

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA : CRIMINAL ACTION
 :
 v. :
 :
 KAI-LO HSU a/k/a/ James Hsu¹ : NO. 97-323-01

MEMORANDUM

Dalzell, J.

February 16, 1999

From the inception of this prosecution under the new Economic Espionage Act of 1996, we and the parties have been vexed by the problem of balancing a defendant's rights to pretrial discovery with the understandable concerns of the owner of putative trade secrets that are at the heart of the Government's case. On return from the Government's interlocutory appeal which dealt with this issue,² we have sought to fulfill the desires of the parties and the expectations of our Court of Appeals by conducting an in camera review of the redactions made to three hundred and three pages of documents the Government used in a "sting" operation at the Four Seasons Hotel in Philadelphia

¹ We recently granted the Government's motion to dismiss the indictment against defendant Chester S. Ho, Criminal No. 97-323-02. See United States v. Chester S. Ho, Crim. No. 97-323-02 (E.D. Pa. Jan. 28, 1999). An arrest warrant has been issued for defendant Jessica Chou, Criminal No. 97-323-03, but she lives in Taiwan which has no extradition treaty with the United States. See United States v. Hsu, 155 F.3d 189, 193 n.2 (3d Cir. 1998). Therefore, while the caption identifies only one defendant, in several places in this Memorandum we refer to "the defendants" because many of the prior motions and hearings involved both defendant Hsu and former-defendant Ho.

² The appeal also dealt with a proffered impossibility defense that we and the Court of Appeals rejected.

on June 14, 1997 (hereinafter "the June 14th documents"). See United States v. Hsu, 155 F.3d 189 (3d Cir. 1998).

This memorandum will address the two issues our Court of Appeals raised at the end of its August, 1998 Opinion: first, whether the redacted information in the June 14th documents should be disclosed to the defendant because they are "material" to the defense and, second, whether the June 14th documents "have been properly redacted to exclude only confidential information." See id. at 205.

Procedural History³

The day after the mandate of our Court of Appeals issued, we ordered the parties to submit a "joint case management proposal" to address the issues our Court of Appeals raised and to establish a timetable for the handling of pretrial motions and trial. On October 30, 1998, the parties submitted a joint proposal whereby: (1) by November 13, 1998, the Government would submit an affidavit from a representative of Bristol-Myers Squibb ("BMS") that would describe whether the redacted information in the June 14th documents constitutes a trade secret of BMS and explain the reasons for the particular redactions; (2) by November 18, 1998, the defendants would submit a memorandum that addresses the materiality of the redacted information to their defense; and (3) on November 24, 1998, we would conduct a hearing

³ As the Court of Appeals recited the basic facts of this case in its Opinion, see id. at 191-93, we will not rehearse them again here.

on the issues of materiality and confidentiality that our Court of Appeals identified.⁴

On November 6, 1998, after a hearing on the parties' joint case management proposal, we issued an Order establishing the deadlines for this case that largely adopted the parties' proposed deadlines. See United States v. Hsu, Crim. No. 97-323 (E.D. Pa. Nov. 6, 1998). As so often has happened in this case, what seemed straightforward soon derailed into a bog of more complexity.

On November 13, 1998, the date that the Government was supposed to submit an affidavit from a representative of BMS addressing the confidentiality of the redactions to the June 14th documents, we instead received a letter from the Government informing us that "it is possible that some portion of the redacted information can now be released to the defendants" because some of the redacted information in the June 14th documents became publicly available through the filing of an international patent application by Phyton Catalytic, Inc. ("Phyton")⁵ in November, 1997.⁶ See Letter from Louis Lappen and

⁴ The parties' joint case management proposal also contemplated a trial date in April, 1999. Trial is currently scheduled to commence April 5, 1999.

⁵ BMS and Phyton are working together on the plant cell culture process for the manufacture of the cancer-fighting drug that BMS calls "Taxol". See n. 13, infra. BMS hired Phyton as an outside consultant. See Government's Response to Defendants' Memoranda on Materiality and Confidentiality at 3-4.

⁶ In a notable coincidence, November, 1997 was the same
(continued...)

