FD-302 (Rev. 10-6-95)

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 12-15-2008 BY 60324 uc baw/dk/cl [redacted]

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 08/19/2005

On August 18, 2005, [redacted], date of birth [redacted], social security account number [redacted] of [redacted], home telephone [redacted] cellular telephone [redacted] e-mail address [redacted] was interviewed at [redacted] residence. After being advised of the identity of the interviewing agent, and the purpose of the interview, [redacted] voluntarily provided the following information:

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[redacted]

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[redacted]

[redacted]

[redacted]

[redacted]

Investigation on 08/18/2005 at [redacted]

File # 279A-WF-222936-USAMEIID-1411 Date dictated

by SA [redacted]

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency; it and its contents are not to be distributed outside your agency.

[redacted]

[redacted]

In [redacted] applied for a [redacted] position online. [redacted] was subsequently offered the position of [redacted] United States Army Medical Research Institute for Infectious Diseases (USAMRIID), Fort Detrick, Frederick, Maryland. [redacted] immediately accepted the position. [redacted] saw this as a very rare opportunity to learn and do pure research. [redacted] worked under [redacted] This was a genuine research facility where you are intended to improve your laboratory techniques and knowledge. On a regular basis, [redacted] and [redacted] would come up new ideas, and [redacted] would go to the lab and apply what they had discussed. [redacted] worked with *Bacillus anthracis*, AMES strain, [redacted]

Upon [redacted] arrival they were completing a [redacted] laboratory. Unlike at USAMRIID, all work here was strictly controlled. [redacted]

[redacted]

[redacted]

As previously stated, [redacted] worked with *B. anthracis*, AMES strain, while at [redacted] USAMRIID. [redacted] also worked with *B. anthracis*, Volume and Pasteur strains, while at USAMRIID. [redacted] worked with both the living organism and its DNA. The organisms were always vegetative, never working with the spores. [redacted] it was called the [redacted] is unsure if the *B. anthracis* (AMES) was already at [redacted] or if it had been acquired shortly after. If it was received [redacted] there would be a chain of custody reflecting it had been received, and from where it had come. At both locations, there was a record maintained of all frozen inventories of the organisms. There was a record of autoclaving which should show a 1:1

correlation of samples removed from the freezer to those destroyed/sterilized. Every autoclave session had a control spore strip present which would be used to make sure the autoclave cycle was completed. The chain of custodies, frozen logs, and autoclave logs were all handwritten in books, not computerized. Similar records were maintained at USAMRIID.

[redacted] noted that at [redacted] USAMRIID [redacted] there were no general logs maintained which would show how much organism was grown from the samples, or records to reflect how much of the grown organism was used in testing, and then subsequently destroyed. Some reconstruction of this could be done by reviewing the laboratory notebooks of all of the researchers who worked with the suspect agents.

[redacted] when stock samples were removed from the freezer, they were isolated via streak plates and grown in broth. Then for long term storage, the organism was spun down, placed in a tube with glycerol, quick frozen in a dry ice/ethanol solution, then placed in a -70 freezer. [redacted] never lyophilized the organisms. Lyophilization would only be necessary if an organism was being stored for an extremely long time.

[redacted]

Organisms were never distributed to researchers outside of the facility [redacted] was responsible for the organisms, though unsure of their origin, used in [redacted] Whereas [redacted] would have been given [redacted] working organisms by [redacted] at USAMRIID.

Upon exiting the laboratory at USAMRIID it was a one way exit. The individual would leave the lab, discard their clothing into a bin, then move into an anti-bacterial shower. After the shower, the worker would exit to the locker room where he/she would get dressed. As you moved from one area to another the "one-way" door would close behind you preventing you from re-entering the last area. The only way to remove and organism from this environment would be through placement in a body orifice. Though no cameras were seen, [redacted] was told there were cameras everywhere watching your activities.

[redacted]

[redacted] organisms were not left out overnight. While growing they were placed always placed in the incubators. When storing the organisms, the vials were placed in the -70 freezer.

[redacted]

[redacted]

[redacted] never attempted, nor did work involving the drying of *B. anthracis*. [redacted] always worked with liquid cultures, [redacted] never isolated, grew, or dried *B. anthracis* spores. The isolation procedure [redacted] used was always used because it was easy to perform,

had good results, and the organism easily survived the process. [redacted] never saw dry samples of organisms at [redacted] USAMRIID.

[redacted] At USAMRIID, the organisms were examined microscopically.

The *B. anthracis* AMES strain was full characterized by ATCC [redacted]

[redacted] worked with Ivins at USAMRIID. Ivins did a lot of "spore work". Ivins and [redacted] were responsible for all of the *B. anthracis* spore production at USAMRIID. Spore production of sporulating organisms can be done with the information available in the literature. [redacted] Ivins make very large spore preps. [redacted] was very knowledgeable of spore production, but [redacted] never saw him make the preps. Ivins would determine the LD-50 of pathogenic organisms with mice. Ivins used BALB-C and CBA-J mice, per the publications. Because of his work with spores, Ivins would do weekly spore check swipes of the bacteriology suites, and there would occasionally be a small contamination somewhere in the lab (e.g. phone, doorknob).

[redacted]

[redacted] was not aware of anyone lyophilizing *B. anthracis* at [redacted] USAMRIID.

[redacted] suggested that most of the individuals with unique knowledge of *B. anthracis* spore preps could be determined by doing a query on [redacted] at [redacted]

As previously stated, there were occasions at USAMRIID when there were positive contamination hits for spore presence. These were rare. This only occurred when spore preps were made at USAMRIID for the "mice studies".

At USAMRIID, all of [redacted] work was in [redacted], suite [redacted] The main lab was in room [redacted] with the autoclave in the back of the lab, and the primary egress/ingress between [redacted] and [redacted]

[redacted] never worked or was in USAMRIID building [redacted] could not describe anything present in that building.

Cards and keypads were required at USAMRIID. "Piggybacking" never occurred with, or was observed by [redacted] This was against the established security protocols.

[redacted]

"Piggybacking" never occurred with [redacted] and was never observed. As at USAMRIID, this would be in violation of the strict security protocols. [redacted]

[redacted]

[redacted] believes that the only way someone could remove a select agent from [redacted] labs would be by smuggling it out via placement in a body cavity. Because of the exit protocols from the labs at [redacted] USAMRIID, [redacted] could think of another way to get the organism out. [redacted]

always paired which would make it more difficult, and a body orifice would still be necessary, to get the organism out of the lab.

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[redacted] is not aware of anyone who ever attempted to remove a select agent from the labs in which [redacted] worked. [redacted] is not aware of anyone who ever joked or suggested that they might attempt to remove a select agent from the lab. [redacted] was not aware of anyone who ever suggested that they might make a select agent for use in an improper fashion. [redacted] added that if someone was to remove a select agent for the purpose of anthrax letters, they could have used the much more virulent "New Hampshire" anthrax strain. This New Hampshire strain has a theoretical mice LD-50 of 0.5 organisms.

[redacted] was not aware of anyone with the access and ability to create and handle dangerous biological agents who expressed hostile attitudes toward any political organization, the media, or others. [redacted] did identify that being in an educated "liberal" environment people were often opinionated about politics, etc. However, no one [redacted] has ever worked with would [redacted] identify as "hostile", or remotely suggestive of doing such a thing.

[redacted] is not aware of anyone [redacted] would think responsible for the mailings of the anthrax letters. [redacted] as a subject of the investigation. [redacted] may have performed legitimate work somewhere with anthrax. [redacted] If [redacted] was doing legitimate work, [redacted] would have been inoculated, and followed up with regular boosters. This would result in a high antibody titer. If [redacted] was not previously vaccinated then the presence of any antibody titer would be suspect.

No one who [redacted] worked with while at USAMRIID [redacted] were ever "lax" in the handling of the dangerous organisms. [redacted] did not have, or knew of, anyone inappropriately interested in the pathogenic organisms.

[redacted] was not aware of anyone at USAMRIID, which was like an academic facility, [redacted] which was working for a client with work orders that dictated the work performed, who was rumored to be interested in gaining access to biological or chemical agents, or the means to produce them.

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Growing the *B. anthracis* organism is easy. [redacted]

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In addition to the difficulty of creating a flowing powder of the organism, the individual would have needed to grow hundreds of liters in order to have the amount of organism used in these mailings. Someone would have noticed this happening. If done outside of a level III laboratory, [redacted] believed that there would have been dead animals in the area of the production of the organism (e.g. a garage or residence). It would be difficult to control the size of the isolation without any of it getting out, and animals are much more susceptible to *B. anthracis* than are humans. There are very few people out there who would have the access and the ability to produce this isolation.

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[redacted] recalled that the FBI had sent out an e-mail to the 35,000 ASM membership asking for assistance in how it could have been done, or who may have done it. Some of the scientists were offended by the request. Some of the scientists failed to see the big picture and were resistant to the thought that one of their own could have done this act.

[redacted] was not aware of anyone who expressed a special interest in getting around established forensic techniques. [redacted] added that there are, "...too many genetic markers to get around it."

[redacted] does not have any personal associations with Trenton, New Jersey, Princeton, or any other areas of New Jersey. [redacted]

[redacted] can not recall ever being in Trenton, New Jersey.

[redacted] was working at [redacted], and living in [redacted] during September and October 2001. [redacted] is confident that [redacted] was [redacted] the anthrax letter events. Due to the shutting down of the airlines following 09/11 [redacted] does not believe [redacted] would have been able to travel [redacted]

There were established Standard Operating Procedures (SOPs) for the decontamination of Class II and Class III biosafety cabinets while at USAMRIID [redacted]. These SOPs were based upon CDC guidelines for biosafety. The procedure was as follows: everything was removed from the hood, it was then wiped down with 70% ethanol or 10% bleach, the sash was then closed and the germicidal lamp was left on for approximately 10 minutes.

[redacted] has never been in the virology suites at USAMRIID. [redacted] did not know what decontamination procedures were used in the virology suites, or whether it smelled of bacterial decontamination agents. At USAMRIID, in the bacterial suite, paraformaldehyde decontamination was done approximately once every month or two. There was usually a couple of days notice that this was going to occur. The paraformaldehyde decontamination was also done at Battelle, but only on a couple of occasions. [redacted]

[redacted] regularly used plastic containers at [redacted] USAMRIID [redacted] (plastic exclusively). Samples [redacted] were stored in Falcon tubes and microcenterfuge tubes. [redacted] was also provided plastic reagent bottles. [redacted] was unfamiliar with "sterilite", and could not say whether boxes were ever missing while at USAMRIID. If it occurred, it was never of such a concern that [redacted] was informed, or asked about, them being missing.

While at USAMRIID [redacted] was not aware of any work being conducted in an "unofficial" or "off the record" manner. All work in [redacted] laboratories was documented in lab notebooks. At USAMRIID, [redacted] work product was passed through a "pass through box" with a germicidal lamp, and then entered in [redacted] lab notebook. All of [redacted] work was reviewed with [redacted] These notebooks were maintained on the shelves in the work area, and were

not secured in any particular way. These notebooks remained at USAMRIID after [redacted] departure.

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[redacted]

[redacted] was shown a photocopy of a prestamped envelope. [redacted] never purchased any of the pre-stamped envelopes for either [redacted] or for someone else. [redacted] found them to be a short sighted purchase with the regularly changing postage rates.

[redacted] was not with USAMRIID [redacted] at the time of the Amerithrax incidents. [redacted] never came in contact with the anthrax laced letters, and was never asked to perform analytical work in association with this case.

[redacted] first heard of [redacted] from [redacted] with this case. [redacted] never worked with [redacted] or recalled seeing [redacted] at USAMRIID.

[redacted] was never asked to host a foreign visiting scientist at either USAMRIID [redacted]

[redacted] has never heard of the Aeromedical Isolation Team (AIT). [redacted] was not a member of the AIT.

[redacted] stated [redacted] could be re-contacted anytime concerning this matter, and [redacted] offered [redacted] assistance as a consultant in the Amerithrax matter.

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HEREIN IS UNCLASSIFIED
DATE 12-15-2008 BY 60324 uc baw/dk/cls

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The following investigation was conducted by Special Agent (SA) [redacted] of the Federal Bureau of Investigation on September 28, 2005:

As previously reported former United States Army Medical Research Institute of Infectious Diseases employee [redacted] Social Security Account Number (SSAN): [redacted] Date of Birth (DOB): [redacted] had access to the Ames strain of *Bacillus anthracis* (*Ba*) will employed at USAMRIID. A query of available USAMRIID keycard access records for [redacted] met with positive results. USAMRIID keycard access records indicated keycard activity for [redacted] during the period of [redacted] through [redacted] USAMRIID keycard access records also indicated multiple keycard activities for [redacted] at USAMRIID locations to included, but not limited to: [redacted] Keypad, [redacted] Keypad, [redacted] Keypad, and [redacted] keypad. Writer opines [redacted] keycard activity is consistent with [redacted] personnel.

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A query of the [redacted] database for [redacted] met with positive results. [redacted] is listed as a co-investigator along with other USAMRIID personnel to include but not limited to: [redacted], and Bruce Ivins on protocol [redacted]. Briefly protocol [redacted] entails the [redacted] in USAMRIID building [redacted] for the collection of positive control specimens. [redacted] is further described as [redacted]

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The last known address for [redacted] was listed as: [redacted] This address is incorrect. A internet search for [redacted] indicated this was the [redacted] for the [redacted] A query for [redacted] on internet address: [redacted] met with positive results.

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[redacted] is further described as:

LAST NAME:
FIRST NAME:
MIDDLE NAME:
SEX:
RACE:
HEIGHT:

[redacted]

[redacted] 2711.INS [redacted]

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WEIGHT:
EYE COLOR:
HAIR COLOR:
DOB:
SSAN:
RANK:
TITLE:

WORK ADDRESS:

EMAIL ADDRESS:
WORK TELEPHONE:

(Rev. 01-31-2003)

~~SECRET~~/NOFORN

DECLASSIFIED BY 60324 uc baw/dk/cls
ON 12-15-2008

FEDERAL BUREAU OF INVESTIGATION

Precedence: ROUTINE **Date:** 09/28/2005

To: Washington Field
Inspection **Attn:** IIC [redacted] b6 b7C

From: Washington Field
AMX-3
Contact: SA [redacted] b6 b7C

Approved By: [redacted]

(U) **Drafted By:** [redacted] b6 b7C

Case ID #: ~~(S)~~ 279A-WF-222936-USAMRIID ✓ (Pending) - 147

Title: (U) AMERITHRAX;
MAJOR CASE 184

Synopsis: (U) To document additional individuals who may have had access to the Ames strain of *Bacillus anthracis (Ba)* at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID).

~~(S)~~ ~~**Derived From : G-3**~~
~~**Declassify On: X1**~~

Details: (U) On 5/18/2000 at 10:40:23 a.m., Dr. Bruce Ivins sent an e-mail to [redacted] and [redacted] This e-mail, which was identified by SSA [redacted] was found among archived e-mail on 35 USAMRIID computer back-up tapes. In the afore-mentioned e-mail, Ivins provided a list of individuals who had worked on the anthrax vaccine, but were no longer at USAMRIID. Ivins list was compared with a list of individuals known to have had access to the Ames strain of *Ba*. The names of the following individuals were not located on the list: [redacted]

(U) ACS was searched in regards to the above-mentioned individuals with the following results:

~~SECRET~~/NOFORN

[redacted] 26605.ec

(U) To: Washington Field From: Washington Field
Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

(U) [redacted]

(U) Interview (279A-WF-222936 - POI, Serial 1404) of Bruce Ivins.

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(U) Ivins advised [redacted] was [redacted] responsible for helping Bioport with potency testing for the anthrax vaccine. [redacted] members were Ivins [redacted] and [redacted] Ivins noted [redacted] now works at [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 846) of [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 674) of [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 507) of [redacted]

(U) [redacted] believes [redacted] has worked with anthrax.

(U) Interview (279A-WF-222936 - USAMRIID, Serial 469) of [redacted]

(U) [redacted] indicated that [redacted] worked with *Ba*.

(U) Interview (279A-WF-222936 - POI, Serial 766) of [redacted]

(U) To: Washington Field From: Washington Field
Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

(U) [redacted] stated [redacted] worked and experimented with bacteria. b6 b7C

(U) Interview (279A-WF-222936 - USAMRIID, Serial 27) of [redacted]

(U) [redacted] worked with anthrax in the [redacted] at USAMRIID before [redacted] departure.

(U) Interview (279A-WF-222936 - 302, Serial 2660) of [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - 302, serial 298) of [redacted]

(U) [redacted] advised [redacted] is a specialist in anthrax.

(U) Interview (279A-WF-222936 - [redacted] Serial 264) of [redacted] b6 b7C

(U) [redacted] at USAMRIID studied *Ba* and worked in room [redacted] in building [redacted]

(U) Interview (279A-WF-222936 - 302, Serial 904) of [redacted] b6 b7C

(U) [redacted] conducts research with *Ba*.

(U) Interview (279A-WF-222936 - 302, Serial 134) of [redacted]

(U) [redacted]

(U) EC (279A-WF-222936 - USAMRIID, Serial 1131) re: Laboratory Notebook Review Project.

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(U) Notebook [redacted] revealed that on May 8, 2003, Ames spores were provided to [redacted]

(U) A folder entitled "Harvesting Spores - + GLP Spore [redacted] contained a copy of an e-mail from Bruce Ivins to various Principal Investigators (PI) [redacted] The e-mail calculated the amount of spores needed for aerosol challenges of 1000 rabbits and 200 monkeys.

(U) EC (279A-WF-222936 - MAIN, Serial 6263) re: Laboratory Notebook Review Project.

(U) Notebook number [redacted] assigned to [redacted] contained entries by Ivins regarding production of *Ba* Ames at Dugway. [redacted] was listed as the [redacted] for this project.

(U) EC (279A-WF-222936 - USAMRIID, Serial 882) re: Laboratory Notebook Review Project.

(U) An e-mail dated May 1, 1997 from Ivins to various principal investigators's [redacted] was found in notebook [redacted] In the e-mail Ivins discusses purifying the [redacted] spores with an ultimate viability of 4 times ten to the twelfth.

(U) On October 9, 1997 Ivins sent another e-mail discussing the Dugway spores. Ivins advised the preparation using Dugway spores would be known as RMR 1029.

(U) [redacted]:

(U) Interview (279A-WF-222936 - USAMRIID, Serial 1088) of [redacted]

[redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 1024) of [redacted]

[redacted]

(U) To: Washington Field From: Washington Field
Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

(U) EC (279A-WF-222936 - USAMRIID, Serial 1131) re: Laboratory Notebook Review Project. b6 b7C

(U) [redacted] name was mentioned in notebook number [redacted] in relation to [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - 302, Serial 635) of [redacted]

(U) [redacted] advised [redacted] was no longer at USAMRIID and [redacted] was unaware of [redacted] whereabouts.

(U) EC (279A-WF-222936 - MAIN, Serial 1115) re: Interviews conducted at USAMRIID.

(U) [redacted] was listed as "not at USAMRIID".

(U) [redacted]

(U) Interview (279A-WF-222936 - 302, Serial 961) of [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - 302, Serial 3489) of [redacted]

[redacted] b6 b7C

advised [redacted] has never worked with an animal exposed to anthrax, nor has [redacted] conducted a necropsy of an anthrax infected animal. [redacted] did have access to the hot suites, including the hot side of building [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 483) of [redacted]

(U) Approximately one month after the anthrax mailings, [redacted] showed [redacted] and Bruce Ivins several jars containing what [redacted] described as simulants. [redacted] Ivins stated the vial containing a substance that looked like "smoke in a glass" was most similar to the evidence.

To: Washington Field From: Washington Field
(U) Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

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(U) Interview (279A-WF-222936 - Lab, Serial 132) of [redacted]

(U) [redacted] was asked about [redacted] and others submitting to a polygraph, thus allowing them to be "read in" to the AMERITHRAX case. [redacted] advised each individual would have to agree to the polygraph voluntarily.

(U) Interview (279A-WF-222936 - USAMRIID, Serial 935) of Bruce E. Ivins.

(U) Ivins advised [redacted] Ivins did not mention what type of material [redacted] was using.

(U) Interview (279A-WF-222936 - USAMRIID, Serial 1269) of [redacted]

[redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 508) of [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - [redacted] Serial 267) of [redacted]

[redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 1148) of [redacted]

[redacted]

To: Washington Field From: Washington Field
(U) Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

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(U) [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 499) of Bruce Ivins.

(U) Ivins advised [redacted] isolated the Ba sample called Texas 2 from sheep liver.

(U) EC (279A-WF-222936 - USAMRIID, Serial 882) re: Laboratory Notebook Review Project.

(U) On page four of notebook [redacted] Ivins detailed a procedure in which he grew five liters of Ba (strain unknown) to give to [redacted]. None of the rats died after being injected with this preparation and Ivins speculated he had harvested the Ba too early. On page 18, one liter of the Ristroph medium was again inoculated, and the supernatant was saved and given to [redacted]

(U) EC (279A-WF-222936 - [redacted] Serial 957) re: [redacted] of [redacted] b2 b7E b6 b7C

(U) [redacted] co-authored the following article: [redacted] Ivins BE; [redacted] b6 b7C

(U) [redacted]:

(U) Interview (279A-WF-222936 - USAMRIID, Serial 1065) of [redacted]

[redacted]

(U) EC (279A-WF-222936 - USAMRIID, Serial 1131) re: Laboratory Notebook Review Project.

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(U) [redacted] name was found in a folder entitled [redacted] and [redacted] assisted Ivins with a protocol involving testing guinea pigs with [redacted] strains, using *Ba* protective antigen as a prototype vaccine against human anthrax.

(U) [redacted]

(U) EC (279A-WF-222936 - USAMRIID, Serial 1131) re: Laboratory Notebook Review Project.

(U) It should be noted there were no references to an individual named [redacted] at USAMRIID. However, a reference was made to an individual named [redacted]. That reference follows below.

[redacted]

(U) [redacted]

(U) Insert (279A-WF-222936 - 302, Serial 3745) re: ACS checks run on various [redacted] employees.

(U) The name [redacted] was found on a list of [redacted]

(U) Interview (279A-WF-222936 - POI, Serial 1299) of [redacted]

(U) [redacted] was listed as a co-author with Bruce Ivins and [redacted] on a paper published in [redacted] titled [redacted] Ivins and [redacted] immunized the animals, and Ivins conducted aerosol challenges. [redacted] eventually developed the capability to generate [redacted] own protein using a procedure named [redacted] worked at USAMRIID [redacted]

(S) [redacted] re: Request for [redacted] anthrax researchers.

To: Washington Field From: Washington Field
Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

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(U) [redacted]

(U) [redacted] Serial 177437 re: anthrax research and [redacted]

(U) A new anthrax vaccine was developed by [redacted] that is less toxic and longer lasting. The vaccine is ready for commercial development and clinical trials will begin soon. The research team created harmless mutant forms of the three key proteins that together make anthrax fatal. A five liter capacity fermenter can now produce approximately five grams of protective antigen per liter.

(U) EC [redacted] Serial 109) re: [redacted]

(U) [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 489) of [redacted]

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(U) [redacted]

Additionally, [redacted] worked with Bruce Ivins and [redacted] to [redacted]

(U) Interview (279A-WF-222936 - USAMRIID, Serial 266) of [redacted]

[redacted]

(U) Interview (279A-WF-222936 - POI, Serial 168) of source.

(U) Source described [redacted] as an associate of [redacted]

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(U) [redacted]

(U) Interview (279A-WF-222936 - 302, Serial 1869) of Bruce Ivins.

(U) [redacted] worked with vaccine strains of *Ba*. [redacted]

(U) EC (279A-WF-222936 - USAMRIID, Serial 1309) re: Unauthorized environmental surveys conducted by Ivins.

(U) On July 7, 2002, Ivins sent an e-mail to [redacted] stating his most recent swabbing was the third time he had found virulent anthrax outside of the hot suites. Ivins advised in the early 80's [redacted] had injected and killed guinea pigs with the Vollum 1B strain of anthrax. After the death of the guinea pigs, all of the used bedding had to be removed from the suite. Since the autoclave was not working, paraformaldehyde was used on the bedding, and everything was sent to cagewash for cleaning. Ivins advised prior to the bedding being shipped to cagewash, he took and plated a sample. Ivins discovered that the top of the bedding was sterile, but the lower layers were contaminated with anthrax and other bacteria.

To: Washington Field From: Washington Field
Re: ~~(S)~~ 279A-WF-222936-USAMRIID, 09/28/2005

(U) b6 b7C

~~(S)~~ EC (279A-WF-222936 [redacted] [redacted] re: use of or studies on *Ba*.

(U) ~~(S)~~ [redacted] b6 b7C [redacted] tasked military services and select defense agencies to review their records and identify any studies etc. using various forms of *Ba*.

(U) This information is being documented so that appropriates follow-up interviews can be conducted.

♦♦

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FD-302 (Rev. 10-6-95)

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 10/03/2005

[redacted] On September 21, 2005, [redacted] born [redacted], Social Security Account Number [redacted] [redacted] U.S. Army Medical Research Institute of Infectious Disease (USAMRIID), 1425 Porter Street, Ft. Detrick, Maryland 21702, phone number [redacted] was interviewed at [redacted] place of business. After being advised of the nature of the interview and the identity of the interviewing agents, [redacted] provided the following information:

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[redacted] used to get anthrax from BRUCE IVINS, [redacted] was shown two (2) photos of a single 1.25 mL vial labeled [redacted] Ames Spores," and a single photo of the 50 mL conical tube inside which the vial was found. [redacted] This photo was shown to [redacted] by Special Agent (SA) [redacted] This tube and vial were seized from USAMRIID Building [redacted] room [redacted] by FBI SAs during a consent search authorized by the Commander of USAMRIID. [redacted] and this was not the sample that [redacted] got from IVINS in [redacted]

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[redacted] believes this sample has already been submitted to the FBI *Bacillus anthracis* Ames Repository (FBIR).

[redacted]

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[redacted] thinks that the spores contained in the letters have a morphology different from *Ba* isolated from an infected animal. Samples isolated from infected animals often have a medusa-head morphology, and samples that have been passed in culture will [redacted]

Investigation on 09/21/2005 at Frederick, Maryland

File # 279A-WF-222936-USAMRIID -418 Date dictated N/A

SA [redacted]

by SSA [redacted]

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have morphologies that are somewhat asporogenic and lack the medusa-head appearance.

[redacted] stated that IVINS uses 1% phenol as a preservative in his spore preparations. [redacted] There has never been a fermentor Building 1412 and *Ba* Ames has never been fermented at USAMRIID. It would have been too dangerous to have grown *Ba* Ames in a fermentor.

[redacted] was in Building [redacted] while [redacted] was at USAMRIID.

[redacted] does not believe that [redacted] was ever in the Bacteriology Division at USAMRIID. Specifically, [redacted] does not believe that [redacted] was ever in the [redacted] and [redacted] containment suites located in building [redacted] of USAMRIID.

