Patent and Trade Secret Law
Franklin Pierce Law Center
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Examination Number _____

This is an open book and open note examination.

There are three essay questions in this examination. The first two questions relate to what many might consider to be a set of facts that would be "one problem". In my opinion the facts are related, but give rise to two different legal controversies. Read the context of each question carefully . State the basis for you reasoning and reply to the question presented. Each of the questions requires a yes/no answer. Start with this answer and then explain.

The third question relates to trade secret law. Please explain your answer in relation to the California uniform Trade Secret Act.

Core Facts for Questions 1 and 2.

The trial court made the following factual findings.

1. U.S. Patents Nos. 5,244,797 ("the '797 patent") and 5,668,005 ("the '005 patent") are not unenforceable on the ground of inequitable conduct.

2. Reverse transcriptase ("RT") is a naturally occurring enzyme that exhibits DNA polymerase activity (d-activity) and RNase H activity (R activity). R activity degrades the original mRNA template as the cDNA molecule is made. R activity is undesirable because this degradation of the mRNA template negatively affects the ability and efficiency of the RT to make cDNA. *In other words, R activity is bad and therefore it is desirable to avoid it like a plague if possible.*

3. Beginning in the early 1980's, the inventors of the '797 and '005 patents, Drs. Ima Barney and Gary Gerard, sought to develop a genetically engineered RT enzyme that exhibited DNA polymerase activity but did not substantially exhibit R activity. The inventors faced several difficulties in developing this enzyme. First, it was unknown at the time where on the RT molecule the DNA polymerase and R activities resided. Further, it was unknown whether the R activity could be selectively removed to produce an improved mutant RT enzyme that retained DNA polymerase activity. The inventors spent several years unsuccessfully attempting to locate and delete the R activity from the RT molecule. *See the inventor's notebooks to confirm their understanding of these problems.*

4. In January of 1986 the inventors read the publication of M. S. Johnson et al., Computer Analysis of Retroviral Pol Genes: Assignment of Enzymatic Functions to Specific Sequences and Homologies with Nonviral Enzymes, 83 Proceedings of the Nat'l. Acad. of Sci. 7648 (1986) ("the Johnson article") and recognized they had a potential breakthrough in their problem. *Again the inventor's notebooks substantiate their realization of the importance of the Johnson publication.*

5. The Johnson article reported comparisons made between amino sequences of certain RT molecules and the sequence of the ribonuclease enzyme from E. coli, which exhibits R activity but not DNA polymerase activity. The findings of Johnson suggested to the inventors that the R activity of the RT enzyme resided at the carboxyl terminal end of the molecule.

6. The inventors, however, were skeptical of Johnson's results because the literature existing at the time suggested that the location of the R activity was at the front end of the RT molecule. Additionally, the Johnson article was suspect because it utilized computer comparisons of amino acid sequences, rather than experimental data. Such computer comparisons were fairly new in the art at the time. Thus, in order to "exclude the possibility" that Johnson was correct, they decided to conduct experiments at the carboxyl terminal end of the RT enzyme.

7. Contrary to expectations, these experiments were successful after six month s of experimentation and, by December 1986, the inventors had created a mutant RT enzyme

that lacked R activity but retained DNA polymerase activity. *Thus what Johnson taught was true.*

8. A few months after confirming their discovery, the inventors learned that another researcher, Dr. Stephen Goff, was working to develop an engineered RT enzyme. On April 15, 1987, Barney spoke on the telephone with Goff, a researcher at Columbia University.

9. During this conversation on April 15, 1987, Goff stated that he had developed "oligonucleotide insertion mutations that reduce R in cloned [RT]." However, there is no indication in the record that Goff revealed any further details concerning his work to Barney during this conversation, *other than the fact that Goff had completed his work early in December of 1986.*

10. During the summer of 1987, Barney learned that Goff had presented his RT research at Stanford University. Although neither invnetor attended this presentation, they surmised, based on conversations with colleagues, that Goff demonstrated "similar results" as the inventors. Based on this information, the invneotrs urged the plaintiff, their employer, to allow them to publish their results as quickly as possible, under the assumption that Goff would soon publish similar work. They also submitted forms to their management that initiated the process for preparing a patent application for their engineered RT enzyme.

11. In January 1988, the inventors, Barney et al. filed the parent application from which the '797 and '005 patents ultimately issued. In general, the application claimed an engineered RT enzyme that exhibited DNA polymerase activity but did not exhibit substantial R activity.

12. As part of the duty of disclosure under 37 C.F.R. § 1.56, the inventors disclosed to the Patent and Trademark Office ("PTO") numerous prior art references, including the Johnson article. However, the inventors did not reveal their knowledge of Goff's work because their patent attorney indicated that such limited and incomplete information would not be material.