Joseph Dominguez, Assistant United States Attorneys, to the Court, at 1 (Nov. 13, 1998) (on file with Court). In this letter the Government also requested an additional six weeks to have BMS "conduct a complete re-analysis of the documents to ensure that, in light of the patent application, only those portions of the materials which remain confidential be redacted." Id. The Government accompanied the letter with a motion for extension of time.⁷

On November 24, 1998 we held a hearing on the Government's motion for extension of time. At that hearing we expressed our concern about the Government's request for more time to re-evaluate the redactions to the June 14th documents, particularly in view of the fact that the Government had represented to us (and again to our Court of Appeals) that only trade secret information had been redacted from the June 14th documents in the first place. See Government's Motion for Protective Order, August 12, 1997 at 9 (explaining that "only the

⁶(...continued)
month that the Government launched its appeal of our Order of October 25, 1997 that allowed for the limited disclosure of the redacted information in the June 14th documents to the defendants.

⁷ In response to the Government's motion for extension of time, the defendants disclosed that while Phyton's international patent application was publicly released in November, 1997, Phyton actually filed it in May, 1997 (one month before the Government "sting" operation at the Four Seasons Hotel) and it, in turn, related back to a U.S. patent application filed in May, 1996. See Defendants' Response to the Government's Motion to Continue the Date for Filing an Affidavit to Justify Trade Secret Redactions, Nov. 16, 1998, at 3-4.

most valuable and confidential trade secret information" had been redacted); see also, United States v. Hsu, 155 F.3d at 197-98 n.11 ("We have been advised by counsel for the government that the redactions consist of technical information that constitutes trade secrets under any definition").

At that hearing we heard the testimony of Dr. Nikhil Mehta, a BMS scientist, who BMS assigned in August, 1997 to redact all confidential information from the June 14th documents. Dr. Mehta testified that he spent one or two days in August, 1997 redacting what he believed to be "confidential" information from the June 14th documents, until he got sick and was unable to complete the project.⁸

On cross-examination, Dr. Mehta admitted that in making the redactions to the June 14th documents he never consulted with any attorneys (either from BMS or the Government), was never provided with legal definitions for the terms "confidential" or "trade secret", and was never told to do any additional research beyond reviewing the June 14th documents themselves. During that hearing the defendants also illustrated nine different examples in the redacted June 14th documents where there were inconsistencies in the redactions, e.g. where the same document

⁸ Due to Dr. Mehta's sickness, the redactions were apparently completed by Dr. Norman Lacroix, another BMS scientist. Dr. Mehta testified that he made approximately fifty percent of the redactions to the June 14th documents, and Dr. Lacroix completed the balance of the editing.

appeared twice in the collection and was redacted on one page but was unredacted on the other page.⁹

In view of the inconsistencies in the redactions to the June 14th documents, it became clear to us during the November 24, 1998 hearing that the Government had made no independent review of the redactions. In view also of the existence of patents and other public materials, a thorough re-evaluation of the redactions to the June 14th documents was doubly called for. At this point, we heard the testimony of Dr. Pallaiah Thammana, the Associate Director of Biotechnical Development at BMS, who BMS offered as an expert to undertake a complete re-evaluation of the redactions to the June 14th documents. In his testimony, Dr. Thammana explained the steps that BMS would need to take to re-evaluate the redactions and how long it would take to complete the project.

After Dr. Thammana testified, we recessed the hearing to allow the parties to create an agreed-upon protocol to govern Dr. Thammana's review of the June 14th documents, as well as to discuss a timetable for this task. Based upon the agreement the

⁹ See Government's Exhibit 2, November 24, 1998. Compare pages 260a and 487a; pages 261a and 488a; pages 267a and 491a; pages 268a and 492a; pages 288a and 512a; pages 289a and 511a; pages 294a and 471a; pages 297a and 473a; and pages 300a and 476a. Furthermore, at the hearing the defendants informed us that there were additional inconsistencies. On December 10, 1998, defense counsel sent us a letter informing us of twelve additional inconsistencies in the redacted June 14th documents. See Letter from William McDaniels, Thomas Suddath, Norman Greenspan, Ian Comisky, and Stephen LaCheen, counsel for the defendants, to the Court (Dec. 10, 1998) (on file with Court).