[redacted] does not know anyone referred to as [redacted] or [redacted] but may recognize [redacted] if [redacted] was shown a picture.

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The photos of the 1.25 mL vial and 50 mL conical tube were placed in the corresponding 1A envelope. This sample is known to the writer to correspond to FBIR sample [redacted]

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FD-302 (Rev. 10-6-95)

FEDERAL BUREAU OF INVESTIGATION

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Date of transcription 10/13/2005

On October 12, 2005, [redacted] born [redacted], Social Security Account Number [redacted] U.S. Army Medical Research Institute of Infectious Disease (USAMRIID), 1425 Porter Street, Ft. Detrick, Maryland 21702, phone number [redacted] cellular phone number [redacted], was interviewed at [redacted] place of business. After being advised of the nature of the interview and the identity of the interviewing agents, [redacted] provided the following information:

Prior to the interview, [redacted] sent SA [redacted] a three (3) page document [redacted] b6 b7C

[redacted] This document was sent to SA [redacted] by e-mail at [redacted] and brought to the interview for reference. At the conclusion of the interview [redacted] initialed [redacted] and dated each page of the document and it has been placed in the corresponding 1A envelope. b6 b7C

[redacted]

Investigation on 10/12/2005 at Frederick, Maryland b6 b7C

File # 279A-WF-222936-USAMRIID-1423 Date dictated N/A

by SA [redacted]

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[redacted]

[redacted]

[redacted]

[redacted] Both of these preps were produced using a spore preparation given [redacted] by BRUCE IVINS. [redacted] refers to a *Ba* Ames spore prep given to her by IVINS in 1987 as [redacted] original Ames. When this original Ames spore prep was examined all of the *Ba* colonies appeared uniform and did not exhibit either the second layer of white growth or the individual colonies that were raised, tan in color and asporogenic. [redacted] believes that at the same time [redacted] received *Ba* Ames from IVINS, [redacted] received *Ba* Vollum strain from him as well.

[redacted]

[redacted]

FD-302 (Rev. 10-6-95)

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 10/28/2005

[redacted], date of birth [redacted] social security number [redacted] home address [redacted] home telephone number [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), work telephone number [redacted]. After being advised of the identities of the interviewing agents and the purpose of the interview, [redacted] provided the following information: b6 b7C

[redacted] began working at USAMRIID in [redacted] b6 b7C

While first assigned to the [redacted] Division until [redacted] worked in Building [redacted] suites [redacted] and in Building [redacted] during aerosol challenges. [redacted] grew cultures of *Bacillus anthracis (Ba)* in suite [redacted] and [redacted] engaged in strain studies with guinea pigs there. [redacted] worked in Building [redacted] room [redacted] during aerosol challenges. [redacted] did not work in any laboratories in [redacted] prior to and through September 2001. b6 b7C b2 b7F

Ba Ames from IVINS' collection was normally stored in Building [redacted] suite [redacted] Ames and other agents were stored in cryoboxes that were not labeled on the outside. Ames was brought to Building [redacted] room [redacted] only on the morning of a day on which it was to be used for an aerosol challenge. Just after the challenge, plates of post-challenge material were counted. [redacted] only brought a few supplies to building [redacted] for their work, including media plates, spreaders and gloves. Ames was only in room [redacted] on the day of the aerosol challenge. All left over material was autoclaved out at the end of the day, including post-challenge material and leftover Ames that was not used.

[redacted]

Investigation on 10/19/2005 at Frederick, Maryland

File # 279A-WF-222936-USAMRIID - 1425 Date dictated 10/21/2005

[redacted] Postal Inspector

by [redacted] Postal Inspector

b6 b7C

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[redacted] did not recall Ames having been stored in any of the following rooms or suites in Building 1412: 112, 222, 211 and 212. Room 210, the walk-in cooler, did not contain Ames from IVINS' laboratory. [redacted] did not know what room 112 was used for. Room [redacted] was used for [redacted] work, where blood and sera were tested for antibodies. [redacted] did not work in suite 211, and [redacted] did not work in room 212, which was [redacted] laboratory, until after September 2001. [redacted] was not aware of Ames having been stored in any of the hallways of building 1412.

[redacted] did not recall Ames having been stored in Building 1425, suites AA3, AA4 or AA5, or rooms AR105 and AR106. [redacted] had never heard of Ames having been stored in any hallways of Building 1425. To [redacted] knowledge, there were no refrigerators or freezers in the hallways of 1425. When Ames was taken out of a containment area, such as suites [redacted] it was carried directly to another containment area, such as room [redacted] in Building [redacted]. Ames that was not in a containment area was always in someone's possession.

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When growing spores for challenges, IVINS' group used seed stock from the original Ames slant. At one time, material that had been grown from the original slant was sent to Dugway Proving Ground for quick, mass production of spores. There was no real difference between the spores made at USAMRIID and those made at Dugway; Dugway was simply able to produce spores more quickly. There was a lot of work involved in the preparation of spores, including growth in a flask and the use of Renografin. IVINS' group used the material received back from Dugway, as well as Ames they had grown themselves, for aerosol challenges. [redacted] knew that the Dugway material was used for aerosol challenges, but [redacted] did not specifically remember any one challenge where the Dugway material was used. [redacted] remembered that several rabbit challenges were conducted with Ames. [redacted] also recalled that challenges were conducted using Vollum 1B and possibly the Sterne strain.

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[redacted] vaguely remembered that Building [redacted] suite [redacted] was decontaminated and closed for renovation, and that it came back up sometime in 2002. [redacted] did not remember suite [redacted] ever having been closed for renovations, nor did [redacted] remember being involved in the inventory of items in suite [redacted] or the movement of samples or equipment from suite [redacted] to suite [redacted]

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[redacted] stated that other scientists were given Ames from IVINS' group, including the Dugway material, to use in their own

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experiments. Those who may have been given Ames from IVINS' group were [redacted] and [redacted]. Virologists could have used bacteria such as Ames to challenge animals for vaccine comparison studies. They probably would have taken Ames back to the virology suites in which they worked, unless it was to be used for aerosol challenges. A virologist who wanted to obtain *Ba* from the Bacteriology Division would probably be required to go through the Division Chiefs, and there would be paperwork involved. Virologists may have also used other bacteria such as Plague or Staphylococcal Enterotoxin B.

When asked [redacted] opinion of the case, [redacted] stated that [redacted] thought the mailings were conducted and covered up by the government. [redacted] stated that the government had done it before with *Bacillus globigii* in California. [redacted] also stated that [redacted] knew the FBI was looking at BRUCE IVINS, and that [redacted] did not believe he had anything to do with the mailings. [redacted] said that IVINS would never want to hurt anyone, and [redacted] would be surprised if it turned out that he was involved. [redacted] stated [redacted] did not know if the material from the mailings came from USAMRIID.

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The following investigation was conducted by Special Agent [redacted] on 11/8/2005: b6 b7C

On 2/22/2005, BRUCE E. IVINS sent an email from his United States Army Medical Institute of Infectious Diseases (USAMRIID) account to [redacted] at [redacted]

In the email [redacted] asks IVINS the meaning behind his America Online (AOL) screen name of kingbadger7@aol.com. The following is IVINS' response to [redacted]

> *During the First Gulf War in 1990-1991, there was a secret army project, called "Project Badger," in which researchers tried to find out if they could dilute the currently licensed human anthrax vaccine and still have it remain efficacious. The war caught people here off-guard, and we apparently didn't have enough full-strength vaccine for all the troops (400,000+) going over there. Since it was believed that Iraq had anthrax as a biological weapon, it was deemed of high importance to make sure that the troops had both vaccines and antibiotics, should the agent be used against them. Years afterward, the project was revealed and discussed in an article in "Vanity Fair." We had a lot of laughs about it, since we in our division had been left in the dark about the whole thing, especially the part about it being named "Project Badger." I was doing a lot of anthrax vaccine research at the time (the late 1990s), and one day our division chief walked in and said, "I need to talk to King Badger!" The name stuck. So, when I got an AOL account, I tried to get "KingBadger" as my handle, but somebody else already had it. So I settled for "Kingbadger7." If you'd like to read more about the subject, you might check this out: http://www.vaccine-a.com/excerpt.html.*

[redacted] 42 [redacted]

A review of www.vaccine-a.com/excerpt revealed an excerpt from the book *Vaccine-A*, written by Gary Matsumoto. The excerpt discusses the potential use an oil based adjuvant known as squalene to boost the effectiveness of the new anthrax vaccine. Matsumoto writes that oil adjuvants cause autoimmune diseases. The excerpt mentions several past and present USAMRIID researchers including [redacted] IVINS and [redacted]. There is no mention of Project Badger in the excerpt.

[redacted] [redacted]

The excerpt states that as of the early 1990s, IVINS and the other researchers at USAMRIID had four viable prototypes of a single shot anthrax vaccine ready for clinical trials. The last sentence of the excerpt reads, "All Fort Detrick needed now was the right time and place to test them." This sentence apparently alludes to the Persian Gulf War as the time and the place to test the prototypes.

A copy of the excerpt found at the abovementioned website is attached to and made part of this document.

A www.google.com search using the terms "badger and anthrax and vanity fair" revealed an article titled, "The Pentagon's Toxic Secret" authored by Gary Matsumoto.

The article contends that approximately 150,000 Gulf War soldiers received a then secret vaccination known as "Vaccine A", which was in actuality an anthrax vaccine. Dr. PAMELA ASA, Ph.D. has conducted studies on numerous Gulf War veterans and she believes that the Gulf War Syndrome is the result of a squalene adjuvant used in Vaccine A. The articles references "Project Badger" as an operation that may have developed a "modified version of its ED.A.-licensed anthrax vaccine." Project Badger was made up of 14 officers from the Army, Navy and Air Force. According to the article, Project Badger's first meeting was on October 9, 1990 at Fort Detrick, Maryland, the site of USAMRIID. The purpose of the meeting was to "surge" the production of vaccines for anthrax and botulinum toxin.

According to the article, Project Badger then contracted with Lederle-Praxis Biologicals of Pearl River, New York to produce the additional anthrax vaccine with the help of the National Cancer Institute's Frederick (Maryland) Cancer Research and Development Center (NCI). Both Lederle and NCI were not licenced to produce the vaccine. According to the article, Lederle and NCI would produce the vaccine and ship it to the only licensed manufacturer of the vaccine, Michigan Biologic Products Institute (MBPI) (purchased later by Bioport, Inc.) who would then bottle, label and store the vaccine. The leader of Project Badger, Army General Ronald Blanck, denies that anybody other than MBPI produced the vaccine.

Since the Gulf War, Project Badger has been declassified but there have no documents found that prove that a squalene adjuvant was used in an unapproved vaccine and the Army has denied the claim.

A copy of the abovementioned article is attached to and made part of this document.

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» Read the introduction <intro.html>
» Send an e-card <http://www.perseusbookspromos.com/vaccinea/index.html>

The Greatest Story *Never* Told

For the past 17 years, the Army has been working on a new anthrax vaccine that contains no anthrax, and is made with an ingredient that it does not want to name. That ingredient is called squalene. Squalene is an oil. Without it, the new vaccine will not work any better than the old one. In fact, for all intents and purposes, without squalene the new vaccine *is* the old one. What makes squalene so important is its proven ability to stimulate a strong response from the immune system. That is something the main ingredient of the new vaccine, the now ultra-purified protein secreted by the anthrax microbe—recombinant protective antigen—cannot do by itself. It is too weak.

Immunologists have a special name for substances used to boost feeble vaccines. They are called adjuvants. Adjuvants are arguably the most extensively researched pharmaceutical product in the last quarter century that you never heard of. I have used the word adjuvant three times in this paragraph so far and that is probably three times more than you have ever seen it in print before. This is partly because the most effective adjuvants, those formulated with oils, are too dangerous for human use. That is squalene's other proven ability, causing incurable disease, which is why it is such a touchy subject with the Department of Defense.

The word adjuvant comes from a Latin word that means "to help." But with oil adjuvants like squalene that term is misleading. Today, only one adjuvant—an aluminum salt called alum—is licensed for human use. All the oil adjuvants are so noxious that their use is restricted to experiments with animals, and even then, governments have written strict regulations to govern how they are used. The classic oil adjuvant, called Freund's Complete Adjuvant, is considered too inhumane to even inject into animals. It does a terrific job of stimulating the immune system, though. Unfortunately, Freund's Complete Adjuvant can cause permanent organ damage and incurable disease. As early as the 1930s, these oil additives were notorious for inducing illness. By the 1950s, scientists knew these illnesses were specifically autoimmune. Today that is their chief use in research—inducing disease instead of preventing it. Scientists studying autoimmune disease cannot wait around for its spontaneous appearance in a lab animal; they inject it with Freund's Complete Adjuvant to reproduce autoimmunity on demand. Oil adjuvants made with squalene equally effective at this job, and regrettably according to Dutch scientists, equally inhumane. , ,

Autoimmune diseases are chronic and progressively debilitating ailments; some, like

multiple sclerosis and lupus, can be fatal. They occur when the immune system loses its ability to distinguish what is "self" from what is foreign. Under normal circumstances, your immune system ignores the constituents of your own body; immunologists call this "tolerance." But if tolerance is broken, the immune system turns relentlessly self-destructive, attacking the body it is supposed to defend.

Adjuvants can break tolerance. In 1956, Dr. Jules Freund, the Hungarian born scientist who gave his name to the adjuvant he created, warned that animals injected with Freund's developed terrible conditions: allergic aspermatogenesis (stoppage of sperm production), experimental allergic encephalomyelitis (the animal version of multiple sclerosis) and allergic neuritis (inflammation of nerves that can lead to paralysis), allergic uveitis (an inflammation in the eye that can cause blindness). There was no reversing any of these conditions.

Scientists are still unsure why oil adjuvants do this. One theory is that oils have the ability to hyperactivate the immune system. "The cause is probably that when injecting these molecules, you create a chaos in the immune system," says Dr. Johnny C. Lorentzen, and immunologist with the Karolinska Institute, which awards the annual Nobel Prize for Medicine. He says these oils induce "an extremely powerful response," so powerful, in fact, that the immune system goes haywire and starts attacking things it would otherwise leave alone. Another possibility, which has not been explored very much, is that this harmful phenomenon actually has something to do with one of the greatest distinguishing characteristics of the immune system—its specificity. Over eons in time, this extraordinarily elegant and powerful system has evolved to respond very precisely to what it deems potentially harmful to the body. Our bodies contain all sorts of oily molecules. It could be that when an oil is injected, the immune system actually responds to it with a high degree of precision - just as it responds to everything else - but because the adjuvant resembles too closely those oils found in the body, the immune system begins attacking those too. In immunology this is called a "cross reaction." Neither proposition - chaos or specificity - has been proven so far. But however oils do their damage, it is well known that they do.

Army scientists have been as aware as anyone else of the harm that injecting oils can do. The problem for military personnel is that these scientists learned this lesson by injecting oils into troops in experiments that in some cases they did not agree to participate in. The central question in this book is whether such an experiment has been done again with the new anthrax vaccine and squalene.

Round One

Despite their dangers, oil adjuvants have come to exert an irresistible, almost magical allure on researchers. If they could truly stimulate the immune system safely, oil additives could help defend mankind from diseases like malaria and HIV. For germs such as these, no one dared make a classic vaccine - the kind made from the germ itself - for fear of accidentally infecting someone with an incurable, if not fatal infection. By splicing off just little bit of such a germ - not enough to make anyone sick - and combining that shard with an adjuvant, scientists hoped to protect people from lethal microbes. If they could do it for HIV, they reasoned, they could do it for any germ in creation. This siren song was

so powerful that it did more than induce researchers to indulge in cynical risk/benefit calculations; in some cases, it made them forget the risks altogether.

The first time Army scientists succumbed to this allure was in 1951 at Fort Dix, New Jersey in an experiment that involved 44,459 troops. More than 18,000 of them got injected without their informed consent with a newly formulated oil additive for vaccines. The Army thought it had something new and safe. The world's best additive that no one dared inject into humans, Freund's Complete Adjuvant, was more than just mineral oil. It also contained *Mycobacterium tuberculosis*, the germ that caused TB. The mycobacteria were dead, but scientists thought they still might be in some way responsible for the problems associated with this concoction. So they removed the mycobacteria in hopes that the oil alone could do the trick; they called this new adjuvant "Freund's *In*complete Adjuvant." The incomplete adjuvant was just mineral oil in water, and a detergent to keep the oil evenly dispersed. Using it was a risky thing to do, but the Army considered the risks of not running this experiment even higher. This "incomplete" additive had been incorporated into an experimental flu vaccine. It was the flu that really worried the Army.

By all accounts, the great Spanish Flu pandemic of 1918 wasn't really Spanish at all. It was American. In fact, it was an Army flu. The first victim, the "index patient," was an Army private named Albert Gitchell who worked as a cook at the Army's Camp Funston on the vast Fort Riley military reservation in Kansas. It is believed that U.S. troops heading to Europe brought this flu with them. Before it was over, more than 20 people had died of influenza around the world—the deadliest natural disaster in world history. Army scientists wanted to prevent another global killer from emerging from an Army post where new recruits might become an unintended hatchery for some vicious new flu strain that once again could wipe out millions of people. Trying out a new oil additive on troops seemed like a relatively modest risk in comparison to the benefits of a better flu vaccine.

The Fort Dix experiment took place with the blessing of Fort Detrick. It was funded by the U.S. Army Medical Research and Development Command (USAMRDC), which would later oversee the development of the new anthrax vaccine and newer oil additives too. The Armed Forces Epidemiological Board (AFEB), which would be sponsor a large number of the experiments conducted on military personnel, would later recommend the injecting an experimental flu vaccine containing oil into every man and woman in the U.S. military without their informed consent. The risk of an outbreak of killer flu seemed too great to do otherwise. To run this experiment, the Army would contract none other than Jonas Salk. Salk had already tested Freund's Incomplete Adjuvant on medical students at the University of Pittsburgh under the sponsorship of the Armed Forces Epidemiological Board, and with funding from the Army Surgeon General. Based on this study, Salk thought it was safe.

Over the next two decades, the entire U.S. public health establishment - civilian and military - kept watch on what happened to the troops from Fort Dix. Everyone wanted in on the act. USAMRDC funded this study and its follow-ups. The National Academy of Sciences, the Walter Reed Army Institute of Research (WRAIR) and the Walter Reed Army Medical Center (WRAMC) did the initial round of surveys. Then the list started to grow. The National Academy of Sciences and the National Research Council organized more studies at the request of the Veteran's Administration, the Army and the U.S. Public

Health Service "in collaboration with the Armed Forces Epidemiological Board." At the 17-year mark, academia got involved too. An AFEB scientist on the faculty of the University of Michigan School of Public Health organized yet another follow-up. No one, it seemed, wanted to be left out of such an important experiment.

And the experiment that seemingly had no end. Twenty-one years after Salk first injected unsuspecting soldiers with a theoretically new and improved flu vaccine, the Fort Dix troops were under the microscope yet again. The list of sponsors included many of America's most respected public health institutions: the National Academy of Sciences-National Research Council, the American Cancer Society, the Veterans Administration, the Department of Defense, the U.S. Public Health Service and the Commission on Influenza of the Armed forces Epidemiological Board. USAMRDC bankrolled this study, just as it did the first one. What was remarkable about this 21-year project - involving the military, civilian public health authorities and a major university - is that at no time during its execution did any of the scientists involved publicly discuss whether it was ethical to run a medical experiment on people without telling them. If these doctors had any concerns, they did not publish them.

Long before the last study was completed, AFEB proposed the adoption of an experimental flu vaccine with oil for everyone in the military. In 1963 and 1964, AFEB recommended injecting every man and woman in the armed forces with the new vaccine. The board also recommended that Department of Defense also commence studies with oil added to tetanus and diphtheria toxoids, and polio vaccines. , Army doctors seemed determined to add oil to every vaccine they could.

Here is what they were not telling anybody. By 1964, the year when everyone in the military was supposed to get immunized with an oil-boosted influenza vaccine, the Army already knew the risks this vaccine presented for a very specific type of illness. AFEB's Colonel Abram S. Benenson had drawn up a list of diseases that investigators should watch out for in veterans injected with the oily flu vaccine at Fort Dix. Benenson's list read like the contents of a chapter on autoimmune disease in an immunology textbook. It included multiple sclerosis, myelitis, Guillain-Barré syndrome, uveitis, neurodermatitis circumscripta and disseminata, amyloidosis, lupus erythematosus, dematomyositis, scleroderma, chronic pericarditis, Raynaud's disease, rheumatoid arthritis, rheumatoid myositis and acute glomerulonephritis—all of them autoimmune diseases.

The final study on the Fort Dix troopers had data that none of the previous ones had: autopsy results. The soldiers had grown older and many of them had died. Epidemiologists, mainly working for the National Research Council and the American Cancer Society, reported a "significant excess of deaths" in soldiers given the oil-boosted vaccine, which the investigators related to "ill-defined vascular lesions of the central nervous system." They attributed this fact to the greater number of autopsies available for the soldiers given the oil-boosted vaccine. But there were hints of a problem with autoimmunity. Ten percent of the soldiers studied, who were injected with the oil-boosted vaccine, developed a "collagen disease," which is a term doctors used to use interchangeably with autoimmune disease. Still, the number of patients in this study was too low to extrapolate any reliable conclusions from the data. That did not prevent government and military doctors from doing just that. They concluded that the oily flu

vaccine was safe. Nevertheless, what the government then did not do was telling. The FDA never licensed the vaccine, or the oil adjuvant, for human use.

The Fort Dix experiment was the first time Army doctors and scientists injected an oil-boosted vaccine into U.S. troops without informed consent; there is now clinical evidence that it was far from the last. For more than a half century, factions in military medicine and in the U.S. public health establishment have actively campaigned to get an oily vaccine additive licensed, seemingly at any cost.

The Emperor's New Clothes

When scientists at Fort Detrick, following Joe Jemski's 1992 talk, reviewed the existing literature on the Wright vaccine, it didn't look good. Even with 6 shots, the vaccine did not protect very well. Guinea pigs vaccinated with the licensed human vaccine died when exposed to certain strains of anthrax. In 1986 the bad news got worse. In discovering that the licensed vaccine protected against the Army's old weapons strain, Vollum - from which the vaccine had been derived - Stephen Little and Gregory Knudson also discovered 8 more anthrax strains for which the PA vaccine did not work. Among them was the now notorious Ames strain that was mailed in 2001 anthrax letter attacks. Like the Army's previous research, the data confirmed that a live spore vaccine provided better protection against more strains. "The fact that the spore vaccine provided protection against all isolates tested suggests that other antigens may play a role in active immunity," they concluded. Which would argue for a live anthrax vaccine, but Fort Detrick's scientists expressed an age old concern about problem with living vaccines that could be traced all the way back to Pasteur: "Since this vaccine is a live immunogen," they warned, "safety factors must be considered before its use." Little and Knudson did not rule out the possibility of resorting to a live spore vaccine, but that is not what they then chose to pursue.

When they, along with Fort Detrick scientists Bruce Ivins and Sue Welkos, began working on a new anthrax vaccine, they chose a design that was all the rage at the NIH—subunit plus adjuvant. "Subunit" refers to small fragments of a germ. For safety, NIH scientists were using subunits of lethal viruses like HIV to be the chief component of their new generation of genetically engineered vaccines. These ultra-pure vaccines, which reduced an immunization to mere molecules from a microbe, were safe, but at a price. They were weak. In some cases, they afforded no detectable level of protection at all. This is why the NIH wanted an adjuvant more robust than alum for its new vaccines.

The subunit that Little, Knudson, Ivins and Welkos chose for the Army's new anthrax vaccine was a little surprising. It was protective antigen—the same main ingredient in the vaccine they were trying to replace. Although all the data from both U.S. and British military experiments from the 60's forward indicated that more components of the anthrax microbe needed to be in any effective anthrax vaccine—a fact that even Little and Knudson acknowledge in their 1986 paper—Fort Detrick's newest generation of anthrax investigators did just the opposite. In fact, they did one better. With recombinant DNA technology, their new vaccine would eliminate every extra molecule of anthrax unrelated to protective antigen. It would be purest PA formulation ever made, and would hence be the weakest anthrax vaccine ever made. Remember, in immunology, purity equals

weakness.

Yet when Fort Detrick's scientists traveled to England in 1989 to report on their new vaccine to the International Workshop on Anthrax, they had some startling results to announce: Fort Detrick had found what everyone had been looking for: a single-shot anthrax vaccine. In guinea pigs, the new anthrax vaccine produced complete protection against the Ames strain with just *one* dose.

If this was completely at odds with everything Army scientists had found over the previous three decades, it was because the Fort Detrick team had added something new to the formula. It was a kind of trick, though not in the sense of something fraudulent or deceptive. The Army's scientists made no effort to conceal what they did. Quite the contrary, they reported this trick in great detail. It was an old trick. In the 80s, scientists at NIH had been promoting the use of oils in vaccines again. By now, there was a new crop of oily vaccine boosters hot off the lab bench. It was the oil emulsions that helped transform the Army's hapless protective antigen formula into a potent single-shot vaccine.

Dr. Bruce Ivins informed the workshop gathering in old cathedral city of Winchester that he had added three different adjuvants to his one-shot wonders. One was called "Tri-Mix," another "DeTox," and a third was "SAF-1," which stood for Syntex Adjuvant Formula I. They were all made with bacterial scraps from truly noxious microbes like *Salmonella typhimurium* and *Mycobacteria tuberculosis*. The British scientists from Porton Down tried a different tack—adding a preparation to the British anthrax vaccine made from the whooping cough germ, *Bordetella pertussis*. At Winchester, the Porton contingent called their approach "microbial supplementation." All of these adjuvants relied on bacteria, or portions of them, to stimulate the immune system.

The three additives used by Fort Detrick, however, differed from Porton Down's in one very significant way. The Fort Detrick additives were all emulsified in oil. The oils were only supposed to be "vehicles" that conveyed the bits of bacteria through the bloodstream. SAF-I, which provided less protection than the other two, contained the oil squal*ane*. The two adjuvants that helped provide complete protection from Ames in guinea pigs, Tri-Mix and DeTox, were emulsified in squal*ene*. At the time, no one at Fort Detrick or the NIH seems to have been aware that these oils were themselves immunostimulants.

Having invested decades into refining protective antigen to a singular purity, Ivins et al. were essentially polluting this new ultra-pure vaccine with extraneous antigens to make it work. That is what an adjuvant was—extra antigenic material for a vaccine that had been purified to such an extent that it could no longer do the job it was designed to do. Perhaps it was the importance of their apparent breakthrough that blinded these scientists to what they had done. Whatever it was, it prevented them from seeing the absurdity of their new creation, or its risks. A fully intact microbe presents dozens of different chemical binding sites an antibody can latch onto. Each of these sites is a separate target for a multi-front attack by the immune system. In pursuit of purity, Army scientists had removed all of the targets of anthrax germ but one. Now they had a dubious product that they were determined to improve, and they did it by adding targets from germs *other* than *B. anthracis*. Instead of adding more antigenic material from the anthrax microbe - as Lincoln had suggested in the 60s and as Turnbull and Melling had done in the 80s—the Fort Detrick team incorporated pieces of completely different germs.