13. During the prosecution leading to the '797 patent, the Johnson article took on particular importance for the Examiner. Several times, the Examiner rejected the inventors' claims as obvious over Johnson, often in combination with other prior art that described the RT gene sequence.

14. The Examiner asserted, because Johnson taught that the R activity was located at the carboxyl terminal end, and because there was a strong motivation in the art to eliminate such activity, the claimed invention would have been obvious. In response to these rejections, the inventors replied, at the time of the invention, there would have been no reasonable expectation that the application of Johnson's results would successfully lead to the deletion of R activity. This was because the teachings of Johnson were contrary to teachings in the prior art which suggested that "something more was necessary" than a deletion at the carboxyl terminal end to eliminate R activity. Thus, the inventors contended that the claimed invention would not have been obvious over Johnson. The Examiner was persuaded by these arguments, and the '797 patent issued on

September 19, 1993.

15. At no time during this prosecution did the inventors reveal to the Examiner that the Johnson article played a key role in their development of the claimed invention nor did they provide copies of their notebook pages referred to in findings 3 and 4 *supra.*

16. Shortly after the issuance of the '797 patent, the inventors filed the continuation application that eventually resulted in the issuance of the '005 patent. During the prosecution of this application, the inventors revealed their knowledge of Goff's work. The Examiner allowed the application to issue over the newly revealed information regarding Goff, stating that the new information had "no bearing on ... the instant application."

17. At trial Dr. Goff, corroborated by notebook entries, testified that he had produced an engineered RT enzyme that exhibited DNA polymerase activity but did not exhibit substantial R activity in his laboratory. *The trail court after hearing this testimony struck it as being irrelevant in light of finding number 16, and did not allow the jury to consider Goff's work as evidence .*

Question 1. You are a clerk for a Judge sitting in the Federal Circuit Court of Appeals assigned to the following case. The judgment in this case is premised upon the notion that Goff's work was not material to a finding of inequitable conduct, specifically findings 8-10 16 and 17. Your Judge wants your opinion whether inequitable conduct should be found in this case and why or why not.

Additional Facts For Question 2.

2.1 Goff has a pending application before the United States Patent and Trademark Office where he is attempting to claim an engineered RT enzyme that exhibited DNA polymerase activity but did not exhibit substantial R activity

2.2 The defendant's in the litigation at hand have bought the full interest in Goff's application.

1.3 Goff first saw the Johnson article in July of 1986 and immediately started to produce the engineered enzyme, which he completed on December 13, 1986.

1.4 Goff filed his patent application July 23, 1988 after going through the University system's intellectual property evaluation system.

1.5 Goff's application was lost due to various and asundry reasons in the Office until coming to light in 1997, whereupon Goff continued prosecution.

1.6 Goff has filed claims copied from plaintiff's patents and requests the Office to institute an interference (actually two interferences).

1.7 The examiner of the application notes that the applicant newly added claims are supported under 35 U.S.C. s 112 and when read encompass the claims originally filed in the application.

1.8 The time between when the Office retrieved the lost application and when the entry of the new claims is considered reasonable. No basis exists to limit the applicant's ability to seek all legal rights available to them.

Question 2. The facts as stated in question 1 are taken as true, and the above facts have come to light. You are a clerk in the Solicitor's Office in the United States Patent and Trademark Office (the attorney for the Patent Office whose advice is highly considered and respected). She has asked whether there is a *prima facie* case for declaring an interference between Goff and Barney et al. Should an interference be declared? If so, can Goff win the interference?

Question 3

When the Ford motor company bought the car division of Volvo the newspapers and trade press reported that Ford made the purchase for a number of reasons including the possibility that Volvo had technology that Ford could use. Of course, such reports are as much to impress the investors as they are statements of fact. Nevertheless, upon reviewing the technologies that were being used by Volvo the research staff at Ford were surprised to find that Volvo had developed a sophisticated and effective fuel management software package for fuel injection systems (these are used on most automobiles at present).

Realizing the value of this technology Ford used it all of its product line and has made sure that only the engineers that need to know about this system are allowed access to the software, both at Volvo in Sweden and at Ford Research in Dearborn. Ford has the software burnt into an integrated circuit chip in a plant in California. Under California trade secret law, if Ford affixes a notice that the integrated circuit chip contains proprietary information belonging to Ford, and that the chip is intended only for use in the automobile in which it is sold, can Ford maintain a claim to trade secret status for the the software? The notice reads:

"This device contains information that is proprietary to the Ford Motor Company and is intended in the operation of the vehicle in which it is installed and is not authorized for any other use. The device is licensed to be used in a vehicle and the owner of said vehicle is provided no other rights and may not disassemble this integrated circuit in order to access Ford Motor Companies proprietary information encompassed within. There is provided no right to modify or repair this integrated circuit chip...."

Does Ford have a trade secret in this technology? Should Ford have a trade secret? Can the product be reverse engineered?