parties reached during that recess, on November 24, 1998 we issued a Scheduling Order, whereby: (1) by November 30, 1998 BMS would provide us with a copy of the protocol by which it would conduct the re-evaluation of the redactions to the June 14th documents; (2) by December 16, 1998, BMS would complete its re-evaluation of the June 14th documents and the Government would provide us with copies of the June 14th documents both in their unredacted and newly-redacted forms as well as with an affidavit from a BMS employee explaining whether the redacted information is a trade secret within the meaning of the protocol and the reasons for the redactions; (3) by December 22, 1998 the defendants would submit a memorandum that addresses the materiality of the redacted information to their defense, to which the Government would respond to by December 28, 1998. See United States v. Kai-Lo Hsu, Crim. No. 97-323 (Nov. 24, 1998).

On November 30, 1998, counsel for BMS submitted a three-page protocol that provided the definition of the term "trade secret"¹⁰ and listed the patents and public materials it would review to re-evaluate the June 14th documents. See Letter from J. Clayton Undercofler, counsel for BMS, to the Court (Nov. 30, 1998) (on file with Court). Furthermore, on December 3, 1998, counsel for BMS supplemented the protocol with a list of thirteen additional patents and forty-two additional publications

¹⁰ The parties agreed to adopt the definition of "trade secret" set forth in the Economic Espionage Act. See 18 U.S.C. § 1839(3).

it would review, see Letter from J. Clayton Undercofler, counsel for BMS, to the Court (Dec. 3, 1998) (on file with Court), and defense counsel further supplemented that list with an additional thirty-four articles and resources. See Letter from William McDaniels, Thomas Suddath, Norman Greenspan, Ian Comisky, and Stephen LaCheen, counsel for the defendants, to the Court (Dec. 7, 1998) (on file with the Court).

On December 16, 1998, the Government turned over copies of the June 14th documents both in their unredacted and newly-redacted form. Along with the June 14th documents, the Government also provided us with Dr. Thammana's six-page affidavit that explained in detail the steps he had taken to evaluate the June 14th documents, see Thammana affidavit at ¶¶ 4-6, as well as his general conclusions about why the remaining redactions were confidential within the definition of a "trade secret" under the Economic Espionage Act. See 18 U.S.C. § 1839(3).¹¹

¹¹ After Dr. Thammana's review of the June 14th documents, 49.8% (151 out of 303) of the documents contain some form of redaction, ranging from a single word or sentence to the entire page. In 20.8% of the June 14th documents (63 out of 303) the page is completely redacted. In 29% of the June 14th documents (88 out of 303) the pages are partially redacted. While the number of redactions is still quite high after Dr. Thammana's review of the June 14th documents, Dr. Thammana notes in an attachment to his affidavit that a significant number of documents that had previously been redacted by Dr. Mehta and Dr. Lacroix in August, 1997 were unredacted by Dr. Thammana. The Thammana Affidavit, Exhibit K, cites one hundred pages where Dr. Thammana unredacted information that had previously been redacted, thereby revealing to at least that extent the degree the Government misled us and the Court of Appeals (e.g., "We have (continued...)

Pursuant to our Scheduling Order, on December 22, 1998 the defendants submitted two separate memoranda on the issues our Court of Appeals raised. The first memorandum addressed the "materiality" of the redacted information in the June 14th documents to the defense. The second memorandum responded to Dr. Thammana's affidavit and addressed whether the June 14th documents were properly redacted to exclude only confidential information. In this second memorandum, the defendants argue that because much of the information about Taxol production technology is no longer confidential as a result of the existence of patents and other public information, there is no need to redact the June 14th documents.¹²

After an in camera review of the June 14th documents in both their redacted and unredacted forms, it became clear to us that while the "materiality" issue was a mixed question of law and fact that we were quite capable of addressing, the issue of whether the June 14th documents had been properly redacted to exclude only trade secret information required technical

¹¹(...continued)
been advised by counsel for the government that the redactions consist of technical information that constitutes trade secrets under any definition", Hsu, 155 F.3d at 197-98 n.11).