This was Rube Goldberg immunology. The Army's vaccine whiz kids had devised the most convoluted, expensive and time-consuming way conceivable to make a virtually identical product—protective antigen—and then added material that essentially diverted

the immune system's attention away to antigens unrelated to anthrax. Fort Detrick's new, souped-up single protein vaccine, like the old one, did nothing to induce an immune response to the organism itself, which could still feed, secrete toxins and multiply inside a vaccinated host. There was also one more flaw in this design: oils are potentially toxic, and the Fort Detrick team knew it. In Bruce Ivins' frequently cited paper on the Army's pursuit of an improved human anthrax vaccine, he noted that oil adjuvants "*can provoke toxic, allergic, ulcerative, or lethal reactions*." This should have prevented him from committing Fort Detrick to an oil-boosted anthrax vaccine in the first place, but for reasons that Ivins has never publicly disclosed, it did not deter him. Neither he nor anyone else who worked on this vaccine at Fort Detrick has published an explanation for why they did this.

Round Two

Anyone even remotely familiar with oil additives for vaccines could have told you that they were a big problem. For reasons science has yet to fully explain, oils and other fatty substances found in the body, like cholesterol and phosopholipids, are potent stimulants to the immune system. Try as they might, scientists trying to harness this property have yet to come up with an oil adjuvant safe enough to use in humans. Since the 1930's, the gold standard has been the aforementioned Freund's Complete Adjuvant—an elixir banned from human use because of its toxicity. When Freund's Incomplete Adjuvant, a vaccine additive made chiefly from mineral oil, proved too risky as well, scientists tried changing the oil.

In the early 1970s, scientists at UCLA Medical Center, including one of the most respected rheumatologists in the country at the time, Carl M. Pearson, started looking for a less toxic alternative to Freund's. They ran a series of experiments with a variety of edible oils on the assumption that because they were "metabolizable" the body could process them safely. In other words, if you could ingest them, you could inject them. Intuitively, this premise seems somewhat dubious: your body could metabolize a cheeseburger, for instance, but you couldn't liquefy it in a blender and inject the resulting slurry, and then expect to feel well in the morning. Pearson's associates, Michael Whitehouse and Frances W. Beck, injected more than dozen of these metabolizable oils into rats, including castor oil, coconut oil, olive oil, sesame seed oil, cottonseed oil, corn oil, wheat germ oil, safflower oil, cod liver oil, oleomargarine, and the commercial lubricating oil, silicone. When these were mixed with heat-killed *Mycobacteria tuberculosis*, the UCLA group got results it didn't expect. All of the oils were toxic; they all induced arthritis in rats with varying degrees of severity. The data changed Whitehouse's views on the safety of metabolizable oils. "To summarize very simply, I think most oils are dangerous," he now says. Based on their ability to cause arthritis, the researchers assigned the oils "arthritis scores," ranging from (+), which was moderately toxic, to (++++), which was guaranteed to cripple. Of all the metabolizable oils tested by Pearson's group, two were better than all the others at causing arthritis: squalene and squalane, the same emulsifying oils that Bruce Ivins used in his single shot anthrax vaccines.

Squalene and squalane scored (+++) and (++++) respectively. Between these two oils, squalene is the one you could definitely eat. Olive oil contains squalene; in theory, you

could drizzle it onto a salad along with a little vinegar and have no worries. Your body would metabolize it along with the arugula and endive without as much as a hiccup. Injecting squalene, though, was another story. To make sure it was the oils that did the damage, Beck, Whitehouse and Pearson tried injecting rats with squalene and squalane without mycobacteria in the formula. Rats injected with either squalene or squalane all developed experimental allergic encephalomyelitis—the same MS-like disease caused by Freund's. The injected animals were left hobbled, dragging their paralyzed hindquarters through the wood chips in their cages. , The UCLA team had found what it was looking for: oils that induced autoimmune disease, but with less inflammation. Between the two of them, squalene was less desirable for UCLA's purposes. "Squalene was more arthritogenic," Beck recalls, "but it also produced a greater inflammation."

Risk v. Benefit

Given these oils proven ability to induce autoimmune disease, the Army's decision to put either of them in its second generation anthrax vaccine only makes sense when you put it in the context of the times, and in this case, a specific location. When he cancelled America's offensive biological warfare program, President Nixon also freed up some building for a more popular research effort. Arriving by helicopter at Fort Detrick's Blue and Grey Field in October 1971, President Nixon personally announced the creation of the Frederick Cancer Research Facility of the National Cancer Institute (NCI). Nixon had Fort Detrick allocate about 68 acres and 70 of its buildings as a new research campus for NCI. It was a fateful decision that would have consequences that even a president as forward-thinking as Nixon could not have foreseen. It would set in motion a series of decisions that would lead, almost inevitably, to the use of a substance that would endanger the health of hundreds of thousands of U.S. troops.

It is unclear how squalene first came to the attention of Army scientists at Fort Detrick, but one possibility is through the National Cancer Institute, now on its doorstep. Eliyahu Yarkoni and Herbert Rapp of NCI published a paper in 1979 that stirred national and international interest in the alleged therapeutic benefits of squalene and squalane. When combined with fragments of a particular bacterium, squalene and squalane had an astonishing effect. Yarkoni and Rapp reported complete tumor regression in mice injected with squal*ane*, and nearly complete regression (92%) in mice injected with squal*ene*. When they injected these oils directly into mouse tumors, the tumors either shrank or disappeared completely. The more oil in the mixture, the better it worked. Based on these early experiments, oils looked like they might hold the keys to the kingdom—a cure for cancer. There was, however, a hitch.

Yarkoni and Rapp knew about the UCLA data; citing the Beck and Whitehouse paper, Yarkoni and Rapp reported that squalene and squalane both caused autoimmune disease in rats—a fact that you will not find mentioned in any Army paper concerning Fort Detrick's work with squalene emulsions in the new anthrax vaccine. Even Yarkoni and Rapp barely mentioned the problem with squalene and squalane; it was limited to a single sentence at the end of their short paper. Although causing debilitating and ultimately fatal neurological damage in animals was a big downside, their concern, after all, was cancer.

Several more factors emerged in the 1980s that would affect the direction of the Army's

anthrax vaccine research. The first was HIV. After the discovery of the human immunodeficiency virus in 1984, the cause of Acquired Immune Deficiency Syndrome (AIDS), the National Institutes of Health would devote billions to develop a vaccine. That year, the Centers for Disease Control reported 7,699 AIDS cases with 3,665 dead. By 1988, the number of diagnosed U.S. cases was 82,764 with 46,344 dead. That was a jump of more than 1000% in just 4 years. Mortality was 100%; for someone with AIDS, drugs could prolong life but not save it. Public health officials doing the math were horrified. No one dared make a whole virus vaccine, living or dead, from a germ like HIV. Vaccine researchers embraced gene-splicing as their only alternative—inserting HIV genes into non-lethal organisms like vaccinia. But the results were disappointing: these microbial hybrids barely elicited an immune response. That's why a new adjuvant was essential to NIH. Because of Yarkoni and Rapp's work, squalene and squalane emulsions had by then established themselves as NIH's adjuvants of choice.

HIV was threatening to become the great plague of the 20th century, worse even than the flu pandemic of 1918 that claimed more than 20 million lives. It was the public health cause célèbre of the 1980s. Rock Hudson had it; so did Liberace. When an Indiana school banned 14 year-old Ryan White from classes because he had HIV, Elton John and Michael Jackson became his friends and offered their support. Vice-President George Bush called for mandatory HIV testing. No other disease made as many headlines or pushed as many political buttons. For NIH, that translated into wide open government coffers. For researchers, it offered a shot at immortality. Any scientist who found a way to stop this new global scourge could reserve a seat in Stockholm for a Nobel Prize ceremony. A successful recombinant HIV vaccine would be just a start. The goal was to roll back all infectious diseases through immunization . if that were possible. But it wasn't going to happen without a more powerful vaccine booster. The FDA, stung by criticism from dying AIDS patients who wanted access to new drugs that could keep them alive even a few months longer, started to "fast-track" drugs through its licensing labyrinth, including experimental vaccines containing squalene. This was not without risks. The problem with the fast track was knowing when someone was playing it fast and loose.

Even NATO got on this bandwagon by sponsoring a conference in Cape Sounion, Greece, on vaccine adjuvants in the summer of 1988. The search for a new adjuvant was now a matter of national security. The U.S. Army sent a contingent from its Walter Reed Army Institute of Research led by Dr. Carl R. Alving, a proponent of vaccine boosters emulsified in squalene, in addition to his own favorite: liposomes. Liposomes are microscopic vesicles containing vaccine antigens. Think bath oil beads. Encapsulating bath oil in soluble beads makes it possible to transport measured doses of oil from the drug store where you bought them to where you ultimately want to put them—in your bathtub. Alving's liposomes were made from cholesterol, another oily substance closely related to squalene.

The Soviets Again

If anyone in the military had been inclined to ask questions about squalene's toxicity in the late 1980's, something else happened around that then that might have diverted them. In October 1989, a high-ranking Soviet biological weapons scientist defected to the West—the first one to do so. This was an extraordinary intelligence coup. At the

invitation of a French pharmaceutical equipment maker, Dr. Vladimir Pasechnik of the Leningrad Institute of Ultra-Pure Biopreparations went to Paris for a conference and never went home. He left his family behind in Russia and wound up in Britain. One of the scientists who debriefed Pasechnik for the British was Jack Melling. "Pasechnik chose Britain," says Melling, "because he thought the U.S. still had an active biological warfare program and he didn't want anything more to do with making weapons. He didn't think the same of Britain." According to Melling, what Pasechnik told Britain's MI-6 raised even more alarm about the U.S. and British chemical anthrax vaccines. Pasechnik said that Moscow had created antibiotic-resistant super-strains of anthrax, plague and tularemia. Although Pasechnik's British handlers couldn't verify this, it sounded plausible enough to them; in part because making germs antibiotic-resistant was relatively easy to do, and in part because the Soviets had published several papers in the 1980's disclosing that they had developed a veterinary vaccine that immunized against all three of these microbes. Intelligence analysts had been asking themselves why Soviet livestock would need to be vaccinated against plague, tularemia and anthrax—the three agents regarded by bioweapons specialists as the most likely ones to be used in a biological warfare attack. They could not come up with a good answer.

Back in Maryland, Fort Detrick now had at least four viable prototypes of a single shot vaccine that they thought was safe. All were made from the protective antigen protein or pieces of it. Three others were recombinant vaccines; Fort Detrick had cloned the protective antigen gene into Bacillus subtilis, baculovirus and vaccinia. All of these prototypes were formulated with squalene or squalane. The ones showing the most promise were the protective antigen vaccines combined with these oils. According to Ivins and his Fort Detrick colleagues, just one dose of these new vaccines gave protection equivalent to three doses of the licensed U.S. vaccine . and the new vaccines were ready for clinical trials. All Fort Detrick needed now was the right time and place to test them.

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THE PENTAGON'S TOXIC SECRET

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BY GARY MATSUMOTO

Thousands of American veterans suffer from debilitating Gulf War-related illnesses. But the origins have remained a mystery.

A crusading molecular biologist and internal military documents now suggest a shocking scenario: the Pentagon's possible use on its own soldiers of an illicit and secret anthrax vaccine.

Veterinarian Dr. Herbert Smith negotiates the nine paces across his porch to the driveway of his house as though he were on a high wire, adjusting each deliberate step, shifting his weight from a walking cane in his left hand to another in his right.

Smith lives in Ijamsville, Maryland. a subdivision no-man's-land of two- acre lots and empty vistas where the surbs of Washington, D.C., comingle with those of Baltimore.

He wears black leather wrist pads Velcro'd from palm to forearm and a pair of ragged government issue elbow pads to protect himself from the falls he frequently experiences. "I'm subject to what's called neurapraxia damage to the nerves," explains Smith. "Like with diabetics, who then wind up with amputations. I'm trying to avoid that."

On reaching the driveway, he straightens up to shake my hand. You can still see the outlines of the elite athlete he once was. Dr. Smith, 59 years old, is also Colonel Smith, Green Beret. His subordinates nicknamed him "Super Trooper." in deference to his gung-ho attitude and his once Olympian physique. When he entered airborne school at Fort Benning in April 1966 he set out to be No. 1 in a class of 687 by baiting his drill instructors to drive him harder than the others. "So, they targeted me. I must've done a thousand push-ups a day.

But I knew it was all a game. I never got mad, never lost my cool. There were a couple of navy SEALs there. They were pretty tough guys. But they weren't as tough as me." Until 1991, Smith ran PT (physical training) programs; the ones back in the 80s were notoriously grueling, earning him a nickname: "Dr. Death."

He smiles at this but is unapologetic. "I wore em into the ground. In a fun way, not in a brutal way."

Today, a thick purple welt juts from Smith's forehead an angry bulge from hairline to brow. Even on perfectly flat ground, he falls a lot.

The symptoms first appeared in January 1991, the same month, Smith says, that he got his first shot of something that does not appear on his immunization card or in his records--a mysterious vaccine, described to him only as "Vac A." He was then in Saudi Arabia training Kuwaiti medical personnel in disaster relief. Sometimes the pain was so bad in his right hand he couldn't hold a fork at meals. The next time it would be his left hand, never both hands at the same time.

By May his joints ached and his lymph nodes were swollen, and he had a fever and a red rash on his chest and legs. He was constantly fatigued. It hurt to walk. It hurt to brush his teeth. After the invasion he wanted to stay on to help the Kuwaitis rebuild, but the symptoms were getting worse, and he had no idea what was wrong. He knew he needed treatment back in the States.

Just before he got on a transport heading home, one of his medical officers, who had seen similar symptoms in other soldiers, came up to him and said, "When you get home, check out the vaccines. I think you've got a problem with them." Smith had received vaccinations for hepatitis and tetanus, and a second shot of Vac A, which was entered into his records on February 14, 1991.

Back at Fort Meade, Smith was given a desk job while the military doctors investigated his condition without success. In October 1991 he left active duty, but continued to see physicians at the Waiter Reed Army Medical Center in Washington, D.C. He didn't regard the problem as serious until the seizures started. Not grand mal, fall-on-the-floor, foam-at-the-mouth seizures, but complex partial ones, in which he appeared to be functioning normally but was actually on autopilot, without awareness of what he was doing.

"I skipped periods of time," he explains. "I was in a car driving towards Baltimore on I-70, and the next thing I know, I'm outside of Washington, D.C., on I-95, and I've got no clue how I got there."

One night, his worst, Smith became completely disoriented. "I had blacked out for an hour, hour and a half. I had to call my wife on the phone to find my way home. I was probably 25 miles away. I was an emotional mess because by then I had to admit to myself that something was wrong with me."

By this time Smith was seeing Dr. Michael Roy, an internist at Waiter Reed. Roy diagnosed Smith's condition as "somatization disorder," a psychosomatic illness in which a patient becomes so obsessed with an imaginary disease that he begins to exhibit its symptoms.

Smith was not the only Gulf War veteran experiencing mysterious symptoms. In late 1991 and early 1992, some from a reserve unit at Indiana's Fort Benjamin Harrison reported sick with a constellation of symptoms that have since been associated with Gulf War syndrome: joint pain, headaches, fatigue, memory loss, and rashes.

Reservists in Georgia and Alabama made similar complaints. Military doctors mostly dismissed the symptoms as psychosomatic or stress-related. As the number of people affected began to grow, several government studies were commissioned, including those of the Presidential Advisory Committee on Gulf War Veterans' Illnesses, the Institute of Medicine, and the Senate Committee on Veterans' Affairs. By 1996 all of them had concluded that there was no single disease that could account for all the different symptoms associated with Gulf War syndrome. The Department of Defense has examined at least 20 possible health hazards, including pyridostigmine bromide (PB.) pills taken by the Gulf War troops to help protect against chemical warfare, the insect repellent DEET and various pesticides used by the soldiers, and Kuwaiti oil-fire smoke. A frequently repeated theory, still unproven, blames the syndrome on low-dose exposures to chemical-weapons fallout.

About 40,000 veterans have registered with the Department of Defense's Comprehensive Clinical Evaluation Program (C.C.E.P.) for Gulf War illnesses; another 70,000 or so are tallied by the VA. A C.C.E.P. spokesperson says the numbers do not overlap; i.e., the total number of 110,000 to 115,000 is accurate. Of these, 18,000 are undiagnosed, and are merely being treated for their symptoms. To date, the federal government has sponsored 140 or so related research programs, exploring everything from microwaves to biological weapons, which have been funded at a cost to the taxpayer of more than $130 million.

Colonel Smith is one of the highest-ranking officers on full disability for Gulf War syndrome. He believes he might have never known the nature of his illness had it not been for the efforts of Dr. Pamela Asa, a Ph.D. molecular biologist who for the past five years has waged a one-woman battle with the Pentagon over the diagnosis of Gulf War syndrome and its cause. She has conducted her own research without a penny from the government or any other benefactor. Because of Asa's work, Colonel Smith has become more than a poster boy for a public-health disaster. Asa believes that in Smith's blood there is evidence that may hold the answer to why so many veterans of the Gulf War are sick.

Vanity Fair has uncovered military documents that show the Department of Defense made plans to run a clandestine trial of experimental vaccines and medical products during Desert Shield and Desert Storm. Military physicians called this effort "the Manhattan Project." While many of these vaccines were never used, Vanity Fair has found evidence suggesting that the Pentagon may have developed a modified version of its ED.A.-licensed anthrax vaccine during an operation called "Project Badger." If Pam Asa is right, an experimental substance that causes incurable diseases ill lab animals was mixed into an unknown number of doses-in essence creating a new, untested anthrax vaccine. The actual administration of such a vaccine would have violated the 10-point Nuremberg Code, which in 1947 established the conditions for experiments on human beings - the cardinal point being informed consent. Speaking for the Pentagon, Dr. Ronald R. Blanck, a three-star general in the army's medical command, denies that any of this took place.

"Absolutely not,' he says. "I will tell you Bat out it wasn't done."

There are echoes of the antebellum South in Pam Ass's accent, in the way she can stretch three syllables out of a word like "hey." Her speech is a genteel drawl, evoking images of hoopskirts, silk fans, and magnolia blossoms. Asa, 46 years old and the mother of four, lives in Memphis, Tennessee. "American by birth, southern by the grace of God," she likes to say, especially in the presence of Yankees. During the Civil War, Union cavalrymen arrested her great-great-grandfather the Reverend John Murray Robertson for refusing to pray for Abraham Lincoln, and then turned his church, Huntsville, Alabama's Episcopal Church of the Nativity, into a horse stable. But though Asa is fond of making jokes about "the War of Northern Aggression," she is no regional chauvinist. Members of her family have fought in just about every American conflict, from the Revolutionary War up through Vietnam. Francis Scott Key, who wrote the words to the national anthem, is

one of her ancestors. Her father retired from the Marine Corps as a captain in the early 1960s, then worked as a quality-control director for NASA)s Redstone Arsenal in Huntsville. Asa's reverence for the military borders on idolatry. "My father taught me ever since I can remember to have respect for anyone who serves in the military, because they protect us. They're willing to take bullets for us."

It was patriotism that motivated Asa to approach the Pentagon in 1994 about vaccines administered to the troops for Operation Desert Storm. By then, the symptoms related to Gulf War syndrome had been widely publicized. They were vague enough to point to anything from a stroke to allergies to mere tension. "But when these particular symptoms are taken together," Asa says, "they point to autoimmune disease"-- when a person's immune system goes haywire and attacks his or her own body.

Mostly, doctors don't know what causes autoimmune disease. Many victims develop it from unknown causes. Since 1984, Asa had been working with her husband, Kevin an M.D. certified in both internal medicine and rheumatology to treat a group of women with such autoimmune diseases as rheumatoid arthritis and lupus.

After a series of landmark legal cases in the early 1990s which alleged a relationship between silicone breast implants and autoimmune disease (the lawsuits put the main manufacturer, Dow Corning, into bankruptcy), a large number of the Asas' patients revealed that they had received breast implants. Pam Asa became convinced that silicone had induced diseases such as scleroderma and lupus in her patients-a conclusion that embroiled her in one of the most contentious public-health disputes of the 90s. It is a view that has propelled her into what promises to be an even more bellicose scrap.

Asa suspected that the autoimmune illnesses showing up in Gulf War troops were also induced by a toxic substance.

For one thing, the gender breakdown of the victims was suspicious. Women develop autoimmune diseases far more often than men do. With lupus the ratio of female to male sufferers can be as great as 14 to 1. But among Gulf War veterans the victims were overwhelmingly male (an anomaly only partially explained by the Fact that women made up a mere 6.8 percent of the U.S. force serving there).

Another startling fact pointed to the vaccination program. Many of Asa's Gulf War-syndrome patients had never deployed to the Persian Gulf. They had never been exposed to petroleum fires, chemical-weapons fallout, pesticides, or the other suspected causes of Gulf War syndrome.

But, she says, they did have one thing in common with the troops who were in theater: they had rolled up their sleeves and gotten their shots.

For Asa, all of this pointed to an adjuvant. Adjuvants are toxic substances which make vaccines more effective by stimulating an even stronger response from the immune system than a virus or bacterium might on its own. In the course of investigating the possible connection between her earlier patients' breast implants and their illnesses, Asa says she came across a confidential Dow Corning document showing that the company had conducted research with silicone as a vaccine adjuvant in 1974. The term "adjuvant" comes from the Latin word adjuvare, "to aid." Hut the quest for a safe, effective adjuvant has been like the medieval chemist's quest to turn lead into gold. Adjuvants work because they are toxic, generally too toxic. Eighty years of research has produced a grand total of one that is considered safe for human use: a salt called aluminum hydroxide, also known as alum.

Other adjuvants have been rejected as too dangerous; in tests on animals, adjuvants have been used over and over again to induce autoimmune disease.

At first, Asa suspected sabotage. "If the vaccine manufacturers were overseas, their loyalties could lie elsewhere or be bought for the right price." If an enemy wanted to undermine our fighting forces undetected, she says, this would be one way to do it. "I can't think of a more effective and insidious way to reduce the effectiveness of a military force going into combat. This disease process affects people's minds. Patients suffer mood swings, blackouts, and cognitive disorders where a person loses the ability to read or understand language or remember directions. This is not what you want to see happening to people who handle guns, bullets, and bombs." Asa contends this "process" can develop into Full-blown, debilitating, and sometimes fatal autoimmune diseases such as lupus, rheumatoid arthritis, and multiple sclerosis.

In June 1994, Asa phoned Colonel John Dertzbaugh of the Pentagon's Defense Science Board with her theory. Dertzbaugh said it made a lot of sense, and promised to check it out. But the Science Board had just completed a report concluding that there was "no persuasive evidence" of Gulf War syndrome and no single cause of illness related to service in the Persian

Gulf.

The report had gone to press, and no one wanted to reopen the investigation. Still, Dertzbaugh couldn't shake the feeling that it was important to give Asa's theory a closer look. In December 1994, he asked her to write a report and submit it to the Office of the Army Surgeon General. Dertzbaugh even made a personal pitch; he told the office that Asa's theory appeared to explain the patients' problems, as he understood them.

Asa says she asked the once for vaccine samples to test free of charge-to no avail.

Herb Smith didn't call Pam Asa. She called him. In March 1995, 60 Minutes ran a segment on Gulf War syndrome that made a case for chemical weapons as its cause. Promoting this view was one of the veterans whom newsman Ed Bradley interviewed, Colonel Herbert Smith. "We were getting hammered with a lot of information about us getting affected by chemicals. I was getting sick enough where I couldn't argue with anyone. As you noticed," Smith recalls now, "they were talking about chemicals. [Former] senator Don Riegle [Democrat, Michigan], his team, and Jay Rockefeller [Democrat, West Virginia] and his team they all said it was chemicals."

Watching the program, Asa noticed that Smith's knuckle joints had a particular swelling that she had seen before. She was convinced he had an autoimmune disease.

Asa decided to track down Colonel Smith. "60 Minutes called me and said, 'We got people calling and they wanna talk to you,'" says Smith. "And I said, 'Fine, you know, doesn't bother me, let em call.' I was getting people calling me up and saying,'You've got Lyme disease; you've got chronic fatigue syndrome; you need to take vitamin C.' They were trying to help, but they were nuts. When Pam called, I thought, Well, here's another one gonna tell me, you know, what I've got and how to fix it. And then she starts talking and it just makes sense to me." About one month later, Smith says, he flew to Memphis to be treated by the Asas.

After examining Smith, Dr. Kevin Asa agreed with his wife that the diagnosis was systemic lupus erythematosus (S.L.E.). Physicians back at Walter Reed balked. Smith recalls them protesting, "You can't have lupus! You're a white male in your 50s. People like you don't get autoimmune diseases!" They refused to run their own tests. Smith was not surprised at this response from the people who had been telling him that his problems were all psychological. "I had a doctor there, a guy named Michael Roy [major, U.S. Army].

He accused me of bleeding myself to fake my anemia," says Smith. "I have a degree in chemistry as well as being a doctor of veterinary medicine. Anyway, he says I'm a pretty smart guy, so I must know how to screw up my lab results." (Dr. Roy could not be reached for comment.)

Smith wouldn't let this insult go. "I wrote a letter to the commanding general, and I told him I had an officer, a major, accuse a superior officer, me, of conduct unbecoming an officer, and perjury. They gave me this new doctor, and he comes in saying,'Well, you know, Dr. Roy says you got all these psychological problems.' And I said,'What about all the V.A. findings [which supported the conclusion that Smith was physically ill]?"The V.A.?

They're wrong. They don't know what they're doing.' So I asked, 'If you won't believe the V.A., who will you believe?

And this new doctor says,'We'll believe either N.I.H. [National Institutes of Health] or Johns Hopkins."

Smith sent his lab results to the N.I.H.'s Dr. John Klippel, who had co-edited a standard medical -school text in this field called Rheumatology. "He reviewed the case," says Smith, "and he said the Asas' diagnosis was correct, but he couldn't see me, because he wasn't accepting new patients." (Dr. Klippel could not be reached for comment.) Smith then sent his records to another leading rheumatologist, Dr. Michelle Petri of Johns Hopkins University Medical School. "She called me up and said the Asas' diagnosis was correct, but she's going to have to run her own tests to confirm this. I gave more blood. Did a brain scan. And the results were pretty much the same."

When the Asas treated Smith for lupus, his pain subsided. He could get out of his wheelchair and walk again, provided he used canes.

Word about Asa had spread on the Internet's Gulf War-veteran grapevine, and others started to get in touch with her. One was Dr. Charles Jackson, a general practitioner who used to work at the V.A. hospital in Tuskegee, Alabama. Jackson told her he had hundreds of Gulf War-syndrome patients; he didn't know what it was or how to treat it. Asa asked him to run standard

diagnostic tests for autoimmunity. Jackson says the lab values suggested that a full quarter of his Gulf War patients had autoimmune problems.

