to deliver impactful teaching, has been undertaken (and extolled) for almost as long as forensic science undergraduate programmes have existed. Indeed, there would be few forensic science programmes that could be accredited, or have any external approval, without a ‘mock trial’ form of assessment featuring at some point, proving too that law and forensic science academics can be made to meet and collaborate, albeit to this
limited degree. Yet, the wrongful convictions, and critical reports have continued unabated. Why have forensic educators not innovated further, building upon these apparently strong foundations?

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

What judges need to know is not how to design the best scientific study, but how to evaluate imperfect ones. Judges do not need to be trained to become scientists; they need to be trained to be critical consumers of the science that comes before them. This is an important distinction…Determining just what constitutes a sufficient level of scientific understanding for the judiciary is a question for future study and policy development. Those involved in legal education at every level
should make efforts to raise the scientific literacy of all of those involved in the legal system (Gatowski, 2001 p.455).

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

In light of these issues, further to our efforts to assess the extent of cross-disciplinary undergraduate education in the UK and Canada, we also worked together with others to produce an open-source set of materials that could bring forensic science into the law degree via an elective module: ‘Forensic Process and the Law’ (the ‘traditional’ evidence module was unyielding to change, necessitating a bespoke module). These materials: a combination of staged crime-scene photographs (of which several sets pertaining to different scenarios amounted to nearly 1000 images), with accompanying documents including evidence schedules, witness statements etc. — the paraphernalia of a criminal investigation and subsequent criminal case, were packaged so that educators could use them to create a simulacrum of a criminal case for law students to ‘work’. During the weekly progress through the investigation and prosecution, the law students had to identify the different roles/agencies involved in a complex criminal investigation and how these intersect. Using both mock statements from police and witnesses, alongside the photographic images of the scene, students were able to gain an appreciation of the role of a forensic scientist, and ultimately, how their role sat within the policing and legal processes. Ultimately they would come to understand how
scientific evidence is generated, and presented within an investigation, and subsumed into a
prosecution. The goal was for the law students to gain an appreciation of how decisions are
made during investigations that then impact upon evidence at trial, and how a dialogue with
scientists always improved investigative and prosecutorial outcomes — a lesson they
hopefully take into practice with them.

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

Conclusions

Assisting with legal disputes is the raison d’être of forensic science, and as such, one would
expect that the disciplines of law and forensic science be entwined. Yet we educate students of
these disciplines either as if never the twain shall meet, (or sometimes simply launching them
in the deep end of the other discipline — sitting science students in the back of a law lecture
and expect them to work out how to swim). Working closely with forensic and legal academics,
it is clear that despite small and isolated pockets of collaboration, real pedagogical innovation combining forensic and legal academic communities is still rare despite repeated exhortations to come together in the academy. Not only are we still a long way from any meaningful dialogue, in many instances we still seem content in our disciplinary silos, which are then — unsurprisingly — replicated in professional arenas. While the capstone 2009 NRC Report reserved its harshest criticisms for the forensic science community, it also admonished lawyers and judges, who were portrayed as having insufficient training and background in scientific methodology and failing to fully comprehend scientific evidence and assess its reliability. What is clearly evident in this report and others, is that amid all the discussion on the pressing need to improve communication and collaboration, there is still very muted, or superficial discussion over actual measures to augment the education of forensic science or law students, or the focus is on post-graduation training/continuing professional development.

Yet there remain powerful drivers that should motivate the introduction of science (and statistical method) into law degrees, and the enhancement of legal education for forensic students. Research into the causes of wrongful convictions clearly demonstrates that if legal professionals are unable to competently assess and handle scientific evidence, the pursuit of justice can be seriously hampered, potentially leading to factual errors, as well as the misrepresentation and/or misinterpretation of evidence. The awakening of the forensic industry to the issues of bias are an example of threats to appropriate criminal justice outcomes. Issues such as bias need to be addressed at the point of education delivery, not the point of delivery of justice – for then it is all but too late. Within the UK forensic industry over the past few years there has been a wider understanding and an acceptance to tackle the issue of bias (Kukucka et al, 2017) and also to better inform those key stakeholders in the legal fraternity the true value of the forensic evidence being presented. But much remains to be done, which will require collaboration.
Our pedagogy impacts upon our students’ futures and what sort of professionals they go on to be. While as forensic scientists, our mistakes may not end up in the morgue, our failings can have significant consequences: “the work we do and the conclusions we reach — either in forensic reports or testimony — have lasting effects on people’s lives, so we must pursue every effort to understand and identify our weaknesses” (Laporte, 2018). We aim as educators to equip our students with the tools to become the best forensic scientists and the best legal professionals. If we were leaving big gaps in their knowledge with glaring holes in our curricula, we would swiftly amend the curriculum (indeed, for our degree accreditation we would be quickly brought up by our respective external examiners and regulators if we were failing to cover essential knowledge in our programmes). And yet, are we still failing to demonstrate to our students the truly interdisciplinary world in which they will have to work in the future?
REFERENCES


President’s Council of Advisors on Science and Technology (2016) Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods (the PCAST Report), Executive Office of the President