¹² On December 28, 1998, the Government filed a memorandum responding to the issues raised in the defendants' memoranda. In its response, the Government disclosed that it had consulted with unnamed scientists at the National Cancer Institute who reviewed the protocol, several of the publications, and the June 14th documents (only in their redacted form). The Government claimed that the scientists at the National Cancer Institute represented to them that the redactions appeared to be appropriate. See Government's Response at 15.

expertise far beyond our capabilities. Short of accepting the bald-faced assertions of Dr. Thammana in his six-page affidavit, or undertaking an independent review of all of the patents and publications about Taxol production technology on our own, we realized that we needed the assistance of a neutral "technical advisor" to aid us in our inquiry.¹³

Therefore, on January 5, 1999, we held a telephone conference call on the record with all the parties and counsel for BMS. In that conference call, we proposed that the Government locate a scientist at the National Cancer Institute, with a background in Taxol-related science, to serve as a "scientific law clerk" or "technical advisor" who would assist us in our inquiry and would take an oath to keep all information he reviewed confidential. See Reilly v. United States, 863 F.2d 149, 154-61 (1st Cir. 1988)(holding that district court did not abuse its discretion in appointing a "technical advisor" to assist in calculation of damages); see also, Renaud v. Martin Marietta Corp., Inc., 972 F.2d 304, 308 n.8 (10th Cir. 1992) (approving of use of "technical advisors" by the district court and explaining that deposition and cross-examination of such an advisor is inappropriate because he is not a court-appointed

¹³ We should here note that although BMS seems to have appropriated "Taxol" as its trademark, in fact the word apparently has been in the botanical lexicon for many years before BMS purported to seize it out of the language. Although whether BMS has a legal right to a trademark to "Taxol" is mercifully beyond the scope of our labors here, we nevertheless use the word as a generic scientific term that makes it unnecessary to insert "TM" or a circled "R" after each use of it.

expert under Fed. R. Evid. 706). As no one objected to our proposal (including BMS), we asked the Government to send us the curriculum vitae of such a scientist by January 7, 1999.

On January 7, 1999, we held yet another conference call with the parties and counsel for BMS, this time armed with the curriculum vitae of Dr. Kenneth Snader, a chemist with the National Cancer Institute. During the telephone conference call the parties agreed that Dr. Snader, an expert in natural products chemistry with a Ph.D. from the Massachusetts Institute of Technology, was the perfect candidate to assist the Court, particularly because Dr. Snader has worked on and written extensively about Taxol-related science in the past.¹⁴ During that telephone conference call, it was agreed that Dr. Snader would review: the June 14th documents (in both their redacted and unredacted forms), Dr. Thammana's affidavit, the protocol, and any patents or publications Dr. Snader thought were necessary to complete the review (with a special emphasis on any recent patent applications filed by either Phyton or BMS). Furthermore, it was also agreed that the defendants could pose three to five written questions to Dr. Snader about his independent review of the June 14th documents, which Dr. Snader would answer in his report to

¹⁴ By our count, Dr. Snader has written at least eight published articles about this very technology, including "Taxol: the supply issue," "Separation of taxol and related compounds by micellar electrokinetic chromatography," "High-performance liquid chromatography of taxol and related taxanes from bark and needle extracts of *Taxus* species," and the intriguingly-titled "Detection and Isolation" in the publication Taxol Science and Applications.

the Court. Finally, counsel for BMS offered to make Dr. Thammana, of BMS, and Dr. K. Venkat, the Chairman and CEO of Phyton, available to Dr. Snader should he have any questions about BMS's redactions to the June 14th documents.

On January 12, 1999, we administered an oath of confidentiality to Dr. Snader and informed him of his duties as our technical advisor.¹⁵ On January 13, 1999, we sent Dr. Snader a packet of materials at his office at the National Cancer Institute, including the June 14th documents in their redacted and unredacted forms; an agent of the Federal Bureau of Investigation served as a courier.

After regular consultation with Dr. Snader, and having received Dr. Snader's report on February 9, 1999, see Letter from Dr. Kenneth M. Snader, Pharmaceutical Resources Branch, National Cancer Institute, to the Court (Feb. 9, 1999) (distributed to parties and on file with Court), and based upon our own independent assessment of the June 14th documents and the

¹⁵ The following is the form of oath we administered to Dr. Kenneth Snader on January 12, 1999:

You do solemnly swear or affirm that you will keep confidential any and all discussions and writings shared with you in this matter, and will not speak or write of them to anyone other than Judge Dalzell (and his law clerks) without advance and explicit written permission of the Court.