But if Gulf War syndrome is adjuvant induced autoimmunity, what is the adjuvant? In 1995, Asa got the clue she sought. An official with the Senate Committee on Veterans' Affairs introduced her to a patient who had volunteered for an N.I.H. experimental-herpes-vaccine trial. The patient complained of chronic fatigue, muscle and joint pain, headaches, and photosensitive rashes--the same baseline symptoms as in Gulf War syndrome. She also had arthritis and other autoimmune disorders, diagnosed through lab tests. But this particular patient had never received the herpes vaccine. She'd been injected with a placebo, a single shot of a compound called MF-59, which contained an adjuvant that is much stronger than alum: squalene. This was in 1991, the same year as Desert Storm. Asa discovered from published scientific papers that squalene was a cutting-edge adjuvant used in at least three experimental vaccines in the 1990s. These were used in tightly controlled experiments on animals and humans, but vaccines containing squalene have never been approved by the FDA for human use.

Squalene is a lipid, or fat, that can be found in sebum, an oily substance secreted by the human sebaceous glands. Commercial squalene is extracted from shark livers. You can buy it in health-food stores in capsules which are purported to boost the immune system. It is also used in some cosmetics as a moisturizing oil. Squalene manufacturers say it's safe, and It appears to be when swallowed or rubbed on the skin. But injecting it is another matter. The adverse effects of vaccines containing squalene have been documented in papers published in such peer-reviewed scientific journals as Vaccine and the Annals of Internal Medicine. Since the mid-1970s researchers studying autoimmunity have used squalene to induce rheumatoid arthritis and a multiple-sclerosis-like disease called experimental allergic encephalomyelitis (E.A.E.) in rats. Like every other oil-based adjuvant ever concocted, squalene is apparently unsafe.

A rheumatologist who conducts research into adjuvants at the N.I.H. disputes the idea that adjuvants can induce autoimmune disease in humans. The researcher, who did not wish to be named, calls these allegations "junk science." He admits that squalene can induce rheumatoid arthritis, but alleges that it does so only in one species of rat. Published scientific studies, however, show that squalene has been linked to the development of autoimmune disease in rats, mice, and macaque monkeys. When asked if he thinks the FDA will ever approve squalene as an adjuvant, the N.I.H. researcher says no. "The FDA has not had a track record of approving oil-based adjuvants."

Research with squalene has been done at Stockholm's Karolinska Institute, which names the finalists for the Nobel Prize in Medicine each year. Dr. Lars Klareskog, a rheumatologist at the affiliated hospital, concurs that compounds with squalene could be dangerous for humans. "It's true that adjuvants can, in these experimental models, turn a potential autoimmune reaction that is otherwise not pathogenic into pathogenic immune reactions. That is true in experimental animals. Whether that is true in humans, we do not really know. But we believe that is so. Where the event occurs in reality very much depends on the genetic background."

In early 1995, Asa submitted to the army Surgeon general the report Dertzbaugh had asked her to write. In response, the Department of Defense in March 1996 published a report on the Internet, refuting her theory without ever putting it to the test. A letter to the commander of the U.S. Army Medical Research and Materiel Command from Dr. Waiter Brandt, who works for the Science Applications International Corporation, a Pentagon contractor, summarized the army's critique of Asa's theory, claiming that the only adjuvant the military used in vaccines was alum. He also criticized Asa's use of the phrase "human adjuvant disease" (H.A.D.), a term used by Japanese doctors in the 1960s to describe autoimmune problems in women who had received silicone injections to enlarge their breasts. Brandt's letter said, "The term was coined 30 years ago and is generally not used by most informed physicians today.... There is similarity between H.A.D. and Gulf War Syndrome in their symptomatology. However, the development of symptoms in H.A.D. requires years, not months."

After the Internet report caIne out, Asa's initial frustration with the army's lack of response turned to anger. "Adjuvant disease doesn't take years to create symptoms," Asa says. "And I wrote them about squalene and they hardly mentioned a word about it." Recently, Dr. Brandt explained to Vanity, Fair; "The presence of squalene or squalene antibodies in blood samples would seem to be a natural occurrence and not an indicator of adjuvant injection."

According to Dr. Robert Garry, a professor of microbiology at Tulane University School of Medicine who works with Asa, this contradicts the fundamental definition of autoimmunity. "If that were true, we'd have antibodies to all the proteins, all the tissues in our bodies, and the immune system wouldn't function at all," he says.

In August 1997, Vice Admiral Harold M. Koenig, then the surgeon general of the navy, wrote that the army "has used squalene as an adjuvant in several experimental vaccines ... over the past ten years.... Military members who served in the Persian Gulf received standard vaccines, licensed by the FDA, with one exception [botulinum toroid, which approximately 8,000 troops received].... Squalene was not a component of any vaccine product given."

In June 1996, after denying for years that Iraq had ever forward-deployed chemical weapons during Desert Storm, the Defense Department admitted that the U.S. had destroyed a large cache of chemical munitions at the Khamisiyah depot in Iraq in March 1991. Using only limited data on weather and detonation patterns, in 1997 the D.O.D. and C.I.A. released computer models of a toxic plume emanating from Khamisiyah, wafting downwind and possibly contaminating 100,000 troops—by remarkable coincidence the approximate number of veterans who at the time were believed to be sick. (In September 1998, after conducting its own study, the Senate Committee on Veterans' Affairs would censure both the D.O.D. and C.I.A. for faulty analysis and for sending letters to Gulf War vets suggesting—without sufficient evidence that Gulf War syndrome may have been due to fallout from Khamisiyah.)

The Khamisiyah computer models were suspect, but the spin was effective. The C.I.A.-produced animations were played and replayed on television news shows. Almost overnight, chemical-weapons contamination became the conventional wisdom on the cause of Gulf War syndrome. Saddam did it, sort of. So did the ~nd. And maybe army engineers should have taken more precautions. As shots in the dark go, this seemed to make sense. The appearance that the Pentagon and C.I.A. had disclosed a possible cover-up lent the idea credibility.

But even if a toxic plume had actually existed and moved in the direction the Pentagon said it did, enveloping 100,000 troops with minute doses of nerve agent, the theory collapses on several points with regard to autoimmune disease. First, the symptoms don't match: the effects of chemical weapons--acute headache, nausea, shrinkage of the pupils to pinpoints, and muscle paralysis-are well documented. In more than 50 years of data on nerve gases, published since the Nazis invented the chemical weapons sarin and soman, there isn't a single recorded instance of a nerve agent causing autoimmune symptoms or diseases.

Second, veterans suffering from the symptoms of Gulf War syndrome who never deployed to the Gulf could not have been exposed to chemical-weapons fallout, or any other toxic agent in the region.

Some of the veterans never left the United States; some went to other countries, such as Egypt. These veterans did not take P.B. pills. Moreover, had chemical weapons caused Gulf War syndrome, one would expect to see it among those who are native to the region. Yet according to U.S. defense intelligence documents, there are no reports of Gulf War syndrome among the Kuwaitis or Israelis. The Egyptians, who contributed some 40,000 troops to the coalition force, don't have it; neither do the French or the Belgians. All of them sent troops. Another cohort of people who do not significantly report cases are the journalists who covered the war, myself included. These groups all have at least one thing in common: they did not receive shots for biological-warfare agents.

Retired air force master sergeant Jeffrey Swan, 40, says he got his shots at Fort Belvoir in Virginia sometime around March 1991. Only one of the vaccines he received was identified (smallpox), so he doesn't know which other shots he was actually given. Because Swan speaks Arabic, French, and Greek, the air force sent him to Egypt in April 1991 to serve as a liaison with the Egyptian military. About four months later the tremors started, which made him look as though he were suffering from an alcoholic's D.T's. He developed joint and muscle pain and experienced seizures similar to Smiths. In 1996, back home in Tamworth, New Hampshire, he felt his car accelerating out of control and he slammed on the brakes. But it wasn't moving; he was parked at a shopping center.

Swan's symptoms were the same as those of veterans who had Gulf War syndrome, but a VA. physician refused to put him on the government registry for it. "He told me that I had Gulf War illness, but he couldn't write that in the records, because I hadn't been deployed there, I wasn't in the right place. So he wrote 'undiagnosed illness.'"

Air Force physicians have listed Swan's problem as "Major Depression with psychotic features. " For almost 20 years I held a top-secret security clearance," Swan says. "On my medical chart there was a big red-and-white sticker that said, INSENSITIVE DUTIES.' I never had a doctor or dentist once note anything suspicious about my behavior. Any hint of instability had to be reported immediately.... Anything that might affect my performance had to be reported, even a teaspoonful of codeine. Suddenly I'm psychotic?"

Swan thinks he knows why he and other veterans have encountered this penchant to call their problems psychosomatic, if not psychotic. "Anything I said could be dismissed. It got to a point where I didn't even believe I was having these symptoms ... that I was imagining everything. If we were registered for Gulf War syndrome, then everybody would know that the sickness couldn't be due to chemical weapons.

We're the proof." According to Asa's reading of Swan's lab tests, Swan has lupus. He says a V.A. rheumatologist also told him that he may have atypical lupus, but that it would take more time to confirm the diagnosis. Asa has tested Swan +2 positive for squalene on a scale of 4.

In early 1997, Asa bought 200 milliliters of squalene from Acres Organics in Geel, Belgium. She developed a scratch test to measure sensitivity to the substance. Al 10 of her Gulf War patients were "reactive." Some suffered symptoms such as rashes or swelling at the injection site.

She also tested a control group of healthy patients who had never taken military vaccines; none of them reacted. Still, Asa didn't have her evidence. The scratch test indicated exposure, but didn't prove squalene had been injected. Around this time, Asa teamed up with Robert Garry at Tulane University. Garry and the university received a US. patent in 1997 for an assay that could detect antibodies to polymers, of which squalene is one. Asa sent Garry an initial batch of serum samples, including one from the subject who had volunteered for the N.I.H. herpes-vaccine trial. Asa didn't tell Garry which polymer he would be testing for, or which patients might have been exposed to it. This would be a blind study.

When the samples all came back positive for antibodies to the unknown polymer, Garry repeated the tests and got the same results. He also tested frozen serum samples from Gulf War veterans sent directly to him in 1993 by Department of Defense and V.A. researchers. He had originally been asked to test the blood for evidence that the patients had been exposed to retroviruses including H.I.V., for which they were virtually all negative.

Garry got these samples out of cold storage and ran the new assay on them. He had been told that some of the samples were from healthy control subjects; now 69 percent of the samples tested positive for antibodies to the unknown polymer.

It was at about this time, Asa says, that the phone calls started. She would answer the phone, and no one answered back.

Her phone would occasionally dial 911 by itself in the middle of the night. A year and a half earlier, just after she had submitted her report to the D.O.D., there had been two attempted break-ins at her house.

Her husband opposed any further involvement with the Gulf War-syndrome patients after the harassment began. If it was tied to this work, their children could be in danger, he believed. But Asa persisted, partly, she says, for the safety of her children. Her eldest. Chris, was in high school and would soon register for the draft.

"There not going to equate my son with a lab rat. I don't care what the vaccine is. I don`t care what they claim it's supposed to do for mankind. It's not right to experiment on people, ever."

Asa sent Garry more samples, and by the fall of 1997, Garry had the results. Ninety-five percent of Asa's Gulf War syndrome patients had tested positive for antibodies to the unknown polymer. Colonel Smith was positive. The subject from the N.I.H. vaccine trial was positive. Of those sick veterans who had never deployed to the Gulf, but who said they had received shots, 100 percent were positive.

In all, Asa and Garry tested some 350 subjects, half of them controls. "So what was that stuff?" he asked Asa. "Squalene," she said.

This left one major question unanswered. If the military used a squalene adjuvant, in which vaccine did they use it?

In August 1990, the month Iraqi troops invaded Kuwait, there was probable amity at the Pentagon over the prospect that Saddam Hussein might use biological weapons to defend his newly annexed territory. On August 8, intelligence intercepts of Iraqi military communications indicated that Baghdad had produced and probably weaponized (i.e., made suitable for warfare) many deadly biological agents, including botulinum toxin and anthrax. The U.S. Army had been purchasing small amounts of vaccine for both, but its stocks were woefully short of what would actually be needed.

A high-ranking army source confirms that by August 1990 the United States had stockpiled between 11,000 and 12,000 doses of anthrax vaccine. We eventually deployed 697,000 troops in the Persian Gulf.

According to declassified military documents, in August 1990 the army surgeon general at the time, General Frank E Ledford Jr., ordered a team of doctors and researchers from the army, the navy, and the Air Force to form a secret TriService Task Force on vaccinations for troops in the Gulf. On October 9, 1990, in a conference room at the army's Fort Detrick in Frederick, Maryland, the Defense Department convened the first meeting of the task force, which began to draft plans to "surge" the production of vaccines for anthrax and botulinum toxin. At the next meeting, on October 12, the acting chairperson, Colonel Garland McCarty, and a team of 13 other officers decided to give the task force and its mission the code name Project Badger.

Of more than 160 companies that were asked to make anthrax vaccine, all but one said no. Only Lederle-Praxis Biologicals of Pearl River. New York, signed on. Under the suspension of General Ronald R. Blanck and Colonel Harry Dangerfield, Project Badger organized the production of additional anthrax vaccine at the National Cancer Institute's Frederick Cancer Research and Development Center, located at Fort Detrick. Both Lederle and N.C.I. were unlicensed and unregulated by the FDA The plan called for subcontractors to ship vaccine to the only FDA-licensed manufacturer of anthrax vaccine, Michigan Biologic Products Institute (now BioPort), in Lansing, Michigan, for bottling, labeling, potency testing, and storage. This would have been another breach of federal safety regulations. As an earlier task force memo from October 10 stated "It must be noted that any firm other than Michigan will produce a vaccine under an I.N.D. and not a licensed product." I.N.D. stands for "investigational new drug," which requires special approval from the ED.A. for use. The army--as the executive agent for the Defense Department's biological warfare vaccine program -- should have sought that approval. It did not, and N.C.I. confirms that it never applied for an I.N.D. to produce anthrax vaccine. (Weth-Ayerst International, which now owns Lederle-Praxis, could not be reached for comment.) The FDA must approve all vaccines used in the United States and also license the production sites, military vaccines not excepted.

General Blanck disputes this scenario unequivocally. "I have no knowledge of anybody producing any anthrax vaccine other than Michigan," he says. "Nobody provided us or produced any vaccine, because the war ended, basically, is what happened."

By the first week of December 1990, Project Badger had begun plans to test other experimental vaccines on US. troops in the Gulf. Project scientists referred to this endeavor, rather portentously, as a "Manhattan-like project," or simply a "Manhattan Project." They organized a crash program to manufacture, or purchase, at least four experimental vaccines:

Enterotoxigenic E. Coli, Hepatitis A, Centoxin, and Shigella. At least two other experimental products were ultimately used:

PB. pills and botulinum toroid vaccine, for both of which the army received from the FDA a waiver of informed consent.

As for the mysterious "Vaccine A," variously cited as Vac A, Vac A-i, or Vac A-2 in the shot records of sick veterans such as Colonel Smith, declassified Defense Department documents identify it as anthrax vaccine. Dr. Gregory Dubay, who commanded the 129th Medical Company, a former Alabama National Guard unit out of Mobile, gave thousands of anthrax vaccinations to troops. He says, "Each soldier had to read a classified sheet of instructions, stating that he, or she, was receiving a secret shot, and that this was so for reasons of operational security. You don't want to tell the enemy that you're getting protection against one of his "weapons." Dubay-who both administered and took the vaccinations--says that he was under orders not to record the inoculations in the soldiers' medical records, and that the troops were not given a chance to decline the shots. "You were just marched through, and that was it.... Then our commander told us to destroy everything connected with it--the empty vials, the boxes, and the package inserts. We burned them all in 55-gallon steel drums back behind the tents."

The Pentagon says that 150,000 Gulf War troops received anthrax inoculations.

There are no documents available proving that the army used a squalene adjuvant in the unapproved vaccines, and the army has specifically denied it. But that still leaves Asa and Garry with more than 100 sick veterans who had their shots and now test positive for antibodies to squalene. Why might the army have used squalene instead of alum, the only adjuvant approved for human use? Probably because squalene was stronger. The licensed anthrax vaccine was relatively weak. Immunity wasn't achieved with one shot. It took six shots, administered over a period of 18 months, then an annual booster. In 1991, tens of thousands of U.S. troops arrived in Saudi Arabia only a month before the coalition forces began the ground war. Most could get only two shots out of the six-shot regime; some just got one. And there was, perhaps, an even more compelling reason to enhance the vaccine. Two former members of Project Badger say the coalition suspected that Iraq had engineered a more powerful anthrax bio-weapon. "We were concerned that Saddam may have made anthrax resistant to penicillin," says one, who does not wish to be identified. "We knew he had the skills to do that people who had trained in the United States, who had the skills to turn the bug into a resistant bug....The Brits were the ones who gave us the information, actually. We actually knew who those people were." The anthrax vaccine licensed by the ED.A. back in 1970 was designed to protect against anthrax germs that occasionally infect wool sorters and veterinarians. It was not known to be effective against a biowarfare agent that Iraq had possibly made more lethal. It is plausible that the army thought an experimental anthrax vaccine was worth the risk, especially since squalene was considered to be a superior adjuvant. However, this was a hypothesis.

Administering such a vaccine to the troops would have been tantamount to a human experiment. In order to conduct a legal trial with squalene, one would have to file an "investigational new drug" application with the FDA and have that application approved. This did not happen. In October 1997, the British revealed their attempts to boost the efficacy of their anthrax vaccine during the Gulf War by using a pertussis vaccine as an adjuvant. This controversial combination had caused serious

side effects in animals. But Asa believes she has evidence that the British also boosted at least one of their vaccines with squalene. In 1998, she tested five British veterans suffering from symptoms similar to those of Gulf War syndrome. Four were positive for antibodies to squalene. (The British Ministry of Defence denies using squalene in vaccines given to Gulf War troops.)

Among the 1991 coalition allies, the United States, Britain, Canada, and the Czech Republic have reported possible Gulf War-related illnesses. Of these, the first three admit to immunizing troops against biological-warfare agents.

Production of anthrax vaccine in unlicensed facilities did not end with the war. On August 29, 1991, six months after Iraq's surrender, the army surgeon general approved a $15.4 million contract for a company called Program Resources, Inc. (P.R.I.), a National Cancer Institute subcontractor that managed some of N.C.I.'s labs at Fort Detrick. Contracts were drawn up for fiscal years 1992 and 1993. In a secret Pentagon log kept continuously between August 8, 1990, and February 7, 1992, there are numerous references to the army's expanded vaccine-production program, but no record of any decision to halt it or to cancel the contract with P.R.I. Chuck Dasey, a spokesman at Fort Detrick, says that no anthrax vaccine was ever produced through the contract.

Presumably, the vaccines made during the Gulf War are part of the stockpile now being administered in the wake of the D.O.D.'s December 1997 decision to immunize all 2.4 million people in the armed services against anthrax. When Pentagon officials held a press conference about the mandatory immunizations last summer, they insisted that there had been only seven reported adverse reactions to the nearly 140,000 anthrax vaccinations that the military had given in the preceding six months. But according to the FDA's Vaccine Adverse Event Reporting System, there were at least 64 reports of reactions to the vaccine between September 2, 1998, and March 9, 1999. Activist Lori Greenleaf, a day-care provider in Morrison, Colorado, says that, based on her E-mail, there are a lot more military personnel reporting problems. Greenleaf began a grassroots campaign against mandatory anthrax immunizations because of her 23-year-old son, Erik Julius, who she says fell ill after taking the second of three anthrax shots in March 1998. She is swamped with messages from fearful enlisted men and women. Some of them have already received their anthrax shots.

"They've got rashes, chronic fatigue, hair loss, memory loss, muscle and joint pain, numbness in their extremities." Greenleaf says she does not know what an adjuvant is, and she has no idea what is ailing her son. "All I know is, my son and many other people are getting sick after getting the anthrax shots, and it sounds an awful lot like Gulf War syndrome."

Two servicemen who received their anthrax shots last year have tested positive for antibodies to squalene. One received vaccine from Lot No. FAVOZO, the same lot sold to Canada and Australia. The other serviceman received vaccine from Lot No. FAV030. Doses from this lot were also sold to Canada, according to that country's Department of National Defence. There is no evidence that every dose in FAVOZO and FAV030 is contaminated with squalene, but the antibodies in these two veterans suggest that anyone immunized from these lots may be playing "vaccine roulette." The U.S. has shipped anthrax vaccine from other lots to Germany, Israel, and Taiwan.

If the first casualty of war is truth, then the rule of law is a close second. As Cicero wrote, "Laws are silent in time of war." In the fall of 1990, the Pentagon began petitioning the FDA to waive informed-consent requirements on so-called investigational new drugs for the Persian Gulf. This was an ethical powder keg. In 1947, under the authority of the U.S. military in Nuremberg, Nazi scientists and physicians stood accused of war crimes and crimes against humanity for performing experiments on prisoners. Seven were hanged. Following the trials, US. judges drafted the l0-point Nuremberg Code, which was intended to govern all future experiments involving human subjects. The code's first and best-known principle was voluntary, informed consent. Until the Gulf War, the US. military had never argued that there should be any exceptions. In the end, the ED.A. decided to grant waivers for PB. pills and for the rarely used and as yet unlicensed vaccine botulinum toxoid.

In 1994, the Senate Veterans' Affairs Committee called this a violation of Nuremberg, the moral equivalent of the army's World War II-era mustard-gas tests on troops and its LSD experiments in the 50s and 60s. "We'd like to think these kinds of abuses are a thing of the past, but the legacy continues," said the committee chairman at the time, Senator Rockefeller.

"During the Persian Gulf War, hundreds of thousands of soldiers were given experimental vaccines and drugs ... these medical products could be causing many of the mysterious illnesses those veterans are now experiencing." Rockefeller could barely contain himself: "The D.O.D.'s failure to provide medical treatment or information to soldiers was unjustifiable, unethical, sometimes illegal, and caused unnecessary suffering."

He was referring to the experimental PB. pills and botulinum-toxoid vaccine. Rockefeller and his staff made no mention of unapproved anthrax vaccine, Project Badger, or the Persian Gulf "Manhattan Project."

Declassified documents show that Dr. Waiter Brandt, who helped organize the Internet report attacking Asa's theories, was one of the original members of Project Badger. Dr. Michael Roy, the physician who diagnosed Colonel Smith's illness as psychosomatic, also worked with members of the team in early 1991—the same doctors who planned the "Manhattan Project." The Pentagon says that most of the unit logs in which biological-warfare vaccinations were recorded are missing. Vanity Fair has found an army document showing that at least some of these records were ordered sent to the Office of the Surgeon General. General Ronald Blanck, who led the Project Badger Working Group on expanded vaccine production, is the current army surgeon general.

Some might understand the decision to accelerate vaccine production by any means possible when faced with the prospect of biological warfare. But Dr. Greg Dubay believes he should have been told if he was administering an altered version of an existing vaccine. "If I'd known it was a vaccine that had been tampered with--if it was tampered with--I would have declined the order to give it," he says. "You do not obey an unlawful order. If I knew it was done clandestinely, and had solid evidence, I would have disobeyed the order. The first oath of every physician is to do no harm. I don't know any physician who would purposely do something that is truly harmful, unless you're a Mengele or something."

A spokesman for BioPort says parts of Project Badger remain classified. Pentagon officials deny using a squalene adjuvant in any Gulf War vaccines and balk at Asa's allegation that some undiagnosed Gulf War illnesses are autoimmune diseases. Can a substance that induces autoimmune disease in a rat or a mouse be dangerous to a human being? Former Marine Corps tank commander Jeff Rawls has a solution for the naysayers. Rawls is a 31-year-old Gulf War veteran who now lives with his parents in upstate New York. He has experienced severe shrinkage of part of his brain and can barely walk. At +3, he is almost off the scale for antibodies to squalene.

"Inject them with the same thing and see what happens," Rawls says in a slurred and halting voice. "No one in their right mind would volunteer for something like that."

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(Rev. 01-31-2003)

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Precedence: PRIORITY **Date:** 12/12/2005

b6
b7C

To: [redacted] **Attn:** [redacted]
SSRA [redacted]

Counterterrorism **Attn:** SSA [redacted]
Inspection **Attn:** IIC [redacted]
Washington Field

From: Washington Field
AMX-3
Contact: SA [redacted]

b6
b7C

Approved By: [redacted]

Drafted By: [redacted]

Case ID #: 279A-WF-222936-LEADS (Pending) - 1071
279A-WF-222936-USAMRIID (Pending) - 1458

Title: AMERITHRAX;
MAJOR CASE 184

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b7C

Synopsis: To set lead to interview [redacted] employee [redacted]

Enclosure(s): For [redacted] Resident Agency (RA) only: confidentiality statement, NCIC printouts for [redacted] [redacted] printouts for [redacted] and photographs of [redacted]

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Details: The AMERITHRAX Squad 3 (AMX-3) of the Washington Field Office (WFO) has been conducting discrete investigations and interviews of visiting scientists having access to the Ames strain of *Bacillus anthracis* (*Ba*) while at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Frederick, Maryland. The Ames strain of *Ba* has been determined to be the bacterium responsible for the associated deaths and illnesses to the anthrax-laced letter mailings of September and October 2001. One such visiting scientist to USAMRIID has been identified as [redacted] Social Security Account Number (SSAN): [redacted] Date of Birth (DOB): [redacted] Investigation and interviews to date have indicated [redacted] and a [redacted] employee conducted research at USAMRIID which utilized the Ames strain of *Ba* in [redacted] This research was the result of a cooperative agreement between Bruce Ivins at USAMRIID and [redacted]

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[redacted] b6 b7C

One such location at USAMRIID known to contain the Ames strain of *Ba* was known as the [redacted] hot suite in USAMRIID building [redacted]. Investigation and interviews have determined that [redacted] had periods of unsupervised time within the [redacted] hot suite while working with the pathogenic Ames strain of *Ba*. Thus, [redacted] would have had the potential opportunity to abscond with an undetermined quantity of the Ames strain of *Ba*. b6 b7C b2 b7F

Discrete investigation and interviews pertaining to [redacted] has determined a number of un-resolved questions. Of principal importance is determining [redacted] exact whereabouts surrounding the two windows of opportunity associated with the anthrax-laced letter mailings of 2001. Secondly, [redacted] knowledge and experience in the field of microbiology and specifically [redacted] bacteriological interests and abilities should be determined. Thirdly, [redacted] interpersonal and employer-employee relationship skills, specifically as it relates to [redacted] conflict resolution skills should be determined. b6 b7C

Prior to the September 2001 anthrax-laced letter mailing, [redacted] personnel file indicated [redacted]

Discrete investigation of [redacted] surrounding the September 2001 anthrax-laced letter mailing indicated on [redacted] started work in [redacted]

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[redacted] Bank records during this period indicate [redacted] Bank and credit card records were unremarkable for evidence of out of state travel during the month of September, furthermore, there was no unusual activity or withdrawals noted. Available telephone records indicated [redacted] There is no activity on [redacted] bank, credit card, or telephone accounts that would indicate [redacted] whereabouts during the entire window of opportunity for the September 2001 anthrax-laced letter mailing.

