Georgetown University Law Center Administration:

As law students, we understand the pedagogical value of ensuring that exams test what we have learned throughout the semester, not what we can Google during an exam. We also understand the administration's interest in preserving the academic integrity of exams.

However, as law students we also understand the importance of one's individual right to privacy, and the evaluation of risk and benefit that the law traditionally undertakes when evaluating measures that would infringe upon that right. As of the writing of this letter, neither the Office of the Registrar nor the developer of Exam4 have provided a transparent evaluation of the multiple security concerns raised by the lack of documentation for this software.

First, this software is explicitly incompatible with the latest operating systems for both Mac and PC users. This is unreasonable and unacceptable from a technological basis. Both Microsoft and Apple provide beta versions of their operating systems to developers well in advance of official releases. This allows developers to perform compatibility testing and any necessary updates, so software is compatible when operating system updates are released to the public.

Operating system updates are critical for computer security; while they also provide new features and aesthetic changes, the primary purpose of operating system updates is to make our computers more secure. In the contemporary computing climate, not updating one's operating system is negligent, as it is a willful exposure to massive unnecessary risk. For a law school to require that students leave their personal computers open to external hacking or myriad attacks for the sake of using a particular exam software is tantamount to encouraging willful negligence in its students for the sake of convenience.

Further, asking students to refrain from updating their computers is asking many to undertake undue liability. Law students often work with sensitive private data as a part of experiential-based learning, a pedagogical method upon which Georgetown in particular places great importance, or as part of a job outside of law school. Frequently, that work is done on their personal laptops, as most intern- or externships do not provide hardware for students as part of the position.

Hardly a week goes by without seeing some type of data breach in the media headlines. Hackers are intelligent and are always looking for new valuable targets; law firms are often of particular interest, as they are repositories of sensitive data. Just a year ago, DLA Piper's internal network was taken totally offline by a ransomware attack. It is not unreasonable to believe that law students may also be targets of hackers seeking sensitive data. Preventing students from updating their operating systems makes them prime targets for such attempts. The Exam4 website, with its lack of software documentation, list of participating schools, and explicit statement of incompatibility with new operating systems, provides a tempting challenge to hackers who recognize that exam season will be a time at which law students are allowing third-party software administrative access to their un-updated computers.

Second, the Exam4 software completely lacks transparent documentation, which should be provided by the developer. Several questions regarding the privacy and security of this software have been raised, that documentation should reasonably be able to answer. To wit:

- What does the exam administrator's ability to constrain and modify an individual student's laptop look like?
- How is the "closed book" exam configuration authenticated?
- Does Exam4 allow for remote file acquisition and/or screen retrieval as enforcement measures?
    - If so, what files can be obtained from the user's hard drive?
    - If so, are there warnings or data logs visible to the end-user (i.e., the exam-taker) that alert the end-user to the fact that data has been retrieved from their computer, and the nature of the data retrieved?
- How are the remote control and remote monitoring functions documented?
    - Is that documentation available to the end-user (i.e., the exam-taker)?
- How does the hard drive "locking" system work? Does it have the potential to corrupt user data?
- Who has access to the data retrieved by Exam4? Is such access isolated to professors and/or exam graders, or are the developers also allowed to access this data?
- Through its access to a computer's hard drive and operating system, Exam4 has the potential to also control microphone and camera function. How does Extegrity ensure against this misappropriation of their software?

Third, as a privacy matter, the burden of proof does not lay with the student to show insecurity. Rather, it lays with the administrators to show that they have properly isolated access to student's personal computers with appropriate compensating controls. Until such documentation can be produced, it is unreasonable to ask students to bear the full cost of administrating and proctoring exams at the cost of their privacy. Our personal, professional, and financial identities live on these devices, and this software has the potential to compromise all of them if improperly leveraged.

One cannot deny the legal implications that this use of this software raises. Students use their computers for things other than taking law school exams. Some students run businesses. Others are involved in private studies. A number of students have signed nondisclosure agreements that would be violated by installing software which has undocumented access to the student's hard drive. For students that engage in private business with the United States and/or foreign governments, the consequences of breaching an NDA can be tragic. These conflicts are not hypothetical; they are real concerns that must be met with a real solution.

Fourth, this change in software so close to exam season disadvantages students due to their unfamiliarity with Exam4. Virtually all current students are accustomed to using Microsoft Word or an equivalent word processor – Microsoft Word is the industry standard, and word processing software has been used by students throughout their academic and professional careers. Exam4 is a new software which very few students, other than those exposed to it during the Summer 2018 semester, have ever used before. Many students find law school extremely time consuming and simply do not have time to take many practice exams to become accustomed to the new

software. This change thus advantages students that adapt to new technology quickly and disadvantages those that do not. This change further disadvantages students with disabilities. Those with learning disorders may struggle in this unfamiliar test taking environment. It may be anxiety inducing to be forced to use new software, and will lead to substantially worse performance than if a typical word-processing software was an option.

Finally, in response to the suggested alternative of hand writing an exam: as the Exam4 website points out, many students have not handwritten any substantial document in years. These students cannot write legibly and quickly. To tell students that they "can use Exam4 or write their exams by hand" is not meaningfully different than telling them they will be heavily penalized if they do not provide Georgetown University and Extegrity administrative access to their personal computers.

Until the above issues are addressed, students should not be required to install the Exam4 software on their personal laptops.

Sincerely,
Students of Georgetown University Law Center