Dr. Snader so swore.

parties' memoranda, we are at last prepared to address the two issues our Court of Appeals directed that we consider.¹⁶

Federal Rule of Criminal Procedure 16

Fed. R. Crim. P. 16(a)(1)(C) provides in pertinent part that upon the request of the defendant, the Government shall permit the defendant to inspect and copy documents which are "material to the preparation of the defendant's defense or are intended for use by the government as evidence in chief at the trial." Fed. R. Crim. P. 16(a)(1)(C) (emphasis added). Before turning to the issue of "materiality," defendant Hsu first argues that because the Government intends to use the June 14th documents at trial (albeit in their redacted form), he should receive a full and complete set of the June 14th documents, without redactions, during discovery.

The defendant's interpretation of Fed. R. Crim. P. 16 misconstrues what the Government will do with the June 14th documents at trial. While the Government has stated that it intends to use the redacted June 14th documents at trial, the Government has made it clear that it has no intention of introducing any of the redacted information. See Government's Response to Defendants' Memoranda at 8. Therefore, as the

¹⁶ Although, as noted, we originally anticipated the need for a hearing before resolving these issues, that expectation was overtaken by the events just described. It is now apparent that a hearing would be inconsistent with the redaction enterprise we ultimately undertook, and the legal questions associated with this task have been exhaustingly briefed.

Government does not intend to introduce the redacted information as evidence at trial, there is no need to disclose such information during discovery pursuant to Fed. R. Crim. P. 16(a)(1)(C). We turn, therefore, to the issue of materiality.

Materiality

Alternatively, defendant Hsu raises four arguments as to why the redacted information in the June 14th documents is "material" to the preparation of his defense. At the outset, we note that our Court of Appeals stated twice in its August, 1998 Opinion that it was "skeptical" about the materiality of the redacted information to the defense. See Hsu, 155 F.3d at 204 ("As an initial matter, we note that we are skeptical of the materiality, let alone relevance, of the redacted trade secret information to these issues."); see id. at 205 ("Thus, while we might be skeptical of the defendants' asserted need for this information, we will not decide whether they have a right to access documents" because the Court had not seen the June 14th documents themselves).

First, Hsu argues that the redacted portions of the June 14th documents, assuming they actually contain trade secret information, are relevant to the defenses of entrapment and outrageous government conduct.¹⁷ In essence, Hsu argues that if

¹⁷ To raise a valid entrapment defense, the defendant has the burden of producing evidence of both (i) government inducement of the crime and (ii) a lack of predisposition to commit the crime. See United States v. Wright, 921 F.2d 42, 44 (continued...)

the Government chose to bring highly sensitive BMS information to the "sting" operation on June 14, 1997, such evidence would "show how far the government and BMS were prepared to go to create a crime where none existed." Defendants' Memorandum on Materiality, at 18.¹⁸

We reject Hsu's argument because we fail to see how the defense needs the precise formulae and information contained in the redactions to raise an effective entrapment or outrageous government conduct defense. The defense has a copy of the redacted version of the June 14th documents. Hsu is free to use the June 14th documents in this form, without viewing the

¹⁷(...continued)
(3d Cir. 1990). After the defendant has made this showing, the Government then has the burden of proving beyond a reasonable doubt that it did not entrap the defendant. See id.

The outrageous government conduct defense, while having no explicit standard or test, requires a showing of government conduct that is "shocking, outrageous, and clearly intolerable." United States v. Nolan-Cooper, 155 F.3d 221, 230-31 (3d Cir. 1998).