Investigation surrounding the October 2001 anthrax-laced letter mailing indicated [redacted] was still working in the laboratory of [redacted] work schedule for [redacted] must be determined and any supporting documentation obtained. Bank records indicated an ATM withdrawal in [redacted] on [redacted] There was no further activity on the account until [redacted] Bank records, as well as credit card activity, were otherwise unremarkable during the month of October 2001. Available telephone records fail to time line [redacted] Although [redacted] 2001 bank and credit card records fail to indicate planning or evidence of out of state travel, [redacted] whereabouts during the entire window of opportunity for the October 2001 anthrax-laced letter mailing remains unknown.

Personnel records indicated the employee-employer relationship between [redacted] and [redacted] rapidly cooled, similar to his previous employment with [redacted]

WFO respectfully requests [redacted] Resident Agency (RA) to discretely interview [redacted] former supervisor [redacted]

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WFO seeks to obtain additional information pertaining to [redacted] that [redacted] may be knowledgeable of. It should be noted [redacted] Broadly WFO seeks to identify the following:

1. [redacted]
2. [redacted]
3. [redacted]

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4. [redacted]

WFO recognizes the above captioned outline to serve as a guide during the interview process and WFO relies heavily upon the interview Special Agent (SA) to expand the scope and nature of the interview as deemed appropriate.

Contact SA [redacted] for additional information and/or clarifications prior to interview at [redacted] (office) or [redacted] (cellular). Send interview results as well as [redacted] current employment information to SA [redacted] AMX-3, WFO.

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Descriptive Data:

Reference
Name -
Last:
First:
Middle:
Race:
Sex:
SSAN:
DOB:
Work Address(es) -
Pre Direction:
Street Name:

Street Suffix:

Post Direction:
City:
State:
Postal Code:
Country:
Work Phone #:
Possible Home Address(es) -
Street Name:
City:

[redacted]

[redacted]

State: [redacted]
Postal Code:
Country:
Possible Home Phone #:
Miscellaneous:

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NCIC query for [redacted], and SSAN: [redacted] indicated no current wants or warrants nor any identifiable criminal history (Attached).

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ACS database query for [redacted], and SSAN: [redacted] [redacted] met with negative results. ACS database query for address: [redacted] met with negative results.

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A query of [redacted] for telephone number: [redacted] as well as [redacted] met with negative results.

A query of [redacted] for [redacted] [redacted] all met with negative results.

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A query of Lexis Nexis database for [redacted] [redacted] met with positive results (Attached). No derogatory information was found.

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LEAD(s):

Set Lead 1: (Action)

[redacted]

[redacted]

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Interview [redacted] provide results to SA [redacted] AMX-3, WFO

Set Lead 2: (Info)

COUNTERTERRORISM

AT FBIHQ

Information Only.

Set Lead 3: (Info)

INSPECTION

AT WASHINGTON, DC

Information Only.

♦♦

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FD-302 (Rev. 10-6-95)

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 11/28/2005 b6 b7C

On November 23, 2005, [redacted] date of birth [redacted], social security number [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), 1425 Porter Street, Fort Detrick, Maryland, work telephone number [redacted] [redacted] After being advised of the identity of the interviewing Agent and Postal Inspector, [redacted] provided the following information:

[redacted] b6 b7C

[redacted] was shown a photograph taken by the Federal Bureau of Investigation (FBI) on July 23, 2004, during a search the FBI conducted at USAMRIID. This photograph depicted a InterMed Nunc box with what appear to be numerous tubes inside. Handwriting on the box states, "S. African Isolates Ba, Careful - Lyophilizing Vials. [redacted] did not recognize this box. However, [redacted] advised that if the lyophilizing tubes were stoppered with cotton, this could indicate that the tubes were not lyophilized recently, as using cotton plugs is the "old way". However, some individuals still use cotton plugs.

[redacted] recalled a foreign visiting scientist, [redacted] [redacted] who was from the United Kingdom and who visited USAMRIID for approximately one year in the late 1980s. [redacted] had access to *Ba* Ames, as [redacted] was developing antibodies for the detection and purification of *Ba* spores. [redacted] was visiting from [redacted], and had a Secret clearance level. [redacted] did not know whether [redacted] had access to USAMRIID's classified [redacted]

Investigation on 11/23/2005 at Ft. Detrick, Maryland

File # 279A-WF-222936-USAMRIID-\\\2 Date dictated N/A b6 b7C

by SA PI [redacted]

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[redacted]

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[redacted]

[redacted] could not recall whether [redacted] ever visited USAMRIID or whether the two simply met during an anthrax-related meeting.

[redacted] visited USAMRIID a number of times, [redacted]

[redacted] worked in the same [redacted] division as [redacted] when [redacted] was at Porton Down. [redacted] worked with environmental samples and with Ames, although [redacted] rarely ventured into USAMRIID's containment suites. [redacted]

[redacted] did not work directly with [redacted] so [redacted] did not know what [redacted] did while at USAMRIID. [redacted] believed [redacted] was involved with the [redacted]

[redacted] did not work with [redacted]

The interviewing Agent and Postal Inspector accompanied [redacted] to [redacted] office, whereupon [redacted] printed out several Microsoft Excel spreadsheets showing [redacted] *Ba* strains, including some strains procured from [redacted] In addition, [redacted] called [redacted] who was in the [redacted] suites, and [redacted] faxed the interviewing Agent and Postal Inspector four pages of strain information from inside the suites. [redacted]

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279A-WF-222936-USAMRIID

[redacted] also unsuccessfully looked through [redacted] filing cabinets for additional information on the above-mentioned foreign visiting scientists.

[redacted] advised that some of [redacted] laboratory notebooks may be in Suite [redacted] or [redacted] BRUCE IVINS would know whether [redacted] notebooks remained there.

(Rev. 01-31-2003)

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Precedence: ROUTINE **Date:** 12/28/2005

To: Washington Field **Attn:** A/SSA [redacted] AMX-2

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From: Washington Field
AMX-3
Contact: [redacted]

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Approved By: [redacted]

Drafted By: [redacted]

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Case ID #: 279A-WF-222936-LEAD (Pending) - 1097
279A-WF-222936-USAMRIID (Pending) - 1451

Title: AMERITHRAX;
MAJOR CASE 184

Synopsis: To set lead to review information gathered from certain computer hard drives located at the United States Army Medical Institute of Infectious Diseases (USAMRIID).

Reference: 279A-WF-222936-USAMRIID Serial 1075
279A-WF-222936-POI Serial 1420
279A-WF-222936-POI Serial 1421

Enclosure(s): Enclosed for Washington Field are copies of documents printed from various computer hard drives located at USAMRIID.

Details: On January 13, 2005, January 31, 2005, and February 3, 2005, electronic copies were made of computer hard drives operated by the following individuals: [redacted] Bruce Ivins, [redacted], and [redacted] Writer reviewed documents from all hard drives except those operated by Ivins, and found items of potential investigative interest. These items were electronically bookmarked and also printed for review. Of note for this lead are certain documents with interest of a scientific or genealogical nature. A brief synopsis of the documents submitted to Amerithrax-2 for review follows:

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Numbered	Computer Operated By	Of Possible Investigative Interest
1		

amx2

LEAD(s):

Set Lead 1: (Discretionary)

WASHINGTON FIELD

AT WASHINGTON, D.C.

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Review copied information from computers operated by [redacted] and [redacted] employees of the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) and take action, if appropriate.

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DATE 12-15-2006 BY 60324 uc baw/dk/cls

FD-302 (Rev. 10-6-95)

FEDERAL BUREAU OF INVESTIGATION

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Date of transcription 01/04/2006

[redacted] United States Army Medical Research Institute of Infectious Diseases (USAMRIID), date of birth [redacted], Social Security Account Number [redacted] home address [redacted] home telephone number [redacted] work telephone number [redacted]. was interviewed at [redacted] place of employment. After being advised of the identities of the interviewing Agents and the purpose of the interview, [redacted] provided the following information:

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[redacted]

[redacted] believes that BRUCE IVINS provided the Ames strain of *Ba* used in the aerosol challenge. [redacted] did not remember any specifics about the specific name of the sample or history related to the Ames strain of *Ba* used other than most likely IVINS provided the *Ba*. [redacted] does not recall knowing if the Ames used was from [redacted]. [redacted] was not sure how or where the *Ba* used in the study was stored. [redacted] did not perform any Ba research outside of [redacted]

Investigation on 1/4/2006 at Fort Detrick, Maryland

File # 279A-WF-222936-USAMRIID-1453 Date dictated

by [redacted]

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency;

During the interview, [redacted] reviewed [redacted] notes associated with the above mentioned study. The notes mentioned that during the challenge, [redacted] wanted [redacted] to be stationed on the cold side of Building [redacted] while [redacted] was on the hot side of Building [redacted] was to be in Suite [redacted] believes these notes were taken prior to the challenge. These notes also stated that [redacted] and IVINS would provide unspecified support for the study.

[redacted] did not keep a laboratory notebook for the abovementioned study. [redacted] believes that [redacted] or IVINS could provide additional information about when the *Ba* used in the study was moved from Building [redacted] to Building [redacted]. [redacted] did not know if there was a lypholizer was in Suite [redacted]

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[redacted]

During the interview, [redacted] provided to [redacted] a copy of a page of IVINS' laboratory notebook discussing Ames spores, the Ba Ames strain dilution scheme, and the fact that eight monkeys were to be involved in an aerosol challenge. This notebook page was dated 5/11/1998, two days before the aerosol challenge in [redacted] study was performed. [redacted] had never seen the information detailed in the laboratory notebook. [redacted] stated that since there were 8 monkey challenged in his aerosol challenge, this notebook page was most likely referring to the aerosol challenge that [redacted] planned. A copy of the laboratory notebook page is included in the accompanying 1A envelope.

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[redacted] provided photocopies of several emails discussing [redacted] study. [redacted] signed an FD-597 indicating the release of these emails. Photocopies of the emails and the original FD-597 are also included in the accompanying 1A envelope.

(Rev. 01-31-2003)

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Precedence: ROUTINE **Date:** 1/11/2006

To: Washington Field

From: Washington Field
AMX - 1 / NVRA
Contact: [redacted] b6 b7C

Approved By: [redacted] b6 b7C

Drafted By: [redacted]

Case ID #: 279A-WF-222936-USAMRIID (Pending) -1456

Title: AMERITHRAX
Major Case 184

Synopsis: To summarize information obtained from collected documentation and related interviews regarding aerosol challenges using *Bacillus anthracis* (Ba) Ames spores at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) and to provide an evaluation of the availability of Ames from aerosol challenges.

Reference: 279A-WF-222936-USAMRIID Serial 795

Enclosures: 1) Diagram of aerosol challenge equipment, 2) Three (3) pictures of flask containing RMR 1029.

Details: The USAMRIID facility located in Fort Detrick, Frederick, Maryland, houses a service division which specializes in exposing test animals to known pathogens and toxins for the purpose of "challenging" the efficacy of vaccines given to the animals prior to exposure. The vaccines are under development by other USAMRIID divisions or other laboratories which use the services of the Aerobiology Division for the challenges. The pathogens and toxins used are in liquid aerosol form when sprayed into the exposure chambers containing test animals.

In an attempt to identify potential sources of Ames strain Ba spores which could theoretically have been used in the preparation of anthrax-laced letters mailed in September and October 2001, the history of Ames aerosol challenges at USAMRIID from 1996 through 2001 was compiled.

From 12/9/1996 through 10/2001 there were 53 separate aerosol challenges involving Ba on 35 different days. The

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aerosol challenges were run in rooms [redacted] and [redacted] in Building [redacted] and room [redacted] in Building [redacted] at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID).

Documentation collected shows that there were only 7 Primary Investigators (PI) involved in the challenges. The noted PIs, verified through interview, were [redacted] Bruce Ivins, [redacted] and [redacted] There were 22 aerosol technicians and other personnel (some of the PIs were also listed in this category) documented as being involved in the aerosol process during this period as well. Sixteen of the 22 individuals documented were involved in 5 or less challenges with Ba. The aerosol technicians included [redacted] (believed to be [redacted] Bruce Ivins, [redacted] It should be noted that of the 53 Ba aerosol challenges run, [redacted] ran 37 of them. Through interviews, it has been suggested that [redacted] ran most of the challenges because of the sensitivity of the challenges being run as part of the vaccine efficacy studies.

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The test animals utilized in the Ames aerosol challenges included rabbits, non-human primates (NHPs), and mice.

The Ba used in the challenges was primarily produced and provided by Ivins. One batch of highly purified Ames spores produced for aerosol challenges was referred to as Reference Material Receipt (RMR) 1030. It was a combined batch of spores produced by Ivins [redacted] When this material began to run out, an extensive vaccine challenge was planned which required a very large amount of highly purified Ames spores. Ivins contracted Dugway Proving Grounds to produce Ames spores in fermenters and provide them to USAMRIID for use in this study. The Dugway Ames was purified by Ivins and subsequently combined with multiple batches of Ames spores produced by Ivins [redacted] at USAMRIID using a Leighton-Doi broth technique. The combined Ames spore preparation was referred to as RMR 1029. RMR 1029 and 1030 were the primary sources of challenge material during the period for which Ba challenge information was compiled. However, some challenges were conducted using other strains of Ba. The source of the Ames material used in each challenge is provided if it was documented or could be verified through interviews.

In order to explain the evaluation of the availability of Ames material used for and remaining after aerosol challenges, a description of the process and equipment is provided.

AEROSOL CHALLENGE EQUIPMENT (refer to enclosed diagrams):

Nebulizer

A nebulizer, also known as a collison, was used to generate aerosolized particles of the challenge agent. A collison was a specific type of nebulizer. The nebulizer was comprised of [redacted] b2 b7F

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The first documented use of the new BGI nebulizers during a Ba Ames challenge was on July 17, 2000.

Aerosol Chamber

The size of the chamber used during a given aerosol challenge was animal-dependent. Some types of chambers were designed to contain the whole animal during an exposure, but other chambers were designed to expose only the nose of the animal. These systems were referred to as nose-only exposure chambers. Similarly, head-only chambers were sometimes used. In these chambers, only the head of the animal (sealed around the neck at the junction) was inserted into a sealed chamber for aerosol exposure.

All Glass Impinger (AGI)

Attached to the aerosol chamber was an AGI, designed to mimic the nasal passage of a human.

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TRAINING OF AEROBIOLOGY PERSONNEL:

became the defacto experts on the aerosol system and process. Up until December 2000, ran the majority of the aerosol challenges conducted in the Aerobiology Department at USAMRIID. When others began to participate in the process, taught the process to their civilian and military colleagues. Due to the complexity of the system and process, most of the training was process oriented rather than theoretical in nature.

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USAMRIID SPACE UTILIZED FOR AEROSOL CHALLENGES:

The anthrax aerosol challenge and post-challenge steps were conducted in rooms , and in Building and Suite in Building at USAMRIID. No other rooms have been identified as having been utilized for Ames aerosol work within Building or at USAMRIID. Suite was only utilized while Building was under renovation in the mid-1990's, prior to Ivins' production of Reference Material (RMR) 1029. There is no documentation to suggest that RMR 1029 was ever taken into Suite

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Room of Building was used as a preparation and post-challenge room for the anthrax aerosol challenges. This space was utilized primarily by Ivins and his department,

however, there were occasions when the room was shared with other PIs. For example, in 1998 and 1999 [redacted] utilized room [redacted] for [redacted] *Brucella* study work. b6 b7C

It was documented during several interviews that Ivins' group did not keep room [redacted] very clean and tidy. Post-challenge agar plates were left on counters, the incubators were left full of material, samples in the refrigerator were not disposed of in a timely manner, and "hot" trash was allowed to build up for weeks prior to being autoclaved. One former military aerobiology technician [redacted] commented that [redacted] had to clean Ivins' trash himself out of safety concerns. [redacted] said that the civilians at USAMRIID did not take safety seriously. [redacted] commented that when [redacted] looked at the agar plates that had sat in the biohazard trash bags for several days or weeks in 115, they were covered with bacterial growth.

Room [redacted] was used to prepare the nebulizer and AGI's for exposures. Aerobiology Department personnel primarily used this room. b2 b7F

Rooms [redacted] and [redacted] were utilized to run the aerosol exposures. All of the aerosol challenges were run in room [redacted] until December 5, 2000 when the first anthrax aerosol challenge was run in room [redacted]. Room [redacted] was subsequently used as an additional Ames challenge lab. The challenges in room [redacted] until December 5, 2000 used two hoodlines, titled hoods #1 & #2, for the exposures. After December 5, 2000 only the #1 hoodline was used in room [redacted]. Documentation shows that another hoodline, hood #8, in room [redacted] was utilized for subsequent anthrax challenges.

AEROSOLIZATION PROCESS:

The aerosol process was generally outlined in several Standard Operating Procedures (SOPs) used by the Aerobiology Department. The SOPs include: b2 b7F

SOP Number	Title
[redacted]	

[redacted] b2 b7F

PREPARATION OF AMES CHALLENGE MATERIAL:

The Ba used in the challenges was maintained in suite [redacted] of Building [redacted] by Ivins. According to [redacted] prior to a challenge, Ivins transported a large flask containing the liquid preparation of Ba to be used for the challenges. The flask was stored in room [redacted] From the flask, the investigators prepared 15 ml conical tubes filled with 10 ml of Ba solution. The tubes were kept in the refrigerator in room [redacted] of Building [redacted] until needed for the challenge. Information provided during other interviews contradicts the information provided by [redacted] and states that Ivins would prepare the conical tubes in suite [redacted] and transport only the tubes, and not the entire flask, to Building [redacted] This portion of the investigation remains ongoing. b6 b7C b2 b7F

No pre-challenge Ames was kept in the walk-in cooler on the first floor of Building [redacted], but post-challenge material was stored there. The length of time left-over Ames was stored remains controversial. One unresolved contradiction is that some interviewees said that if a conical tube was missing from room [redacted] it would be noticed since they knew how many tubes they prepared. Other interviewees said that extra tubes were prepared in case one was dropped or damaged, so there were more tubes than test animals. The left-over material was not carefully inventoried or tracked. No one would notice if liquid Ames was taken out of the tubes and replaced with water. b2 b7F

The spores were heat-shocked prior to the challenge to remove vegetative matter and stimulate germination. The Ba Ames spores were suspended in a water solution. The starting concentration of that suspension, which was transferred to the collison nebulizer, was normally 10^9 colony forming units (cfu) per ml. The AGIs captured samples of the air inside the exposure

chamber, so the amount of Ba was diluted in the AGIs compared to the starting Ba solution in the nebulizer.

POST-CHALLENGE PROCESS:

The post-challenge process was intended to determine the amount of pathogen or toxin actually breathed in by each animal. This determination was made by using information collected throughout the challenge (equipment settings, gauge readings, and animal respiration monitoring) and by determining the concentration of Ba collected into the AGIs by growing the Ba on agar plates and counting the colonies.

Following an aerosol challenge, approximately 7 ml of the original Ba starting solution remained in the nebulizer. According to Ivins, it was normal procedure to autoclave the remaining material in the nebulizer prior to removing it from the hood at the end of the day. The technicians who actually carried out such tasks were not confident that this material was always autoclaved prior to removal from the hoodlines. The exterior of the AGIs was sprayed with a bleach solution prior to removal from the hood so the AGI contents could be plated to determine the concentration of Ba.

Following an aerosol challenge, Ivins conducted most of the post-challenge work. Ivins was the PI for the majority of the anthrax studies, and he preferred to do his own post-challenge work. [redacted] sometimes assisted Ivins with the post-challenge work. b6 b7C

The post-challenge plating to determine the concentration of Ba was conducted by creating serial dilutions of the collected samples in the AGIs. The dilution tubes were kept in the walk-in cooler on the [redacted] floor of Building [redacted] because there was not enough room in the refrigerator in room [redacted] Several individuals stated that the 15 ml conical tubes containing the dilutions were disposed of after the post-challenge plating was completed, but other information suggested these tubes may have remained in the walk-in cooler on a long-term basis. [redacted] b2 b7F

[redacted] b2 b7F

[redacted]

[redacted]

The post-challenge plating was conducted primarily using [redacted] The plates were read on the morning following the challenge.

DISPOSAL OF POST-CHALLENGE MATERIAL:

[redacted] b2 b7F

[redacted] b2 b7F

Information obtained from interviews indicated that standard protocol is and was for the post-challenge plates to be autoclaved in the challenge labs prior to disposal in the basement, meaning that this material should have been autoclaved twice. Several technicians stated that this was not always the practice. All material on the hot side of Building [redacted] was considered to be "hot", and it was the opinion of several technicians that the PIs and their staff were not concerned if material was autoclaved before leaving a room or lab for disposal. The main concern was that material was autoclaved in the basement before leaving the hot side of the building. b2 b7F

DOCUMENTED Ba AEROSOL CHALLENGES:

The information below was taken from four aerosol exposure log books obtained from the Aerobiology Division, information furnished by Ivins regarding Ames stock distribution within USAMRIID, interviews of USAMRIID staff, and protocol proposals. Copies of the aerosol exposure log books are maintained in the 1A section of the captioned file.

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12/9/1996 Exposure 97-007H, Protocol F96-17
PI: [redacted] Tech: [redacted]
Room [redacted] Hood 4, 5 animals exposed

12/11/1996 Exposure 97-008H, Protocol F96-17
PI: [redacted] Tech: [redacted]
Room [redacted] Hood 4, 23 Rabbits exposed

12/12/1996 Exposure 97-009H, Protocol F96-17
PI: [redacted] Tech: [redacted]
Room [redacted] Hood 4, 22 Rabbits exposed

12/13/1996 Exposure 97-010H, Protocol F96-17
PI: [redacted] Tech: [redacted]
Room [redacted] Hood 4, 21 Rabbits exposed

12/17/1996 Exposure 97-011H, Protocol F96-16
PI: [redacted] Tech: [redacted]
Room [redacted] Hood 4, 13 NHPs exposed

10/27/1997	First entry on RMR Record for RMR 1030. Documents total amount of material as 21 x 5 ml tubes. A subsequent entry in the middle of the second page shows another 36 x 1ml tubes.
11/6/1997	1 x 5 ml tube of RMR 1030 was removed from stock as per RMR Record and initialed by Ivins.
11/6/1997	Exposure 98-001, Protocol F97-08 PI: [redacted] IVINS Tech: [redacted] Ba Ames Stock RMR 1030 Room [redacted] No animals exposed; 10 runs were completed with dilutions of 10^{-4}, 10^{-3}, 10^{-2}, 10^{-1}, and undiluted.
11/11/1997	19 x 5 ml and 35 x 1 ml tubes of RMR 1030 was removed from stock as per RMR Record and initialed by Ivins (130 ml of RMR 1030). This is the final entry on the RMR Record for 1030. This documents that as of 11/11/1997 there was 0 ml of RMR 1030 material remaining in stock.
11/12/1997	Exposure 98-002, Protocol F97-08 PI: [redacted] IVINS Tech: [redacted] Ba Ames Stock RMR 1030 Room [redacted], Hood 1 & 2, 30 Rabbits exposed 2 x 10^9 cfu/ml
11/13/1997	Exposure 98-003, Protocol F07-08 PI: [redacted] IVINS Tech: [redacted] Ba Ames Stock RMR 1030 Room [redacted] Hood 1 & 2, 30 Rabbits exposed 2 x 10^9 cfu/ml
11/18/1997	Exposure 98-004, Protocol F97-08 PI: [redacted] IVINS Tech: [redacted] Ba Ames Stock RMR 1030 Room [redacted] Hood 1 & 2, 30 Rabbits exposed 2 x 10^9 cfu/ml
Note:	**The challenge on 11/18/1997 represents the last time RMR 1030 was utilized at USAMRIID and is the depletion of the RMR 1030 stock.**

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PROTOCOLS USING Ba:

Protocol D98-03
Title: Detection of *Bacillus anthracis* from Nonhuman primates after Aerosol Exposure Using Non-invasive Methods of Sample Collection
Objectives: The objectives of this study are to a) acquire noninvasive samples from *B. anthracis* nonhuman primates exposed to aerosolized *B. anthracis* spores in order to establish what specimens and when during the first 24 hours *B. anthracis* organisms can be recovered and b) to determine the applicability of current molecular and immunological methods for detecting *B. anthracis* in these types of samples.

5/13/1998 Exposure 98-035, Protocol D98-03
PI: [redacted] Tech: [redacted]
Dugway Ba Ames Stock
Room [redacted] Hood 1, 8 NHPs exposed
≈10 LD_{50}.

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Note: **This is the first aerosol challenge utilizing the "Dugway Material" according to [redacted] There is no entry in Ivins' logs to indicate that [redacted] was given a sample of RMR 1029 or that a sample was given out to anyone in this time period. There is no documentation to verify that this challenge utilized material from RMR 1029 or from any other material linked to Dugway. However, it is documented that RMR 1029 was the only Ames spore preparation containing Dugway Ames located at USAMRIID prior to the mailings. RMR 1030 did not contain Dugway material.**

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From 9/30/1998 through 8/17/1999 there were 10 anthrax aerosol challenges completed, however, non-Ames strains were utilized. All of these challenges listed either Ivins or [redacted] as the PI and [redacted] or [redacted] as the aerosol technician. [redacted] was listed as having been involved with the challenge on 10/14/1998. These challenges were done as part of Protocols number F99-07 and B98-03. The Ba strains used included [redacted]

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Protocol D99-02
Title: Collection of Positive Control Specimens for Development, Validation, and Fielding of Diagnostic Assays for the Detection of *Bacillus anthracis*
Objective: The objectives of this study are to acquire biological samples (blood, plasma, and serum) from non-human primates exposed to *B. anthracis* by aerosol route in order to:

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- Test and compare the following diagnostic assays:
  - [redacted]
- Acquire validation and check samples
  - [redacted]
- Develop new, more sensitive *B. anthracis* detection technologies
- Search for early pathologic, physiologic, or clinical disease markers that may support the results of various diagnostic assays or provide new diagnostic indices.