¹⁸ We note that Hsu's argument on materiality is inconsistent with his argument on confidentiality. In the "Memorandum on Materiality," Hsu argues that the redacted information in the June 14th documents is material to his defense because he assumes that the Government used BMS's "crown jewels" at the June 14th meeting to entrap him. See Defendants' Memorandum on Materiality at 17-18. Yet in the "Memorandum on Confidentiality", Hsu argues that because much of the information about Taxol production technology is no longer confidential, due to the existence of patents and other public information, there is no need to redact the June 14th documents. Such arguments cannot be logically reconciled.

redacted information, to make whatever arguments he can fashion about the Government's conduct.¹⁹

Second, Hsu argues that because the unredacted documents were voluntarily shown at the June 14th meeting at the Four Seasons Hotel, the Government and BMS waived their confidentiality. See Defendants' Memorandum on Materiality at 18 (citing Ruckelshaus v. Monsanto Co., 467 U.S. 986 (1984) for the proposition that if an individual discloses his trade secret to others who are under no obligation to protect the confidentiality of the information, the property right is extinguished).

Hsu's reliance on Ruckelshaus, a civil case, is misplaced. We fail to see how BMS's disclosure of three hundred and three pages of highly technical documents during a one hour and forty minute Government sting operation -- in the knowledge that the strangers who would see them will forthwith be arrested -- constitutes a complete and total waiver of BMS's intellectual

¹⁹ We analogize Hsu's request to view the redacted information in this case to a case where a defendant in drug conspiracy case (or attempt case) requests to view and test the drugs that were used in a Government "sting" operation. For the Government to build a case of attempt or conspiracy in a drug case, it need not use actual controlled substances during the "sting" operation. See, e.g., Hsu, 155 F.3d at 204 (citing the Model Penal Code and explaining that one can be guilty of attempt and conspiracy to steal trade secrets even if the documents contained no confidential information at all). Similarly, for our hypothetical drug defendant to build a valid entrapment defense, the actual nature of the substance used in the "sting" operation is irrelevant; all that the defendant needs to show is that he was induced by the Government and that he was not predisposed to commit the crime. In short, whether the substance in the bag is flour or real cocaine does not enhance or impair the quality of the defendant's entrapment defense.

property rights in Taxol production technology. Furthermore, in a case like this, in order to conduct the sting the Government necessarily must use attractive bait. To hold that dangling such bait waives trade secret protection would effectively undermine the Economic Espionage Act at least to the extent that the Government tries, as here, to prevent an irrevocable loss of American technology before it happens. We cannot believe Congress intended to put in such danger the very trade secrets it sought to protect under the new Act.

Third, Hsu argues that the redacted portions of the June 14th documents are material to the "substantial step" element of the attempt charge and the mens rea (intent and knowledge) elements of the Economic Espionage Act charges in both Counts Ten and Eleven of the Indictment. The defendants raised this same argument in their appeal. See Hsu, 155 F.3d at 204 ("For example, the defendants argue that they need the unredacted documents to disprove the intent and 'substantial step' elements of attempt and the 'overt act' requirement of conspiracy."). In its August, 1998 Opinion, our Court of Appeals rejected defendants' argument stating that "proof of these factors is necessarily independent of any trade secrets contained in the Bristol-Myers documents, because the defendants can be guilty of attempt and conspiracy to steal trade secrets even if the documents contained no confidential information at all." Id.²⁰

²⁰ Both the Government and the defendants argued before
(continued...)

Finally, Hsu argues that he needs access to the complete and unredacted June 14th documents because they are material to questions of document integrity and the chain of custody. Hsu raises this issue based on the fact that he does not know who maintained the June 14th documents from June 14, 1997 until they were submitted to the Court for review.

We fail to see how Hsu's review of a complete and unredacted version of the June 14th documents is relevant to concerns about authenticity and the chain of custody. Such questions can be resolved at a later date without the defense viewing the redacted information contained in the June 14th documents, just as chain of custody questions in drug or gun prosecutions can be resolved without having to touch the objects themselves.

Confidentiality

Hsu next argues that the June 14th documents should not be redacted because much of the information about Taxol production technology is no longer confidential. Throughout the course of this case, the defendants have continuously insisted that if they were able to look at the June 14th documents in

²⁰(...continued)

us from the premise that completed offenses had occurred. The Government did not see fit to correct this misapprehension until it advised the Court of Appeals panel that, contrary to what we were led to believe, only attempt and conspiracy are at issue here. It would at a minimum serve the efficient administration of justice if the Government would adhere to equal standards of candor at all levels of the Judicial Branch.

their unredacted form, they could prove that most, if not all, of the information contained in the June 14th documents is in the public domain.