Experimental Design:

Nine anthrax-naive, non-human primates (possibly six additional animals, see below) will be exposed to approximately [redacted]

9/14/1999

Exposure 99-044, Protocol D99-02
PI: [redacted] Tech: [redacted]
Ba Ames Stock 1029
Room [redacted] Hood 1, 9 NHPs exposed
4.4 x 10^7 cfu/ml, 10.0 x 10^7 cfu/ml,
13.8 x 10^7 cfu/ml, 10.8 x 10^7 cfu/ml,
13.8 x 10^7 cfu/ml, 10.8 x 10^7 cfu/ml,
11.2 x 10^7 cfu/ml, 13.8 x 10^7 cfu/ml,
7.4 x 10^7 cfu/ml, 11.2 x 10^7 cfu/ml,
7.2 x 10^7 cfu/ml

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Note: **This is an aerosol challenge utilizing the "Dugway Material" according to [redacted] There is no entry in the RMR Record for 1029 to indicate that [redacted] was given a sample of RMR 1029 or that a sample was given out to anyone in this time period. In an entry into one of Ivins' notebooks on 9/17/1998, he indicates that he provided [redacted] GLP Ames spores for the aerosolization of monkeys. "GLP Ames" is another term used to reference RMR 1029.** b6 b7C

10/15/1999 Exposure 00-0002, Protocol D99-02
PI: [redacted] Tech: [redacted]
Ba Ames Stock
Room [redacted] Hood 1, 3 NHPs exposed b6 b7C b2 b7F

Note: **There is no entry in Ivins' logs to indicate that [redacted] was given a sample of RMR 1029 or that a sample was given out to anyone in this time period. There is no documentation to veify that this challenge utilized material derived from RMR 1029 or in any way linked to Dugway.** b6 b7C

Protocol B00-03
Title: Selection between two recombinant PA preparations for development of a potency assay and a correlate of immunity in rabbits.
Objective: The first objective of this research is to determine in the rabbit aerosol challenge model the potency of two recombinant PA proteins when combined with Rehydragel adjuvant. The hypothesis is that there will be no difference in the potency of the two recombinant PA proteins. A second objective of the research is to determine the efficacy of the rPA vaccine and to evaluate the serological response to immunization by ELISA and toxin neutralization assay (TNA) to confirm the correlate of immunity in the rabbit.

Experiment #1: [redacted] b2 b7F

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Experiment #2: Potency assay and determination of an in vitro correlate with survival in rabbits receiving only 1 immunization of rPA.

Experiment #3: Confirmation of Experiment #2 for verification of in vitro correlate measurements. Total number of rabbits: 90

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Experiment #4: Reproducibility of in vitro correlate findings.

[redacted]

Experiment #5: rPA vaccine efficacy study and development of an in vitro correlate with two (2) doses of rPA vaccine.

[redacted]

Experiment #6: Confirmation of Experiment #5. [redacted]

4/3/2000	Part 1 of multi-part aerosol study (B00-03) 75 ml used
Note:	**It is assumed that this 75 ml was used for the 4/5/2000, 4/7/2000, and 4/10/2000 aerosol challenges.**
4/5/2000	Exposure 00-022, Protocol B00-03 PI: [redacted] Tech: [redacted] Ba Ames Stock RMR 1029

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b6
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Room [redacted] Hood 1 & 2, 40 Rabbits exposed

4/7/2000 Exposure 00-023, Protocol B00-03
PI: [redacted] Tech: [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 2, 36 Rabbits exposed

4/10/2000 Exposure 00-024, Protocol B00-03
PI: [redacted] Tech: [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 2, 34 Rabbits exposed

Aerosol logs show that a total of 110 animals were exposed during this part of study B00-03.

7/7/2000 Part 2 of multi-part aerosol study (B00-03)
40 ml used

Note: **It is assumed that this 40 ml was used for the 7/17/2000 and 7/18/2000 aerosol challenges.**

7/17/2000 Exposure 00-039, Protocol B00-03
PI: [redacted] Tech: [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 2, 28 Rabbits exposed
3×10^9 cfu/ml

Note: **This was the first aerosol challenge using the new collison nebulizers.**

7/18/2000 Exposure 00-040, Protocol B00-03
PI [redacted] Tech: [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 2, 28 Rabbits exposed
3×10^9 cfu/ml

Aerosol logs show that a total of 56 animals were exposed during this part of study B00-03.

Protocol F00-11
Title: Efficacy and immune response of two lots of AVA in the rabbit model of inhalational anthrax.
Objectives:
1. To determine if 2 lots of AVA (FAV 009 and FAV 032) made several years ago, are still efficacious in the rabbit model of inhalational anthrax.
2. To compare the immunogenicity of the 2 lots of AVA in the rabbit model.

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12/4/2000 Bioport Rabbit Challenge, 100 ml used

Note: **It has been indicated by [redacted] that F00-11 was a Bioport AVA study conducted at USAMRIID.**

12/5/2000 Exposure 01-012, Protocol F00-11
PI: [redacted] Tech: [redacted] IVINS, [redacted]
Ba Ames Stock RMR 1029
Room [redacted], Hood 1 & 2, 33 Rabbits exposed

12/7/2000 Exposure 01-013, Protocol F00-11
PI: [redacted] Tech: [redacted] IVINS, [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 8, 32 Rabbits exposed

12/11/2000 Exposure 01-014, Protocol F00-11
PI: [redacted] Tech: [redacted] IVINS, [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 8
32 Rabbits exposed

12/13/2000 Exposure 01-015, Protocol F00-11
PI: [redacted] Tech: [redacted]
Ba Ames Stock RMR 1029
Room [redacted], Hood 8, 16 Rabbits exposed

Aerosol logs show that a total of 113 animals were exposed during study F00-11.

4/6/2001 Part 3 of multi-part aerosol study (B00-03)
60 ml used

Note: **It is assumed that this 60 ml was used for the 4/10/2001 and 4/12/2001 aerosol challenges.**

4/10/2001 Exposure 01-039, Protocol B00-03
PI: [redacted] Tech: [redacted]
IVINS, [redacted]
Ba Ames Stock RMR 1029
Room [redacted], Hood 1 & 8
28 Rabbits exposed

4/12/2001 Exposure 01-040, Protocol B00-03
PI: [redacted] Tech: [redacted] IVINS [redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 8
27 Rabbits exposed

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Aerosol logs show that a total of 55 animals were exposed during this part of study B00-03.

Protocol B01-07
Title: Evaluation of Antibiotic Treatments against Bacterial Biological Warfare Agents (anthrax, plague, glanders) in Mice.
Objectives:
Susceptibilities to current, and many new or experimental antibiotics, have been established in vitro for *B. anthracis* and *B. mallei* in our laboratory and this screening continues (attached manuscripts). Antibiotic MICs for *Y. pestis* are currently being determined. The true test of the effectiveness of any antibiotic is the ability to contribute to a successful treatment in an infection model. The working hypothesis is that if *B. anthracis*, *B. mallei* or *Y. pestis* were used in a biowarfare/terrorist situation these microorganisms would most likely be resistant to the current antibiotics that are designated for treatment. The objective of this protocol is to identify additional antibiotics that could be used as alternate treatments should resistance to current treatments occur.
Agents: Ames strain of *B. anthracis* Registry No. 2244

6/26/2001 Exposure 01-065, Protocol B01-07
PI: [redacted] Tech: [redacted]
Ba Ames Registry No. 2244
Room [redacted] Hood 1, 60 Mice exposed
1×10^4, 1×10^5, 1×10^6, 1×10^7, 1×10^8, and 1×10^9

Note: **Antifoam was utilized as part of this aerosol challenge. There is no record in Ivins' logs to indicate that [redacted] was given any of RMR 1029 prior to 10/4/2001.**

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7/9/2001 Part 4 of multi-part aerosol study (B00-03)
50 ml used

Note: **It is assumed that this 50 ml was used for the 7/10/2001, 7/11/2001, and 7/12/2001 aerosol challenges.**

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7/10/2001 Exposure 01-067, Protocol B00-03
PI: [redacted] IVINS Tech: [redacted]
[redacted]
Ba Ames Stock RMR 1029
Room [redacted], Hood 8, 15 Rabbits exposed

7/11/2001 Exposure 01-068, Protocol B00-03
PI: [redacted] IVINS Tech: [redacted]
[redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 8, 14 Rabbits exposed

7/12/2001 Exposure 01-069, Protocol B00-03
PI: [redacted] IVINS Tech: [redacted]
[redacted]
Ba Ames Stock RMR 1029
Room [redacted] Hood 1 & 8
29 Rabbits exposed

Aerosol logs show that a total of 58 animals were exposed during this part of study B00-03.

8/14/2001 Exposure 01-079, Protocol B01-07
PI: [redacted] Tech: [redacted]
Ba Ames Registry No. 2244
Room [redacted] Hood 1, 40 Mice exposed
1 x 10^7 cfu/ml, 1 x 10^8 cfu/ml, 1 x 10^9 cfu/ml, 1 x 10^{10} cfu/ml

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Note: **Antifoam was utilized as part of this aerosol challenge. There is no record in Ivins' logs to indicate that [redacted] was given any of RMR 1029 prior to 10/4/2001.**

The 8/14/2001 aerosol challenge was the last aerosol challenge utilizing Ba Ames at USAMRIID prior to the anthrax mailing on September 17, 2001.

ANTIFOAM:

Antifoam was used in aerosol challenges when the challenge material contained large amounts of protein. For this reason, antifoam was used more often with various toxins and viral preparations rather than with bacteria. There were rare occasions that antifoam was added to the collison nebulizer in the challenges. It was added to the nebulizer if the nebulizer became foamy or gummy during a challenge. When antifoam was

added to the AGI, it settled to the top of the solution. The purpose of antifoam was to prevent bubbling inside the nebulizer or AGI which caused poor aerosolization, or material loss when the material stuck to the sides of the container.

The primary aerosol technicians were questioned about the use of antifoam as part of the aerosol process. All commented that it was not standard operating procedure (SOP) to utilize antifoam with Ba. Because the Ba aerosols used only water in the process, there was not usually enough foam created to require the use of antifoam.

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The only documented uses of antifoam during Ba Ames aerosol challenges were on 6/26/2001 and 8/14/2001. Both of these challenges were conducted as part of Protocol B01-07 with [redacted] as the PI for the study. The aerosol technicians who ran the challenges were [redacted] on 6/26/2001 and [redacted] on 8/14/2001. When questioned about the instances, both technicians commented that antifoam was utilized at the request of [redacted] did not recall requesting the use of antifoam.

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On the 6/26/2001 challenge, the concentrations of the Ba suspensions placed into the nebulizers were 1 x 10^4 cfu/ml, 1 x 10^5 cfu/ml, 1 x 10^6 cfu/ml, 1 x 10^7 cfu/ml, 1 x 10^8 cfu/ml, and 1 x 10^9 cfu/ml. Each run exposed 10 mice at a time. The Aerosol Description Form noted that "AGIs contained 10 ml of PBS and 40 microliters of antifoam agent".

In the 8/14/2001 challenge, the concentrations of the Ba suspensions placed into the nebulizers were 1 x 10^7 cfu/ml, 1 x 10^8 cfu/ml, 1 x 10^9 cfu/ml, 1 x 10^{10} cfu/ml. It was noted on the Aerosol Exposure Sheet for run 4, "lots of foam". The Aerosol Description Form prepared by [redacted] noted that "AGIs were supplemented with 40 microliters 1:5 dilution antifoam + 10 ml PBS provided by [redacted] Each of the 4 runs exposed 10 mice at a time. b6 b7C

All of the aerosol technicians said that they would have noted on the challenge paperwork whether or not they had used antifoam during an aerosol challenge, however, they would not have informed [redacted] or the PIs of the use of antifoam unless specifically asked. If [redacted] or the PIs read the log notes, they would have known whether or not the emulsion was used.

Difficulty was encountered during aerosol challenges when a high concentration of the challenge agent was present in the nebulizer, or when the challenge agent possessed a high protein content, or when the collection material in the AGI contained a high protein concentration. Bubbling of the challenge agent in the nebulizer interfered with aerosolization, thus diminishing the effectiveness of the challenge. During aerosol challenges of substances with high protein concentrations, bubbling often occurred in the AGI and material was sucked into the vacuum tube attached to the AGI. As a result, erroneous post-challenge concentrations were obtained. A lipid emulsion was used to prevent the bubbling. An antifoam emulsion was preferred; however, if antifoam was unavailable, olive oil was used as an alternative. The aerosol technicians preferred not to alter or add to the biological material provided by the investigator; however, successful completion of some aerosol challenges necessitated the addition of a lipid emulsion.

If necessary, the antifoam emulsion was added to the nebulizer. During anthrax challenges, a clumpy, flocculent, snow-like, milky material built up on the glass walls of the nebulizer. [redacted] attributed this occurrence to the high concentration of the anthrax slurry placed in the nebulizer. Occasionally antifoam emulsion was added to the nebulizer to minimize bubbling and clumping of the anthrax. Approximately 40-50 μL of antifoam were added to the nebulizer. The use of b6 b7C

antifoam emulsion did not interfere with the function of the cipritube jets. Technicians were careful to add minimal amounts of the antifoam emulsion, as the addition of excessive antifoam emulsion to the nebulizer increased the viscosity of the biological material to the point of interference with effective aerosolization. [redacted] noted that up to [redacted] emulsion may have been used in the nebulizer during some plague aerosol challenges. b6 b7C b7F

For anthrax challenges, the AGI collection solution was [redacted] It was noted that antifoam emulsion was not a necessary addition to the AGI for anthrax experiments, as the water did not bubble enough to disrupt the impingement process. b2 b7F

The general SOP for conducting an aerosol challenge contained instructions for the use of antifoam emulsion; however, the SOP did not mention the option to use olive oil.

An enlisted person ordered the antifoam through the USAMRIID supply system. The consistency of the antifoam was very thick and similar to that of mayonnaise. Due to the high viscosity of the antifoam, it was difficult to pipette. As a result, the antifoam was added to the PBS. The antifoam emulsion was mixed by estimation and not measured exactly. Antifoam was never used in the concentrated form during aerosol challenges.

The dilution of the antifoam with PBS was done in the laminar flow hoods in room [redacted] The diluted antifoam emulsion was stored in an amber bottle in room [redacted] of Building [redacted] The aerosol technicians sometimes made a large volume of the antifoam emulsion, which was stable for weeks. Eventually, the antifoam separated from the rest of the solution; however, shaking the bottle re-mixed the solution. b6 b7C b2 b7F

[redacted] b2 b7F

OLIVE OIL AS AN ALTERNATIVE TO ANTIFOAM:

The option of using olive oil as a substitute for antifoam was not common knowledge at USAMRIID. [redacted] learned from [redacted] that [redacted] could use olive oil instead of antifoam. There are several accounts of bottles of Bertolli and Pompei olive oil being maintained on the hot side of Building [redacted] in one of the aerosol rooms. [redacted] stated that a bottle of Bertolli olive oil was kept in the preparation rooms used by the Aerobiology group in Building [redacted] used extra virgin olive oil; however, the brand or type of olive oil did not matter. There was not a particular reason as to why extra virgin olive oil was used.

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[redacted] noted that olive oil could be used instead of antifoam and was sometimes used in the AGIs at USAMRIID. No documentation was found to suggest that olive oil was ever used in an Ames aerosol challenge. The amount of olive oil used in a challenge was only a drop.

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The olive oil was purchased from a local grocery store or possibly from the commissary at Fort Detrick and was not ordered through USAMRIID's purchasing system. [redacted] stated that he always used glass bottles of olive oil and could not recall ever using a plastic bottle. [redacted] indicated that the bottles of olive oil were small. One bottle of olive oil was kept on the cold side of Building [redacted] in room [redacted] and another bottle stored on the hot side in the glassware cabinet in room [redacted] Extra bottles of olive oil were not maintained by the Aerobiology group in Building [redacted]

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It has been stated that when olive oil was used in the aerosol challenges, it was added without prior mixing with any other solution. A 1 ml plastic pipette was used to remove olive oil directly from the bottle. One drop of olive oil was added to the material in the AGI. [redacted] noted that one (1) bottle of olive oil lasted for years before being emptied; however, bottles occasionally disappeared. Antifoam was taken from the laboratory by other personnel much more often than was the olive oil.

ICE:

Ice was used frequently in the process of handling the material used in the aerosol challenges. Samples were typically maintained in ice baths prior to use. Ice machines in room [redacted] and in the hallway between rooms [redacted] and [redacted] in Building [redacted] were the sources of the ice used. Commercially purchased ice was never used. If the machines in Building [redacted] were not functioning, the technicians used one of the machines in Building [redacted]

ACCESS:

In order to evaluate the access to the Ames material used in the aerosol challenges, a review of the electronic entry logs into Building [redacted] at USAMRIID for the period from 00:02 on August 1, 1998 until 11:00AM on October 9, 2001 was completed. August 1, 1998 is the first entry in the electronic entry logs for Building [redacted] at USAMRIID. 11:00AM on October 9, 2001 was identified as the close of the window of opportunity for mailing the anthrax laced letters to Senators Daschle and Leahy. This review showed that 300 identifiable individuals entered or attempted to enter rooms [redacted] and/or [redacted] (the male and female change rooms with keypads into the hot side), or utilized the keypads in either of those rooms during the period of review. Another thirty(30) individuals utilized the access points but used non-identifiable badges or non-identifiable personal identification numbers (PINs). Below are the names of persons who accessed the hot side of Building [redacted] during this period prior to the mailings. This list includes security guards, computer specialists, housekeeping personnel, equipment repair specialists, laboratory technicians and researchers. The technicians and researchers are from various fields including bacteriologists, virologists, and toxinologists.

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It should be noted that several aspects of the time frame RMR 1029 was stored in Building [redacted] are still under intense investigation.

[redacted]

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RMR

1029

SEP 3 2004

GLP Ames

SEP 3 2004

SEP 3 2004

(Rev. 01-31-2003)

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED
DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Precedence: ROUTINE **Date:** 01/11/2006

To: Washington Field

From: Washington Field
AMX-3
Contact: SA [redacted]

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Approved By: [redacted]

Drafted By: [redacted]

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Case ID #: 279A-WF-222936-USAMRIID (Pending) - 1462

Title: AMERITHRAX;
MAJOR CASE 184

Synopsis: To provide a periodic update for the ongoing project to review USAMRIID laboratory notebooks. This update summarizes information obtained from numerous laboratory notebooks belonging to various researchers and found in either the United States Army Medical Research Institute of Infectious Disease (USAMRIID) library or in the individual researcher's office or space.

Reference: 279A-WF-222936-USAMRIID Serial 882
279A-WF-222936-USAMRIID Serial 1131
279A-WF-222936-USAMRIID Serial 1179

Enclosure(s): Enclosed is a Microsoft Excel spreadsheet listing numerous reviewed laboratory notebooks.

Details: Numerous notebooks with entries from various USAMRIID researchers were reviewed. Numbers were assigned by the USAMRIID library to all laboratory notebooks issued to Principal Investigators. These notebooks were reviewed to identify any individuals who had access to *Bacillus anthracis (Ba)* Ames and were not already under investigation, previously-unknown places where *Ba* Ames was stored, people within USAMRIID or people and places outside USAMRIID to whom *Ba* Ames was distributed by this research group, and any other details of interest. Notebooks are mentioned in this communication only if pages of possible investigative interest were copied; these notebooks, along with notebooks with no pages of possible investigative interest, are listed on the enclosed spreadsheet and located on the "S" drive under "Notebook Compilation".

Notebook [redacted] was issued April 5, 2000 to [redacted] and was entitled [redacted] Page 1 revealed that on

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[redacted]

[redacted]

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approximately June 12, 2000, [redacted] received a *Bacillus subtilis* (*Bs*) plasmid, pUB110, from Bruce Ivins for DNA work [redacted] was performing.

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Notebook [redacted] was issued April 5, 2000 to [redacted] and was entitled [redacted]. On approximately June 28, 2000 [redacted] received Ames spores from Ivins at a concentration of 3 x 10^{10} for two experiments: to demonstrate killing with fixative and for determination of intracellular survival growth of anthrax within a host. On July 10, 2000, [redacted] received more Ames spores from Ivins at the same concentration as above. The experiment [redacted] was conducting was to demonstrate complete killing of anthrax spores with EM universal fixative. Page 24 of this notebook is a copy of the Reference Material Receipt (RMR) record for RMR 1029. This record shows the storage location of RMR 1029 spores to be Building [redacted] Room [redacted] The last date of RMR 1029 transfer shown in this notebook is July 7, 2000. Moreover, the previously documented arithmetic error, in which Ivins subtracted 6 milliliters from 994 milliliters and recorded the difference as 888 milliliters, is present in [redacted] notebook.

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Notebook [redacted] was issued July 5, 2001 to [redacted] and was entitled [redacted] Page 17, dated 3/18/3 [sic], contains an entry stating "Examined Δ-Ames strain (given to me by [redacted] [writer is unable to fully decipher]) for PX02 loci..."

Notebook [redacted] was issued February 4, 1983 to [redacted] and was entitled [redacted] [redacted] obtained *Ba* Ames from Bruce Ivins and performed a Rocket Immunoelectrophoresis on March 7, 1983 with the Ames. Another Rocket Immunoelectrophoresis was performed with Ames on March 22, 1983. It is unknown whether Ivins provided this Ames as well.

Notebook [redacted] was issued October 16, 1995 to [redacted] and was entitled [redacted]. An entry within reads:

[redacted]

An itinerary of the visit of the above Technological Cooperation Subcommittee followed, revealing that the event took

place in 1995 and that [redacted] gave a speech entitled [redacted] In addition, [redacted] gave a speech entitled [redacted] b6 b7C

Notebook [redacted] was issued May 5, 1992 to [redacted] and [redacted] and was entitled [redacted] Four pages contained loosely within provided experiments conducted, and the dates of the experiments, for Notebooks [redacted] and [redacted]

Notebook [redacted] was issued August 16, 1993 to [redacted] and was entitled [redacted] Page 10 listed a fermentation procedure conducted April 13, 1993 using Δ-Sterne (pPA102)CR4#2 and antifoam.

Notebook [redacted] was issued September 23, 1992 to [redacted] and was entitled [redacted] One entry for gel preparations listed directions for lyophilizing Δ-Sterne samples in a speed vac.

Notebook [redacted] was issued August 17, 1993 to [redacted] and was entitled [redacted] One entry was an experiment entitled "Antifoam Compatibility Test - [redacted] and Antifoam C." [redacted] b6 b7C b7F

Notebook [redacted] was issued November 2, 1994 to [redacted] and [redacted] and was entitled [redacted] An August 9, 1994 [writer is aware that this date precedes the listed notebook issue date] reveals that fractions of PA were lyophilized. b6 b7C

Notebook [redacted] was issued January 3, 1997 to [redacted] and was entitled [redacted]

Notebook [redacted] was issued June 7, 2000 to [redacted] and was entitled [redacted] An experiment was conducted on April 30, 2001 with

two of "Itai's Ames mutants", involving X-linking using gel filtration.

Notebook [redacted] was issued June 26, 2000 to [redacted] and was entitled [redacted] One entry listed a copy of Ivins' Reference Material Receipt Record (RMR) 1029, in which the spores were stored at 2-8 degrees Celsius in 1% phenol in Building [redacted] Room [redacted] In addition, Ivins' RMR 1029 spore stock was obtained for preparation of Ames vegetative stock. The stock was then electroporated. The experiment details have been abbreviated here, but the full experiment was copied by writer and is available for review.

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Notebook [redacted] was issued November 21, 2001 to [redacted] and [redacted] and was entitled [redacted] The notebook contained experiments conducted in an attempt to determine virulence defects in attenuated strains of *Ba*. It was further determined that [redacted] In addition, several Δ-Ames-1 samples were sent on April 8, 2002 to [redacted] for Multi-locus Variable Number Tandem Repeat Analysis typing. All samples were received from either [redacted] or [redacted] [writer believes this is [redacted]

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Notebook [redacted] was issued July 11, 2003 to [redacted] and [redacted] and was entitled [redacted] One page contained a small table, reproduced below:

Entitled: Sigma Materials for air pouch - early germination

[redacted]

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Notebook [redacted] was issued July 18, 2003 to [redacted] and [redacted] and was entitled [redacted] Further information regarding [redacted] was contained, [redacted] was employed by [redacted] between [redacted] to [redacted]

Notebook [redacted] was issued August 6, 2003 to [redacted] and [redacted] and was entitled [redacted] experiment entitled [redacted] [writer believes this to be [redacted]

Notebook 4103, issued to Bruce Ivins and entitled "Anthrax Study B98-03", contained an October 27, 1998 entry in

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which Ivins calculated the amount of Ames spores which equaled a certain amount of *Ba* Zimbabwe spores.

Notebook 4306, issued to Bruce Ivins on August 28, 2000 and entitled "Anthrax", contained experiments on various topics, including the comparison of *Ba* Vollum 1B on MicroDiagnostics Nutrient Agar versus Difco Nutrient Agar, the effect of temperature on spore counts of Vollum 1B, and whether Solid Agar medium was suitable for growing the *Ba*, strain V770-NPI-R. An experiment was conducted as a result of a conversation Ivins had with a [redacted] who advised that the United States Department of Agriculture (USDA) freezes anthrax spores at -70 Celsius in 50% glycerol. Ivins wanted to determine whether 100%, 50%, and 25% glycerol solutions in water froze at -70 Celsius. Also contained in the notebook was an experiment to determine loss of counts due to transfer of spores from one tube to another. A [redacted] was mentioned in this experiment. Another experiment involved spore counts on plates spread to dryness versus counts on plates not spread to dryness.

Notebook [redacted] issued to Bruce Ivins on June 8, 2000, with entries by [redacted] was entitled [redacted] This notebook included spore-related studies on the effects of storage conditions on spore counts in suspension (on Difco tryptic soy agar), spore counts on different solid media (tryptic soy agar, nutrient broth agar, BHI agar, capsule agar, sheep blood agar, and chocolate agar) percent encapsulation of spores in preps (on capsule agar), pour plate versus spread plate comparisons (on nutrient agar; procedure written by BioPort), and percent of spores in preps that are refractile or non-refractile. Assisting with the BioPort study were [redacted]. It is unclear where these [redacted] individuals were employed.

Notebook [redacted] was issued January 3, 1978 to [redacted] and was entitled "Pathogenesis of Anthrax." [redacted] lyophilized an ampule of an unknown substance on [redacted] On [redacted] lyophilized a *Ba* Sterne sample.

Notebook [redacted] was issued December 18, 1979 to [redacted] and was entitled [redacted]." A vaccine study involving a MDPH (now BioPort) antigen was conducted, in which the antigen was adsorbed onto alhydrogel. [redacted] then gave samples from the above to [redacted] and to [redacted] for EF analysis.

One page from [redacted] Notebook [redacted] was copied after a summary EC was written regarding the rest of [redacted] laboratory notebooks. Notebook [redacted] was issued July

11, 1983 and was entitled [redacted] One page described the isolation of *Ba* strain Vollum-1 in January 1948 in Onderstepoort, South Africa. Another *Ba* strain, G28, was isolated in 1939 in South Africa.

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Notebook [redacted] was issued November 18, 1983 to [redacted] and was entitled [redacted] describes obtaining *Ba* toxins from R-medial cultures from Ivins on April 2, 1984. Several toxin strains, including Ames, were obtained by [redacted] A March 27, 1984 entry describes an aerosol challenge using MDPH and Sterne spore-immunized guinea pigs. A similar experiment was conducted between February 28 and April 10, 1984, and on June 20, 1984.

Notebook [redacted] was issued March 17, 1993 to [redacted] and was entitled [redacted] Ivins made an entry into this notebook on August 14, 1989, in which he described combining polyclonal antisera, along with sera from guinea pigs immunized with Sterne and then challenged with Ames, in an effort to protect the guinea pigs from the challenge.