As explained above, due to the highly technical nature of the June 14th documents, we enlisted Dr. Kenneth Snader from the National Cancer Institute as a "technical advisor" to assist us in addressing this issue. See supra. On February 9, 1999, we received Dr. Snader's report on the confidentiality of the redactions to the June 14th documents and had the opportunity to discuss the report with him on several occasions. See Letter from Dr. Kenneth M. Snader, Pharmaceutical Resources Branch, National Cancer Institute, to the Court (Feb. 9, 1999) (distributed to parties and on file with Court). In his report, Dr. Snader describes the voluminous public and private resources he used to review the June 14th documents and to prepare his report.

Dr. Snader explains in the report that the redactions to the June 14th documents can be broken down into two categories.

The first and largest category of redactions in the June 14th documents are "specific examples of experimental conditions." Id. at 1. These specifics contrast with the general descriptions in the patents, and identify, for example, specific media composition for optimization of the process not found in the generalities of the patent application disclosures. In Dr. Snader's opinion, knowledge of these "specific

combinations of values" meets the statutory definition of a trade secret, see 18 U.S.C. § 1839(3), and, therefore, should be kept from public disclosure. See id. As seen infra, a patent application's disclosure of "best mode" does not require disclosure of later or more specific refinements of the art.

The second category of redactions in the June 14th documents are "time line progress descriptions of the efforts made by Phyton Catalytic in their development of a total process for the production of 'taxol' by plant tissue culture." Id. at 2. In Dr. Snader's opinion, these redactions -- showing, e.g., relative taxane production levels from 1991 to 1994 -- are less strictly tied to the practice of the art and do not meet the statutory definition of a trade secret because they do not derive any independent economic benefit or value.²¹

After carefully reviewing the redactions, and consulting with Dr. Snader, we agree with Dr. Snader's conclusion and we will order the Government and BMS to unredact pages 25, 26, 27, 28, 173 and 174 of the June 14th documents.

In addition, in his report Dr. Snader also explains that there are a few instances where BMS redacted "truly public information". See id. at 2, 4 (concluding that pages 32, 33, 180 and 181 should be unredacted). Upon reviewing those pages --

²¹ In his report, Dr. Snader suggests that there are six pages (out of the total of 303 pages) that fall into this category and should be unredacted in their entirety. See id. at 4 (concluding that pages 25, 26, 27, 28, 173 and 174 should be unredacted).

which show biosynthetic and carbon and nitrogen metabolism pathways generally known and presented at open scientific meetings or publications -- we agree with Dr. Snader's conclusion and we will order the Government and BMS to unredact those pages as well.

Finally, Dr. Snader reports that there are four instances of minor inconsistencies in the redactions (e.g. where material is redacted in one portion of the June 14th documents but appears unredacted in another portion of the June 14th documents). These inconsistencies are far more subtle and inferential than the major inconsistencies BMS has already disclosed in the redactions to the June 14th documents, see supra, and we see no need to disclose the four instances of Dr. Snader's extraordinary detective work.²²

While we could end our inquiry here, we feel constrained to address some ancillary arguments raised in defendants' memorandum on confidentiality. First, Hsu argues

²² At the end of his report, Dr. Snader also answers five written questions the defendants posed. In his answers, Dr. Snader once again identifies the relevant patents and public information he reviewed to prepare the report, and concludes that the patents filed by BMS and Phyton disclosed the "best mode" known to the applicants at the time of filing. Finally, Dr. Snader explains in his answer to the fifth question that while some of the technical data in the June 14th documents pre-dates the filing dates of some of BMS's and Phyton's patent applications, there was sufficient information disclosed in the patent applications to enable a person reasonably skilled in the art to practice the claimed invention and that there was no information to suggest that the process disclosed in the patents was not the "best mode" known to the applicants at the time of filing. See id. at 4.

that the Government has delegated its independent judgment over the redaction of the June 14th documents to a private party, BMS, and that the Government should have, at the very least, performed some monitoring or supervision over the redactions. While we agree that the Government has not exercised an iota of independent judgment in the handling of these redactions -- and that such wholesale delegation for so long is at least eyebrow-raising -- after our own independent review of the documents, informed by Dr. Snader's expert canvass, we are confident that the remaining redactions are appropriate. There is no longer any harm, and thus no foul, from the Government's mindless delegation of this task.