Notebook [redacted] was issued September 30, 1994 to [redacted] and was entitled [redacted] received six fermenter samples from [redacted] but no other information about the samples was provided.

Notebook [redacted] was issued September 29, 1995 to [redacted] and was entitled [redacted] On April 4, 1995, [redacted]

Notebook [redacted] was issued October 30, 2003 to [redacted] and was entitled [redacted] used RMR 1029 Ames spores in BOO-03, Experiment 6, with results provided in the form of a table. The experiment was a rabbit immunogenicity study seeking the effects of alhydrogel.

Notebook [redacted] was issued April 4, 1985 [year was rather obscured] to [redacted] and was entitled [redacted] obtained Ames and other *Ba* strains from Ivins on June 8, 1987 to prepare stock plates in [redacted] then ran the samples through a gel electrophoresis. [redacted] obtained more Ames samples from Ivins at a later date to test them against different PCR primers. [redacted] also streaked 5% sheep blood plates using four samples from the bacterial stock cultures. One of these samples was BA0076, or Δ-Ames-1. The experiment details have been abbreviated here, but the full experiment was copied by writer and is available for review.

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Notebook [redacted] was issued to [redacted] and was entitled [redacted]"

Notebook [redacted] was issued July 30, 1990 to [redacted] and was entitled [redacted]

Notebook [redacted] was issued April 16,1992 to [redacted] and was entitled [redacted] - [redacted] One step in the experiment involved lyophilizing the samples.

Notebook [redacted] was issued April 16, 1992 to [redacted] and [redacted] and was entitled [redacted] - [redacted] Samples were again lyophilized, although it does not appear that Ames was a strain used in the experiment. Δ-Ames was one of the samples with which [redacted] had been previously working. On or about September 11, 1993, [redacted] had a problem with Ames contamination and decided to filter sterilize all solutions from Ivins and stay out of Ivins' lab as much as possible. No other information regarding this contamination was provided.

Notebook 1549 was issued March 31, 1981 to Oliver Mikesell and was entitled "Anthrax." On September 25, 1981, Mikesell conducted a plasmid isolation experiment utilizing *Ba* Sterne and Ames. A previously-unidentified individual, [redacted], assisted with this experiment. [redacted] also assisted with two similar experiments, conducted February 10, 1982 and July 2, 1982, and located in Notebooks [redacted] and [redacted] respectively.

Notebook 1757, issued to Oliver Mikesell on March 24, 1983 and entitled "Anthrax", contained media recipes for Denhardt's Solution, a "pPA26 probe" recipe, and a "4x probing solution".

Notebook [redacted] was issued October 7, 1980 to [redacted] and was entitled "Anthrax." A previously-unidentified

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[redacted]

Notebook [redacted] was issued October 18, 1988 to [redacted] and was entitled [redacted] On October 18, 1988, [redacted] ran a gel on digests of PX02 DNAs of Δ-Ames from either [redacted] own stock or from Ivins. [redacted] also received liquid Ames from [redacted] on or about October 23, 1988. [redacted]

Notebook 1812 was issued July 25, 1983 to [redacted] and was entitled [redacted]" Page 18 lists a recipe for [redacted]

Notebook [redacted] was issued July 18, 1986 to [redacted] and was entitled [redacted] On October 20, 1986, [redacted] received Ames Leighton-Doi heat-shocked broth spores from [redacted]

Notebook [redacted] was issued July 24, 1986 to [redacted] and was entitled [redacted] On October 10, 1986, [redacted]

Notebook [redacted] was issued February 17, 1987 to [redacted] and was entitled [redacted] [redacted] On November 9, 1987, [redacted] conducted an experiment using Ivins' Δ-Ames-1.

Notebook [redacted] was issued October 10, 1987 to [redacted] and had no title. On January 20, 1988, [redacted]

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Notebook [redacted] was issued May 12, 1988 to [redacted] and was entitled [redacted] On August 22, 1988, [redacted] froze Sterne R medium supernatant from a lyophilizer bottle. On August 30, 1988, [redacted] conducted an experiment on DNA gel with Bruce Ivins' electroeluted Δ-Ames PX02. [redacted] also lyophilized Sterne R medium supernatant. On December 13, 1988, [redacted] conducted an experiment with *Ba* strain UM23-1, received from [redacted]

Notebook [redacted] was issued December 14, 1988 to [redacted] and was entitled [redacted] Page 9 delineates an experiment in which Ames spore stock from [redacted] was used. On March 13, 1989, [redacted] ran a DNA gel using Ivins' Δ-Ames DNA.

Notebook [redacted] was issued November 20, 1989 to [redacted] and was entitled [redacted] [redacted] showed that [redacted] received "strains" from [redacted] and streaked the strains on March 15 (year unknown). Page 58 revealed that the "strains" from [redacted] included Δ-Ames-1 and Δ-Ames,I, 8.

Notebook [redacted] was issued May 2, 1990 to [redacted] and was entitled [redacted] Page 2 revealed that [redacted]

Notebook [redacted] was issued February 22, 1991 to [redacted] and was entitled [redacted] as well as conducting an Aro-Sterne strain experiment with Ivins, using Ames PX02 as well.

Notebook [redacted] was issued October 1, 1991 to [redacted] and was entitled [redacted] On Page 7, [redacted]

Notebook [redacted] was issued January 19, 1995 to [redacted] and [redacted] and was entitled [redacted] On November 15, 1999, [redacted] revealed that [redacted] worked in Suite [redacted] on Ames spore preparations.

Notebook [redacted] was issued January 5, 1996 to [redacted] and was entitled [redacted] Experiments within were conducted with *B. subtilis* recombinants. A *B. subtilis* BSTI recombinant strain PA2 was also used, as well as Ivins' original *B. subtilis* PA2 from which [redacted] made [redacted] stocks (Ivins' tube of *B. subtilis* was undated). On November 21, 2000, [redacted] also used PA knockout mutants of Ames received from

[redacted] Finally, while not otherwise of investigative interest, laboratory activities occurring during September and October 2001 were copied by writer to provide records of what was taking place during that time.

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Notebook [redacted] was issued October 25, 1999 to [redacted] and was entitled [redacted] In a memorandum dated December 9, 1999, it was revealed that [redacted] had received the anthrax vaccine. On December 16, 1999, [redacted] wrote that [redacted] had archived all data from 11 anthrax notebooks in [redacted] office. Furthermore, [redacted] advised [redacted] on December 29, 1999 that [redacted] had reorganized [redacted] reprints for both anthrax and plague. [redacted] separated the plague and anthrax articles from each other and within those groups, [redacted] organized the reprints. [redacted]

Notebook [redacted] was issued August 11, 2000 to [redacted] and was entitled [redacted] [redacted] advised on September 19, 2000 that [redacted] had picked up a personal package from the South loading dock. No other information about the package was given.

Notebook [redacted] was issued February 6, 2001 to [redacted] and [redacted] and was entitled [redacted] Contained within was a list of equipment found in [redacted] laboratory, including a [redacted]

Notebook [redacted] was issued September 19, 2001 to [redacted] and [redacted] and was entitled [redacted] The first entry of note was October 17-18, 2001, in which *Ba* Ames was run on PCR.

Notebook [redacted] was issued May 8, 2002 to [redacted] and [redacted] and was entitled [redacted] Page 22 revealed that on June 20, 2002, Ames spore extracts were taken from [redacted] freezer stocks as germinated samples. [redacted]

Notebook [redacted] was issued March 7, 1989 to [redacted] and was entitled [redacted] [redacted]

Notebook [redacted] was issued March 23, 1990 to [redacted] and was entitled [redacted] On Page 65, [redacted]

[redacted] Page 67 shows that [redacted] received Δ-Ames from [redacted] on April 18, 1990.

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Notebook [redacted] was issued July 12, 1990 to [redacted] and was entitled [redacted] " [redacted] [redacted] dated April 16, 1991, lists various strains from [redacted] strain notebook, as well as strains from [redacted]

Notebook [redacted] was issued November 30, 1994 to [redacted] and was entitled [redacted] Page 1 shows that [redacted] was conducting work with Ames as well. [redacted]

Notebook [redacted] was issued August 15, 1991 to [redacted] and was entitled [redacted] A page on spore formation appears to be written in Bruce Ivins' handwriting. Ivins crafted a chart showing the fictional spore formation of [redacted] " [Writer knows the [redacted] to be [redacted] Subsequent pages showed [redacted]

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Notebook [redacted] was issued March 7, 1995 to [redacted] and was entitled [redacted] " Enclosed is an abstract stating that [redacted]

Notebook [redacted] was issued November 22, 1996 to [redacted] and was entitled [redacted] Inside was a memorandum dated January 28, 1997 from [redacted]

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[redacted]

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[redacted] laboratory folders, named [redacted], contained a paper entitled [redacted] The next page in the folder listed the *Ba* strains tested, which included an environment isolate referred to as [redacted] Another isolate was referred to as [redacted], and was listed as being of unknown origin.

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Another laboratory folder assigned to [redacted] was entitled [redacted] the name [redacted] was handwritten across the front with the telephone number [redacted] Inside was a USAMRIID Form 11-R, showing that on May 15, 1998, [redacted] hand-carried 100 milliliters of *Ba* DNA from the avirulent, sterility checked Δ-Sterne strain to [redacted] Building [redacted] Fort Detrick, Maryland.

Notebook [redacted] was issued September 21, 1992 to [redacted] and was entitled [redacted] The following individuals were thanked by [redacted] during an apparent presentation on an overhead projector for the following reasons:

[redacted]

[redacted] was referenced in this notebook as [redacted] establishing that [redacted] is [redacted]

Notebook 4201 was issued August 25, 1999 to [redacted] and was entitled [redacted] Inside was a memorandum of agreement between [redacted] and [redacted] of [redacted] was to provide USAMRIID with potential therapeutic compounds (or polyamides) to be tested against *Ba*. These compounds were potential novel therapeutics for the treatment of anthrax.

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Should information be developed in the course of the anthrax investigation to suggest that other laboratory notebooks exist for the above-named researchers or if it is determined that additional laboratory notebooks for other USAMRIID researchers merit review, then a separate EC will be written and the "Notebook Compilation" folder on the "S" drive will be updated as needed.

♦♦

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FEDERAL BUREAU OF INVESTIGATION

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Date of transcription 01/23/2006

On January 23, 2006, [redacted] date of birth [redacted] social security number [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), Fort Detrick, Maryland, work telephone number [redacted] After being advised of the identities of the interviewing agents and the purpose of the interview, [redacted] provided the following information:

[redacted]

[redacted]

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[redacted]

[redacted]

Investigation on 01/23/2006 at Fort Detrick, Maryland

File # 279A-WF-222936-USAMRIID -1463 Date dictated N/A

by SA [redacted]
SA

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279A-WF-222936-USAMRIID

[redacted]

[redacted] never lyophilized samples, and did not recall ever seeing a lyophilizer in the hot suites. [redacted] believed it would be too risky to move samples from the hot suites to the cold side, where the lyophilizer was kept, for lyophilization.

[redacted] would have kept any and all shipping forms related to receipts of *Ba* strains.

[redacted]

[redacted] during 1990-1991, and may have received a packet of relevant information from [redacted] Alternatively, BRUCE IVINS or [redacted] may have received this packet of information. [redacted] will review [redacted] files and recontact the interviewing agents if [redacted] is able to find a packet of information from [redacted]

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[redacted]

[redacted] never saw anyone [redacted] did not know in Suite [redacted]. After perusing USAMRIID floorplans, [redacted] recalled that [redacted] worked in [redacted] and [redacted] worked in [redacted] worked in [redacted] knew IVINS had a laboratory in B3, but could not remember in which room IVINS had his lab. Suites [redacted] and [redacted] were not connected before 1990, [redacted] rarely entered Suite [redacted] but when [redacted] did, it was sometimes through a window between the suites. [redacted] had legitimate access to [redacted], but would climb from a window adjoining [redacted] and [redacted] to avoid the hassle of having to shower out of [redacted] and then shower into [redacted]. A copy of the USAMRIID floorplans shown to [redacted] was sent to the 1A section of the file.

Everyone who worked in Suite [redacted] used the autoclave, and during the time [redacted] accessed Suite [redacted], there were no animal caretakers [redacted] To destroy Ames samples for any reason, [redacted] simply poured bleach on the sample and then autoclaved the sample.

Within the [redacted] it was general knowledge that *Ba* Ames was stored in Suites [redacted] and [redacted]. After [redacted] and [redacted] paper with mention of Ames was published in 1986 or 1987, anyone could have extrapolated where Ames was stored, [redacted] also noted that before 1990, only a key was needed to access the hot suites. [redacted] knew that an individual had wandered into the hot suites in the late 1970s, and that the emphasis thereafter was on using keys to keep individuals from just walking into the hot suites.

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[redacted] knew of no dry or powder work ever conducted in Suite [redacted] or [redacted].

[redacted] had never heard the names [redacted] or [redacted]

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[redacted] did not remember signing any paperwork in order to receive Ames samples from IVINS. The process of receiving Ames from IVINS was fairly informal, and involved [redacted] simply telling IVINS that [redacted] needed Ames. By the time [redacted] began requesting Ames from IVINS, [redacted], so IVINS [redacted] conducted [redacted] aerosol sprays.

Sometimes [redacted] would be present for [redacted] sprays, and sometimes IVINS [redacted] would advise [redacted] that he or she did not have to be present.

[redacted]

[redacted]

[redacted] received a Top Secret clearance in [redacted] although [redacted] did not take a polygraph to receive this clearance. [redacted] opined that [redacted] background investigation was conducted by the U.S. Army.

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FEDERAL BUREAU OF INVESTIGATION

Date of transcription 01/18/2006

On January 18, 2006, [redacted] date of birth [redacted], social security number [redacted], home address [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), work telephone number [redacted] After being advised of the identity of the interviewing agents and the purpose of the interview, [redacted] provided the following information:

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[redacted]

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[redacted] position at USAMRIID. [redacted] first supervisor at USAMRIID was [redacted] During that timeframe, not as many BioSafety Level 3 (BSL-3) suites existed in the United States (U.S.) [redacted] felt that those individuals qualified to enter the hot suites were a bit arrogant and cliquish. [redacted] did not see eye to eye, due to their different backgrounds and philosophies. [redacted]

Investigation on 01/18/2006 at Fort Detrick, Maryland

File # 279A-WF-222936-USAMRIID-1464 Date dictated N/A

by SA [redacted]

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[redacted]

[redacted] conducted some *Bacillus anthracis* (*Ba*) work with [redacted] and some *Ba* protective antigen (PA) toxin work. [redacted] has never worked with the Ames strain, to [redacted] knowledge, and has not been vaccinated against *Ba* since approximately [redacted] has never entered any hot suites or Suites [redacted]

[redacted] used [redacted] lyophilizer in approximately 2003, and has occasionally used a speed vac. [redacted] used these instruments for drying proteins, and has never dried a live or whole organism in a lyophilizer or speed vac. [redacted]

[redacted]

[redacted]

[redacted] not know anyone who was familiar with or capable of weaponization techniques.

[redacted] was unaware of anyone who had made any negative remarks about a certain political party or politician. [redacted] believed that people with an inclination to espouse negative political views would probably not talk [redacted] did not suspect anyone of mailing the anthrax-laced letters. [redacted]

[redacted] believed [redacted] tried to blame laboratory accidents on BRUCE IVINS to get him flustered and to make people think that IVINS was incompetent. [redacted] did not know exactly why [redacted] would want to harm IVINS' reputation, but mentioned that [redacted] and IVINS all performed aerosol challenges in the same area. [redacted] has little involvement with aerosol challenges, [redacted] thought IVINS was too nervous to be the anthrax mailer; if he were the mailer, IVINS would have turned himself in already. One of the anthrax letters was opened by IVINS' technician in a BSL-2 suite, violating protocol. IVINS then swabbed the suite as a precaution and got into trouble. [redacted]

[redacted] had heard no gossip around USAMRIID that IVINS was the anthrax mailer, but knew that [redacted] worried about being a suspect. [redacted] believed IVINS would not want to jeopardize the U.S., and that if the mailer had mailed the letters to achieve money and power, he or she would not still be at USAMRIID. IVINS always followed procedure, and was very supportive, scientifically, of his subordinates. [redacted] never socialized with IVINS after work, [redacted]

[redacted] did not recall meeting [redacted] but had heard [redacted] say that [redacted] was "weird."

[redacted]

[redacted]

[redacted] had no personal nor professional New Jersey connections, and knew no one who did. [redacted]

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FEDERAL BUREAU OF INVESTIGATION

Date of transcription 01/24/2006

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[redacted] date of birth [redacted], telephone number [redacted] social security account number [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Disease (USAMRIID), [redacted] Porter Street, Fort Detrick, Maryland. After being advised of the identities of the interviewing agents and the nature of the interview, [redacted] provided the following information:

[redacted] has worked at USAMRIID from [redacted]

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[redacted] These documents are located in the corresponding 1A envelope.

For both the [redacted] and the [redacted] exposures, [redacted] obtained [redacted] Ba Ames spores from BRUCE IVINS, [redacted]

Investigation on 01/20/2006 at Frederick, Maryland

File # 279A-WF-222936-USAMRIID - 1472 Date dictated N/A

by SA PI [redacted]

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[redacted] has only obtained anthrax from IVINS. On one occasion, [redacted] requested anthrax from [redacted], but never received it. IVINS directly provided the Ba spores, intended for use in the exposures, to the Aerobiology group. [redacted] believes that IVINS provided the diluted material to the Aerobiology group in 15 mililiter (ml) conical tubes. Each of these aerosol exposures took place in Building [redacted] Room [redacted] At the completion of the exposures, the nebulizers were placed into disinfectant and then autoclaved. Neither [redacted] nor IVINS handled the nebulizers after the exposure. The all-glass impingers (AGIs) from the exposures were given to either BRUCE IVINS [redacted] The Ba from AGIs were then plated out by either IVINS [redacted] in Room [redacted] of Building [redacted] indicated that IVINS "owned" Room [redacted] of Building [redacted] during this period time, but since then the Aerobiology group has grown and taken control of Room [redacted] During the period of time that IVINS controlled Room [redacted] there was a refrigerator and an incubator in the room and that this would have been the logical place to store and incubate samples from the exposures. Any live Ba from the exposures would have almost certainly been autoclaved prior to leaving Room [redacted] or Room [redacted]. [redacted] never handled the Ba [redacted] either pre-exposure or post-exposure.

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[redacted] conducted a second animal study using Ba Ames beginning on [redacted]. The protocol number for this study is [redacted]

For both the [redacted] and [redacted] exposures [redacted] obtained [redacted] Ba Ames spores from IVINS. IVINS directly provided the Ba spores, intended for use in the exposures, to the Aerobiology group. IVINS initially only provided Ba for the [redacted] exposure. Due to the fact that none of the NHPs became ill after the first exposure, [redacted] made a second request for Ba Ames spores from IVINS. The [redacted] study exposures were carried out in the same manner as the [redacted] and the [redacted] exposures. Like the [redacted] and the [redacted] exposures, these aerosol exposures took place in Building [redacted] Room [redacted] At the completion of these exposures, the

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nebulizers were placed into disinfectant and then autoclaved. Neither [redacted] nor IVINS handled the nebulizers after the exposures. The AGIs from the exposures were given to either IVINS [redacted]. The Ba from AGIs was then plated out by either IVINS [redacted] in Room [redacted] of Building [redacted]. As was the case for the [redacted] and [redacted] exposures, [redacted] never handled the Ba [redacted] either pre-exposure or post-exposure. b6 b7C b2 b7F

[redacted] also received Ba from IVINS for one other study. This was a non-aerosol conducted in Building [redacted] Biosafety-Level -3 (BSL-3) suite [redacted] Room [redacted] Room [redacted] is [redacted] indicated that the anthrax [redacted] received from IVINS for the aforementioned study is the same as the sample in the picture. Until it was seized in 2004, this sample of Ba was considered DSD's Ba sample. [redacted] provided agents with a copy of the "Receipt for Transfer of *B. anthracis* spores," for the sample. This "Receipt for Transfer of *B. anthracis* spores," is located in the corresponding 1A envelope. [redacted] was also shown a photograph of a flask containing Ba Ames (known to writer to be the RMR 1029 flask). [redacted] does not ever recall seeing the flask.

[redacted] stated that [redacted] and [redacted] suites are physically connected by an airlock, but that no one would ever go directly from [redacted] to [redacted] or vise versa. It is not possible to bump someone from [redacted] into [redacted] Once something goes from [redacted] into the airlock the door to [redacted] locks. It is possible to go from [redacted] into [redacted], but this is very dangerous and the person entering [redacted] from [redacted] would be in a [redacted] suite without appropriate protection. There has been a camera on the [redacted] airlock door since possibly the mid-1990s and certainly since the late-1990s. [redacted] does not have access to [redacted] suites [redacted] or [redacted]

[redacted] has used lyophilizers in the past for drying irradiated material and recombinant protective antigen (PA) protein. [redacted] has never lyophilized anything infectious. [redacted] used to have a lyophilizer in the hallway in [redacted], but never used it. [redacted] has never seen a lyophilizer in Building 1412. b6 b7C

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279A-WF-222936-USAMRIID

An FD-597 Receipt for Property was filled out for [redacted] The original FD-597 Receipt for Property, the Receipt for Transfer of B. anthracis spores from Bruce Ivins, the Receipt for Transfer of B. anthracis spores from [redacted], a copy of an e-mail from [redacted] to [redacted], a copy of AGI results dated [redacted], a copy of a [redacted] Study sheet, a copy of a "Report of Protocol Completion/Termination," dated [redacted] and signed by [redacted], and a copy of two (2) spore preparation forms provided by [redacted] are located in the corresponding 1A envelope.

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FEDERAL BUREAU OF INVESTIGATION

Date of transcription 01/12/2006

[redacted], date of birth [redacted] social security number [redacted] was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID), work telephone number [redacted], office in Building [redacted] room [redacted] After being advised of the identities of the interviewing agents and the purpose of the interview, [redacted] provided the following information: b6 b7C

[redacted] performed aerosol challenges in Building [redacted], until [redacted] was told in advance when a challenge was [redacted] and it was the responsibility of [redacted] to collect the reagents for the challenge. Orders were usually placed with BRUCE IVINS [redacted] for *Bacillus anthracis (Ba)* spores. Material was brought to Building [redacted] the day before or the day of the challenge, and the Principal Investigator usually brought the material to room [redacted] where the challenges were conducted. [redacted] set up the aerosol rooms, including the preparation laboratories in rooms [redacted] *Ba* was prepared in room [redacted] There was a log book in room [redacted] to record use of the laboratory, but [redacted] was unsure when use of the log book began. The book may be kept in Aerobiology. b6 b7C b2 b7F

There were usually about four people in the room during animal challenges: [redacted] aerosol technician, and two animal holders. Another person may have been located in the hallway. Prior to the challenge, a runner transported the animal to a different room to get a breathing rate, and then returned the animal to the hood line [redacted] During the rabbit challenges, approximately 30 rabbits were challenged each day, for a total of three days. Each animal challenge lasted approximately 15 minutes. During the challenge, anyone who was vaccinated could enter the room. Signs specifying the agents being used were posted on the door when challenges took place. b6 b7C

IVINS kept *Ba* spores in the refrigerator in room [redacted] and he provided them to [redacted] for a challenge on the day of the challenge. The refrigerator in room [redacted] had a lock, but it was usually kept unlocked. There was a commonly known code on the door of room [redacted] Typical starting concentrations for challenges were b6 b7C b2 b7F

Investigation on 1/12/2006 at Frederick, Maryland

File # 279A-WF-222936-USAMRIID-1479 Date dictated 1/12/2006

by Postal Inspector [redacted] Postal Inspector [redacted] b6 b7C

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10^9 or 10^{10} spores/mL. During a challenge, spores were deposited in water in the AGI. The solution remaining in the AGI after the challenge was approximately 6-10 mL in volume. The AGI solution was given to IVINS, who conducted the post-challenge plating. About 1/10 mL was needed for post-challenge plating, and the remaining volume from the AGI could have stayed in room 115 for weeks afterward, though it usually did not stay there that long. The only samples of *Ba* remaining after a challenge were contained in the AGI and the plates that were created post-challenge. Used plates were discarded in trash bags, which were taken by the caretakers when they became full.

Animals for pox challenges were kept in Building [redacted] [redacted] did not recall any *Ba* being stored there. [redacted] did not recall any *Ba* being stored in hallways of Building [redacted], and he thought there was probably no *Ba* in room [redacted] Room [redacted] was [redacted] laboratory which was used for pox. There should not have been *Ba* in suite [redacted] the only agents used there that [redacted] recalled were pox. [redacted] The walk-in cooler on the first floor of Building [redacted] was an unlocked, generally common cold room for people without a refrigerator in their laboratories; [redacted] did not recall if *Ba* was stored there. The upstairs walk-in cooler, room [redacted] was often down and moldy, and was not used a lot. If any *Ba* was stored there, it probably belonged to [redacted] did not recall any specific instances when *Ba* might have been stored there.

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[redacted] did not know if *Ba* was stored in Building 1425, rooms [redacted] and [redacted], or in suite [redacted] thought there should not have been *Ba* in suite [redacted] and [redacted] did not recall seeing any there. [redacted] did perform *Ba* sprays in suite [redacted] *Ba* sprays occurred in [redacted] while Building [redacted] was down for renovations. [redacted] thought the renovations of Building [redacted] were probably completed by the end of 1997. *Ba* was not stored in any hallways of Building 1425.

Inspector [redacted] showed [redacted] four copies of photographs of a flask labeled "OCT 97 GLP Ames Spores." [redacted] did not recall ever seeing the flask or anything like it. The *Ba* that was stored in the challenge areas were generally not in flasks. Samples brought by IVINS were usually contained in 50 mL conical tubes that were taped on top. Samples from the AGI were kept in 15 mL tubes. Copies of the photographs are maintained in a 1A envelope.

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[redacted] stated that based on the label on the flask in the photograph, the preparation of the spores would have to be under GLP regulations. [redacted] One wouldn't make a GLP preparation and not run a GLP challenge with the prep; therefore, [redacted] thought the flask was probably from [redacted] There may have been GLP *Ba* sprays after [redacted] was working on *Ba* studies using GLP regulations, where the protective antigen was extracted and purified for vaccines. Small quantities of the material were injected into animals; aerosol challenges would not have been done for this project.

[redacted] recalled seeing [redacted] in the aerosol challenge area during challenges. [redacted] took a bunch of pictures of the aerosol challenges. [redacted] recalled seeing [redacted] in the containment area of Building [redacted] many times. [redacted] never mentioned anything to [redacted] about a bioreactor.

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It would be possible for a group of people to enter the containment area of Building 1412 together (i.e. piggyback) through the change rooms.