Second, Hsu argues that Dr. Thammana's affidavit does not comply with our prior orders because it does not provide any explanation of the reasons for the particular redactions. While this argument is true as far as it goes, it would be impossible for Dr. Thammana to have described the specific reasons for every redaction in the June 14th documents without disclosing much of the information BMS is so anxious to protect. In any event, having just completed the task ourselves, we find that detailed descriptions of the specific redactions would not only take an unreasonable amount of time and effort to complete, but that providing an explanation for each redaction would indeed entail the disclosure of much of the trade secret information itself. Therefore, we do not fault Dr. Thammana for the brevity of his affidavit.

Finally, Hsu argues that because BMS and Phyton have filed several patent applications on Taxol production technology in the 1990s (including patents on the plant cell culture process and cryopreservation), and because much of the information in the June 14th documents pre-dates the filing of these patent applications, a fortiori, the information in the June 14th documents should be public information because once information is revealed in a patent, it loses all trade secret protection. In particular, Hsu argues that if BMS and Phyton really disclosed the "best mode" of their invention in their patent applications as required pursuant to the patent laws, see 35 U.S.C. § 112, then BMS and Phyton can no longer claim that the information in the June 14th documents is a trade secret.

Hsu, in his memorandum to the Court and in his questions to Dr. Snader, misconstrues our role in this case. This case is not a civil suit where the validity of BMS's or Phyton's patents are at issue and where we would probably allow extensive discovery into the technical and financial development of Taxol production technology. Rather, this is a criminal case where two non-parties, BMS and Phyton, are now involved only because they want to protect sensitive technical information -- acquired after the investment of much time and corporate fortune -- from being released to any defendant.

In making his argument, Hsu also misconstrues the patent laws. While those laws require the inventor to disclose an invention in such a manner as will enable one skilled in the

art to make and use the invention in the "best mode" contemplated by the inventor at the time of the application, see, e.g., Chemcast Corp. v. Arco Industries Corp., 913 F.2d 923, 926 (Fed. Cir. 1990), the patent laws do not mandate that once a patent application is filed and approved, the inventor must open his files and fully disclose all of the technical and financial information ever created on the invention.

BMS and Phyton have written documents and memoranda about Taxol production technology that both pre-date and post-date the filing of several patent applications. While BMS and Phyton can no longer claim trade secret protection within the four corners of the patents themselves, see Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 149 (1988), see also 1 Roger M. Milgrim, Milgrim on Trade Secrets § 1.03 at 1-98 (1997) (explaining that information disclosed in a patent is no longer entitled to trade secret protection), after an exhaustive review of the redactions made to the June 14th documents we find that, with the exception of ten pages in the June 14th documents listed above, the redactions were properly made to avoid disclosure of trade secret information within the meaning of the Economic Espionage Act.

Accordingly, as Hsu has not shown how the June 14th documents are material to his defense and, further, because we find that the redacted information in the June 14th documents contains trade secret information within the contemplation of the Economic Espionage Act, we reject his request for full disclosure

of the June 14th documents or, alternatively, that we issue a protective order limiting access to the unredacted June 14th documents only to defense counsel and defense experts.²³

An Order follows.

²³ We are grateful to the National Cancer Institute for affording Dr. Snader with leave to assist us in this difficult undertaking, which proved to be a most time-consuming enterprise. As to Dr. Snader, his indefatigable and careful analysis has been invaluable to us, and we express our profound thanks to him for his extraordinary service to the Court, as well as for his good cheer in a project well beyond his usual grist.

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA : CRIMINAL ACTION
 : :
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 : :
KAI-LO HSU a/k/a/ James Hsu : NO. 97-323-01

ORDER

AND NOW, this 16th day of February, 1999, upon consideration of defendants' memoranda on materiality and confidentiality, and the Government's response thereto, and for the reasons stated in the Memorandum attached hereto, it is hereby ORDERED that the Government shall by February 26, 1999 provide a copy of the redacted June 14th documents to the defendant with the following pages unredacted in their entirety: 25, 26, 27, 28, 32, 33, 173, 174, 180, 181.

BY THE COURT:

Stewart Dalzell, J.