(Rev. 01-31-2003)

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FEDERAL BUREAU OF INVESTIGATION

Precedence: ROUTINE **Date:** 01/30/2006

To: Washington Field

From: Washington Field
AMX-3
Contact: SA [redacted] b6 b7C

Approved By: [redacted]

Drafted By: [redacted] b6 b7C

Case ID #: 279A-WF-222936-USAMRIID (Pending) - 1481

Title: AMERITHRAX;
MAJOR CASE 184

Synopsis: To report results of investigation.

Reference:

279A-WF-222936-LEADS	Serial	688
279A-WF-222936-LEADS	Serial	712
279A-WF-222936-LEADS	Serial	740
279A-WF-222936-LEADS	Serial	915
279A-WF-222936-LEADS	Serial	983
279A-WF-222936-POI	Serial	1398
279A-WF-222936-USAMRIID	Serial	581
279A-WF-222936-USAMRIID	Serial	1093
279A-WF-222936-USAMRIID	Serial	1172
279A-WF-222936-USAMRIID	Serial	1247
279A-WF-222936-USAMRIID	Serial	1248
279A-WF-222936-USAMRIID	Serial	1356

Enclosure(s): [redacted]

Details: An investigation of [redacted] b6 b7C [redacted] Date of Birth (DOB): [redacted] Social Security Account Number (SSAN): [redacted] commenced because [redacted] had access to locations where the Ames strain of *Bacillus anthracis* (*Ba*) is stored while stationed at the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID).

Background:

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[redacted]

[redacted] b6 b7C

[redacted] was later re-interviewed on 10/25/2005 to address un-resolved questions pertaining to [redacted] scientific knowledge and experience, knowledge of [redacted] knowledge of [redacted] and knowledge of current USAMRIID employee(s) (279A-WF-222936-LEADS, Serial 915).

Knowledge and Experience:

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[redacted] b6 b7C

[redacted] never heard of modified G sporulation media. [redacted] supervisor [redacted] was [redacted] SSAN: [redacted] DOB: [redacted] work telephone #: [redacted] [redacted] has never worked with the Ames strain of *Ba* (279A-WF-222936-LEADS, Serial 712 and 983).

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No evidence or allegation(s) were discovered to suggest [redacted] has the scientific knowledge nor work experience required to "weaponize" the Ames strain of *Ba*.

Access

A query of available USAMRIID keycard access records for [redacted] met with positive results. USAMRIID keycard access records indicated keycard activity for [redacted] between [redacted] and [redacted] Investigation determined [redacted] had no access or attempted access to locations at USAMRIID known to contain the Ames strain of *Ba* until [redacted] Keycard access records affirm [redacted] statements pertaining to [redacted] b6 b7C b2 b7F

[redacted] key card access records indicate and affirm [redacted] primary work area was the [redacted], USAMRIID building [redacted] (ROOM [redacted]. b6 b7C

Investigation and interviews affirm [redacted] keycard access records which indicated [redacted] did not access or attempt to access locations at USAMRIID known to contain the Ames strain of *Ba* until after the anthrax-laced letter mailings of 2001. Thus, [redacted] did not have any identifiable opportunity to abscond with the Ames strain of *Ba* until after the anthrax attacks of 2001 were perpetrated. [redacted] a limited investigation continued in order to ascertain [redacted] knowledge of additional pertinent information.

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Knowledge of [redacted]:

[redacted]

[redacted]

Knowledge of [redacted]

[redacted] stated [redacted] never met or heard of [redacted] until after [redacted] Investigation affirms [redacted] statements as there was no evidence of telephonic contact between [redacted] home telephone number and any known number associated with [redacted]

Miscellaneous:

[redacted] has been in telephonic contact with the following USAMRIID personnel: [redacted] advised these telephone calls were personal in nature.

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The lyophylizer for the [redacted] was stored in the supply room, Room [redacted] USAMRIID Building [redacted]. [redacted] used the lyophylizer for antibody or antigen preparation only.

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[redacted] home telephone was [redacted] service address: [redacted]. All incoming and outgoing telephone numbers to [redacted] home telephone were searched in [redacted], one number met with numerous positive results. By way of background, on [redacted], [redacted] telephone number [redacted] was dialed from [redacted] home telephone. A query in [redacted] for the same indicated the number [redacted] Investigation and interview indicated [redacted] was [redacted] (279A-WF-222936-USAMRIID, Serial 1172). (WFO Note: this number was later discovered to be also dialed from a telephone associated with Bruce E. Ivins, SSAN:280-44-5449, DOB: 04/22/1946.)

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[redacted]

Non-Productive Investigation:

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[redacted] has no identifiable criminal history or contact with local [redacted] law enforcement officials. A NCIC query for [redacted] DOB: [redacted] on or about 01/03/2005 indicated no current wants or warrants nor any identifiable criminal history. On 05/10/2005, [redacted] State Police [redacted] records were queried for [redacted] contact with [redacted], which met with negative results. Also on 05/10/2005, [redacted] records were queried for [redacted] contact with [redacted], which also met with negative results. (279A-WF-222936-[redacted], and 279A-WF-222936-USAMRIID, Serial 1247 and 1248).

[redacted] b6 b7C

A review of [redacted] credit history and credit card purchases was unremarkable. No evidence of financial gain stemming from the anthrax-laced letter mailings of September and October 2001 was discovered.

A query of [redacted] for [redacted] as well as home telephone #: [redacted] all met with negative results. b2 b7E b6 b7C

Attempts to procure keycard access records from [redacted], which would affirm [redacted] stated whereabouts for September 2001 as well as 10/01-16/2001, met with negative results as [redacted] personnel were unable to locate archived records. b6 b7C

Summary:

Based upon the information developed during this investigation to date (2 FD-302s of [redacted] 1 FD-302 of co-worker, 12 investigative inserts, and 7 Federal Grand Jury returns), no evidence or allegation(s) have been discovered, nor any motive identified, to suggest [redacted] was involved in or otherwise had knowledge of the anthrax-laced letter mailings of September and October 2001. Unless or until such evidence or allegation(s) are discovered, no further investigation of [redacted] is intended. b6 b7C

Through investigation and interview [redacted] is further described as:

Descriptive Data:

Reference
Name -
Last:
First:
Middle:
Race:
Sex:
Height:
Weight:

[redacted]

DOB:
Citizenship:
DLN:
SSAN:
Rank:
Employer:
Title:
Address(es) -
Street Name:
City:
Country:
Phone #:
Miscellaneous -

[redacted]

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FD-302 (Rev. 10-6-95)

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DATE 12-15-2008 BY 60324 uc baw/dk/cls

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 01/31/2006

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[redacted] date of birth [redacted] social security number [redacted], was interviewed at [redacted] place of employment, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) 1425 Porter Street, Ft. Detrick, Maryland. After being advised of the identities of the interviewing agents and the purpose of the interview, [redacted] provided the following information:

Special Agent (SA) [redacted] showed [redacted] copies of two photographs of a vial labeled [redacted] (known to writer to correspond to FBI *Bacillus anthracis* Repository (FBIR) sample number [redacted] stated that the label was [redacted] handwriting. The vial most likely contained *Bacillus anthracis* (*Ba*) given to [redacted] from BRUCE IVINS; IVINS made all the spores and provided small amounts to [redacted] who then diluted the material as needed. This vial was probably a dilution, and at that concentration it would be used as working stock. [redacted] stated, and interviewers verified, that [redacted] believed the material in this vial came from IVINS and not [redacted]. The copies of the photographs, contained on a single sheet, are maintained in a 1A envelope.

[redacted] found a typewritten sheet and a handwritten page from a notebook that may have documented where the vial came from. The typewritten sheet was dated [redacted] and entitled [redacted] It mentioned Ames spores from IVINS with a concentration of $2.3x10^{[illegible]}$/mL in 1% Phenol, which was diluted to $2.3x10^{8}$/mL and again to $1.0x10^{7}$/mL. The handwritten page was dated [redacted] and mentioned Ames spores that had an original concentration of $2.3x10^{10}$/mL, that was then diluted several times. [redacted] explained that after spores were obtained from IVINS they were typically washed and diluted, and would contain no Phenol after this process. Copies of the typewritten sheet and handwritten page are maintained in the abovementioned 1A envelope.

[redacted] obtained [redacted] original stock of [redacted] from [redacted] originally provided [redacted] Ames strain *Ba*. [redacted] never got spores from anyone except IVINS [redacted] did not remember growing up spores [redacted] until [redacted] began working at USAMRIID in [redacted]

[redacted]

Investigation on 1/31/2006 at Frederick, Maryland

File # 279A-WF-222936-USAMRIID - 1489 Date dictated 1/31/2006

Postal Inspector [redacted]

by SA [redacted]

[redacted]

This document contains neither recommendations nor conclusions of the FBI. It is the property of the FBI and is loaned to your agency;

[redacted] has worked in Building [redacted] throughout [redacted] time at USAMRIID. [redacted] b6 b7C b2 b7F

Currently, members of the Aerobiology group obtain material and transport it to Building [redacted] for aerosol challenges. Up until recent years, however, IVINS usually brought *Ba* samples to [redacted] for aerosol challenges. [redacted] has never brought *Ba* to [redacted] except possibly in [redacted] When IVINS brought *Ba* to Building [redacted] the samples were usually in 15 mL glass containers; these samples were to be heat-shocked. [redacted] remembered seeing 15 mL glass tubes stored in the challenge area of [redacted] After the aerosol challenges, IVINS plated out the all-glass impingers (AGI) in room [redacted] of Building [redacted] is not sure what IVINS did with the AGIs after he was finished with them.

Other than stocks that were to be used for challenges, IVINS stored his *Ba* stocks in Building [redacted] suite [redacted] never stored *Ba* in Building [redacted] suite [redacted], and he did not think *Ba* was ever stored in any freezers, refrigerators or other containers in the hallways of Building [redacted]

[redacted]

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FD-302 (Rev. 10-6-95)

FEDERAL BUREAU OF INVESTIGATION

Date of transcription 01/03/2006 b6 b7C

On January 3, 2006, Special Agents [redacted] and [redacted] interviewed [redacted], date of birth 06/08/1954, Social Security Number [redacted] at [redacted] place of employment, the U.S. ARMY MEDICAL RESEARCH INSTITUTE OF INFECTIOUS DISEASES (USAMRIID), 1425 Porter Street, Building 1412, Ft. Detrick, Maryland, [redacted] After being advised of the identity of the interviewing Agents and the purpose of the interview, [redacted] provided the following information:

[redacted] began working at USAMRIID in [redacted] did not get access to enter the [redacted] suites until [redacted] when [redacted] completed all required vaccinations to enter the [redacted] suites. [redacted] first received *Bacillus anthracis* (*Ba*) Ames strain for [redacted] research in [redacted] conducted [redacted] research in building [redacted] [redacted] laboratory is room [redacted] has never stored *Ba* Ames in Building [redacted] suites [redacted] or [redacted] The only time [redacted] was in [redacted], was to work on a plague study. [redacted] believes the plague study was conducted in room [redacted] b6 b7C b2 b7F

[redacted] was shown a map of Building [redacted] suites and was asked to remark about [redacted] research with *Ba* Ames, [redacted] storage of *Ba* Ames, and [redacted] knowledge of other researcher's research and storage of *Ba* Ames. [redacted] comments were written on the maps. A copy of the maps were placed in an FD-340 and submitted to the 1A section of the file. [redacted] provided the following:

[redacted] has stored *Ba* Ames in building [redacted] room [redacted] and room [redacted] in an under-the-counter refrigerator. Animal aerosol challenges are conducted on the [redacted] floor in rooms [redacted] and [redacted] Pre and post-challenge animals are stored in rooms [redacted] and [redacted] Anybody can isolate *Ba* Ames from an infected animal. [redacted] did not store any *Ba* Ames in room [redacted] [redacted] stores *Ba* in room [redacted] and in the freezer in the hallway. There should be no storage of Ames in room [redacted] does not store any *Ba* in room [redacted] There may have material leftover from aerosol challenges stored in room [redacted] When the FBI conducted the search in July 2004, some *Ba* Ames strain was found in [redacted] In theory, no live material should be in [redacted] Nothing of [redacted] was ever in room [redacted] never stored *Ba* in the break room, the virology rooms, the necropsy room. Prior to October 1999, room [redacted] was the only location where *Ba* Ames was stored.

[redacted]

Investigation on 01/03/2006 at Ft. Detrick, Maryland b6 b7C

File # 279A-WF-222936-USAMRIID -1490 Date dictated N/A

by SA [redacted]
SA [redacted]

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After an aerosol challenge, all material from the challenge was autoclaved. The *Ba* Ames left in the all-glass impinger (AGI) was not autoclaved right away. [redacted]

[redacted] provided the following description of an aerosol challenge:

Based on the number of animals being used in an aerosol challenge, [redacted] would calculate the number of spores that [redacted] would need for the challenge. BRUCE IVINS would send over the required amount of spores in an Erlenmeyer flask or a 50 mL conical tube. IVINS would provide [redacted] with the *Ba* Ames from Dugway. IVINS [redacted] did not complete any paperwork documenting the internal transfer of *Ba* until approximately mid-2002. IVINS began using an internal transfer sheet and USAMRIID followed very soon after. [redacted] provided Agents copies of the paperwork documenting the internal transfers of *Ba* from June 2002 until present. These documents were placed in an FD-340 and submitted to the 1A section of the file. [redacted]

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The aerobiology group began conducting the plate counts approximately 3 years ago. The aerobiology division stores AGI's in a lock box in the cold storage room [redacted] The lock box has only been in use since approximately June 2002. The material leftover in the AGI's would usually be approximately 3 orders of magnitude less concentrated than the starting material. [redacted]

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[redacted] was the first time [redacted] worked with *Ba* Ames spores. [redacted]

[redacted] Most of the people who conduct the aerosol challenges are soldiers. It is problematic, since soldiers rotate through the divisions. Once the soldiers are immunized and trained properly, they are rotated out. [redacted]

The June, August, October, and November 2001 mice aerosol challenges were all trying to establish an LD 50 to set up a mouse model for future anthrax studies. A different strain of mice was used in November 2001. Approximately 10 mice were challenged with each vial of *Ba* at varying concentrations. In June, August, October, and November 2001, there were 60, 40, 50, and 270 mice challenged, respectively. If 60 mice were challenged, there were 6 vials of *Ba* Ames at varying doses and 6 AGI's would be leftover from the challenge. [redacted] always received *Ba* Ames, which [redacted] knew to be DUGWAY material, from IVINS for the challenges. [redacted] provided agents with an untitled two page inventory of Aerosol Challenge information. A copy of the inventory will be submitted to the 1A section of the file.

In April 2004, [redacted] submitted two samples to the FBI repository (FBIR). One sample labeled "Ames Spores [redacted] belonged to IVINS. [redacted] had contacted IVINS to ask if [redacted] could submit the sample to the FBIR. [redacted] provided Agents with an email dated April 6, 2004, in which IVINS responded to [redacted] inquiries regarding the sample. A copy of the email will be submitted to the 1A section of the file. Although the exact history or purpose is unknown, the sample was more likely an AGI tube and not a dilution tube (pre-challenge material). All aerosol challenges occur in building [redacted]. Prior to anthrax attacks in fall 2001, control and inventory of *Ba* was very loose. [redacted] theorized that samples may have been brought over to [redacted] to do a challenge, the challenge may have been cancelled or postponed, and the material may have ended up in the cold room. The only reason that a sample intended for an aerosol challenge was not used would be if a hood went down. Only [redacted] were doing challenges by aerosol.

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Material from IVINS's aerosol challenges would get plated in aerobiology lab [redacted] or [redacted] and then stored in the common use cold room. Not a lot of spores are contained in the AGI's. It would take hundreds or possibly thousands of AGI's collected over a long period of time to make up the total amount of material used in the anthrax mailings. In addition material in AGI's is heavily contaminated and would need to be reisolated to get a pure culture. Plates made from AGI's would be heavily contaminated as well. [redacted] recalls the material from the AGI's being heavily contaminated with Staphylococcus and a gram negative bacteria. [redacted] has not seen a non-anthracis Bacillus species, but it would be difficult to distinguish from *Ba*. Typically, environmental surveys have indicated *Bacillus stearothermophilus* present in the basement. This is because this *Bacillus* species is present on the autoclave indicators tape used on everything that is autoclaved.

Ames, and Vollum 1B have been used in aerosol challenges. It is possible that the Sterne strain has also been used. More recently [redacted] is looking for a vaccine resistant strain. [redacted] may have found a vaccine resistant strain from China. No non-anthracis *Bacillus* strains have been used in aerosol challenges. [redacted] would know what strains have been used for challenges.

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Ba Ames strain from [redacted] has 2 distinct colony types. The *Ba* material would have to be plated to see the colony types. *Ba* from the 2001 anthrax letters had the same two distinct colony

types. There was no difference in antibiotic resistance seen in the two colony types isolated from the letters.

The sample labeled [redacted] which was also submitted to the FBI in April 2004, was given to [redacted] by [redacted] in late 1999 or early 2000. This vial contained approximately 1 mL of frozen *Ba* Ames. [redacted] still possesses this vial and uses it. This sample was the first *Ba* Ames strain that [redacted] ever possessed.

There are several Ames derivatives listed on [redacted] agent registry. These derivatives were isolated from April 2002 Ames challenged animals when antibiotic treatment failed. The animals died and the *Ba* Ames isolated was antibiotic resistant. [redacted] provided Agents with a copy of the Agent registry with handwritten notes as to which antibiotic each of the derivatives was showing resistance. A copy of this registry was submitted to the 1A section of the file. The *Ba* Ames used in the April 2002 challenge was Ames DUGWAY material received from IVINS.

[redacted] was shown pictures of one vial of *Ba* Ames that [redacted] submitted to the FBI in April 2004 and nine of the vials that were seized from [redacted] in July 2004. [redacted] comments were written on the photo. The photos and [redacted] comments were submitted to the 1A section of the file. [redacted] provided the following information while looking at each photo:

[redacted] does recognize the photo of the sample labeled [redacted], which is written in [redacted] handwriting. [redacted] thinks the material could be starting material for a challenge or possibly from an AGI, although it looks too concentrated to be from an AGI. The sample looks too diluted to be [redacted] starting material. [redacted] starting material for the mice challenges is very concentrated. The sample could be starting material from a rabbit study. [redacted] is not sure the exact history or purpose of the sample. [redacted] does recall that the FBI came to [redacted] with a copy of the Agent Registry and asked for the sample. The sample could not be located, but was eventually found. [redacted] does not recall who found the sample or the exact activities and communications that were had with other researchers and technicians about the [redacted] believes that IVINS and [redacted] could have come over to look for the sample in building [redacted] suggested sspeaking to IVINS to determine history and purpose of [redacted]

Samples Labeled 34-42:

[redacted] recognizes samples labeled by FBI as #37, 38, 39, 40, 41, and 42. These samples were seized in July 2005. Each time [redacted] requested *Ba* Ames for a challenge IVINS would send over *Ba* Ames from [redacted] always archived between 0.5 mL to 1.0 mL of the Ames sent from IVINS. [redacted] always labeled the archival vials with the date that [redacted] took the subsample. All the archive samples were placed in a bag (item #36). [redacted] recognizes all the samples and knows the handwriting to be [redacted] own.

The 2nd floor cold room in Building [redacted] has gone down at least 2 times since [redacted] has begun working at USAMRIID. When this happens everything in the cold storage room has to be moved to another location. Whoever gets called in to respond to the broken cold room will move the contents of the coldroom to wherever there is empty space. The 2nd flood cold room is decontaminated now to allow for renovations to take place in the necropsy room. The first floor cold room has gone down at least once since late 1999. There is a coldroom in the basement of [redacted], which is not normally used for anything but the storage of dead animals unless another coldroom or freezer goes down. The basement cold room has been refurbished within the last 2-3 years. [redacted] does not recall the basement cold room going down or being decontaminated. The first and second floor cold rooms do not have any fixed shelves. There is no organization to either cold room. People would put items in these cold rooms wherever they could find space. Nobody really bothered items that were not their own. More recently there is more organization and accountability for what is placed in a cold room. The aerobiology group used lockboxes since June 2002 to store their AGI samples.

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[redacted] has never stored anything in [redacted] laboratory, however there is some exchange of *Ba* material between [redacted] and [redacted]

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[redacted] does not know if [redacted] ever possessed or worked with Ames. [redacted] had any it would have been a small amount. [redacted]

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[redacted] When [redacted] first began working at USAMRIID [redacted] told that [redacted] would be working in room [redacted] in building [redacted] However, since [redacted] had to wait to receive all of the immunizations before allowed into the BSL-3 suite, room [redacted] was vacant for awhile. [redacted]

Since approximately 1998 there was an old lyophilizer located in room [redacted], USAMRIID has recently replaced the old lyophilzer with a new one. [redacted] has never lyophilized *Ba* material. [redacted] believes that somebody using a lyophilizer to dry the *Ba* material in the anthrax letters would have created a big mess, people would have gotten sick, and left a definite footprint. [redacted] believes that acetone drying is a lot easier, safer, and does not require specialized equipment.

An aerosol challenge using dry *Ba* would never occur at USAMRIID because of the political fallout. [redacted]

[redacted] would never store *Ba* in room [redacted] technician would autoclave AGI and plate material before leaving [redacted] laboratory. If the autoclave in [redacted] was already in use, [redacted] would store material left to be autoclaved in the hood. Material waiting to be autoclaved could possibly be in the hood until the next day. [redacted] Autoclaved material would be packaged and labeled appropriately. A piece of autoclave indicator tape was affixed to material to be autoclaved. Usually the agent to be autoclaved would be written on the outside in case somebody had an exposure to the material. Writing the agent on the outside allowed for a more timely and appropriate post-exposure treatment of person's exposed. Hot material, if not refrigerated or frozen, could only be in the hood or in the autoclave. [redacted]

[redacted] believes thawing frozen *Ba* is a "no, no", since viability of the sample is lost each time freeze-thawing occurs.

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[redacted] does not ever recall big flasks of *Ba* Ames strain ever being stored or transferred to [redacted] does not believe that IVINS' flask of [redacted] material was ever stored in [redacted]

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[redacted]

[redacted] does not suspect anybody in the anthrax mailings, nor does he believe anybody has a motive.

[redacted]

[redacted]

[redacted]

[redacted]

IVINS has not spoken much about the anthrax investigation. IVINS' last interview in Spring 2005 really upset IVINS. [redacted] feels that IVINS wants to talk more about everything, but feels that due to confidentiality he cannot speak about the interview. IVINS did not tell [redacted] about the interview.

[redacted] agreed to provide Agents with copies of [redacted] notebooks located inside the BSL-3 suite. [redacted] will scan them into a PDF form and email them to Agents.

The following items were placed in an FD-340 and were submitted to the 1A section of the file:

1) A map of Building [redacted] BSL-3 suites with [redacted] comments related to [redacted] research with *Ba* Ames, [redacted] storage of *Ba* Ames, and [redacted] knowledge of other researcher's research and storage of *Ba* Ames

2) Paperwork documenting the internal transfer titled "In-house strain transfer record" of *Ba* from June 2002 until present.

3) An inventory of Aerosol Challenge information (no title).

4) Agent registry dated 1/6/2006, with handwritten notes as to which antibiotic each of the derivatives was showing resistance.

5) A copy of Agent registry dated 4/30/2004, with handwritten notes by [redacted]

6) Photos of the vials of *Ba* Ames, which were submitted to the FBI in April 2004 (FBI requested samples) and July 2004(FBI seized samples), with [redacted] comments on each photo.

7) [redacted]

8) An electronic mail message from BRUCE IVINS to [redacted] regarding sample labeled as [redacted]

9) Interviewer's notes.

10) Strain list shown to [redacted] during interview, [redacted] The Strain list is titled "List of B. anthracis stains from the collection of G.Eliave Institute of Bacteriophages, Microbiology and Virology." [redacted] does not recall seeing the strain list before, but suggested Agents talk to [redacted] regarding more information pertaining to the strains.

11) FD-597 Receipt for Property Received documenting receipt of items provided by [redacted]

FD-302 (Rev. 10-6-95)

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FEDERAL BUREAU OF INVESTIGATION

Date of transcription 02/21/2006

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[redacted] date of birth [redacted] social security number [redacted] telephone number [redacted] was interviewed on February 21, 2006 at [redacted] place of employment at [redacted] by SA [redacted] and SA [redacted] After being advised of the identities of the interviewing agents and the nature of the interview, [redacted] provided the following information:

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[redacted] was shown four (4) pictures of a flask labeled Oct 97, GLP Ames Spores, 7737 RMR 1029. [redacted] could not recall ever having seen the flask while working in Building [redacted] Room [redacted] at the United States Army Medical Institute of Infectious Diseases (USAMRIID). [redacted] did recall seeing several containers in Room [redacted] with screw on tops. The containers were of varying sizes and had various labels on them. [redacted] could not recall ever having seen any container labeled Ames. [redacted] noted that the largest container that Dr. BRUCE IVINS had in Room [redacted] was 750ml.

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A copy of the pictures shown to [redacted] are attached to this document.

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Investigation on 02/21/06 at [redacted]

File # 279A-WF-222936-USAMRIID — 1492 Date dictated

by [redacted]

[redacted]060521.wpd

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FEDERAL BUREAU OF INVESTIGATION

Precedence: Priority **Date:** 2/27/2006 b6 b7C

To: Operational Technology **Attn:** [redacted], UC, Forensic Audio, Video and Image Analysis Unit (FAVIAU), QT, ERF

From: Washington Field
Squad AMERITHRAX-1
Contact: SA [redacted] b6 b7C

Approved By: [redacted]

Drafted By: [redacted] b6 b7C

Case ID #: 279A-WF-222936-USAMRIID ✓-1498

Title: AMERITHRAX;
Major Case 184

Synopsis: [redacted] is requested to enhance AMERITHRAX collected images.

Enclosure(s): CD-R containing images

Details: Captioned case is predicated on the mailings of letters containing anthrax, which were sent to the New York Post, Tom Brokaw, and United States Senators Tom Daschle and Patrick Leahy.

Following the February 21, 2006 interview of [redacted] [redacted] emailed writer with approximately 57 JPEG images taken at the United States Army Medical Research Institute of Infectious Diseases (USAMRIID). The images were taken of the interior of Building 1412 at USAMRIID. Some of the pictures include Room 115 of Building 1412, the laboratory space of BRUCE IVINS. b6 b7C

It is requested that [redacted] enhance 11 selected images provided by [redacted] in order to be able to read writing on containers in the images. b6 b7C

Attached to this document is a copy of the email from [redacted] to writer enclosing the images. The images were submitted to the captioned file via 1A 6764.

[redacted].wpd

(X) [redacted]

b6
b7C

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To: Operational Technology From: Washington Field
Re: 279A-WF-222936-USAMRIID

LEAD(s):

Set Lead 1: (Action)

OPERATIONAL TECHNOLOGY DIVISION

AT QUANTICO, VA

b6
b7C

It is requested that [redacted] enhance 11 selected images provided by [redacted] in order to be able to read writing on containers in the images.

♦♦

FEDERAL BUREAU OF INVESTIGATION
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