

**DEPARTMENT OF INDUSTRIAL RELATIONS  
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December 23, 2009

**Case Number:      S1110-003-09**

**Investigation Report**

**UNIVERSITY OF CALIFORNIA, LOS ANGELES**

**Brian Baudendistel, Senior Special Investigator**

**TYPE AND CHARGES:** Industrial Fatality

**CALIFORNIA PENAL CODE VIOLATION:**

**Section 192-** Involuntary Manslaughter

**CALIFORNIA LABOR CODE VIOLATION:**

**Section 6425(a)-** Willful violation resulting in death or permanent or prolonged impairment.

**CALIFORNIA CODE OF REGULATIONS, TITLE 8:**

**Section 3203(b)(2)-**Failure to maintain written training records relative to occupational exposure to hazardous chemical in laboratories (Cited as a Regulatory violation, Citation 1, Item 1).

**Section 3203(a)(6)-**Failure to establish, implant and maintain an effective Injury and Illness Prevention program; failure to correct unsafe workplace conditions in a timely manner (Cited as a Serious violation, Citation 2, Item 1).

**Section 5191(f)(4)-**Failure to provide chemical safety training to employees (Cited as a Serious violation, Citation 3, Item 1).

**Section 3383(b)-** Failure to require clothing appropriate for the work to be worn (Cited as a Serious Accident-Related violation, Citation 4, Item 1).

## **SYNOPSIS:**

The victim, a 23 year-old laboratory Research Associate employed by the University of California at Los Angeles, was assigned to the University's Organic Chemistry Department. The victim was conducting research in an Organic Chemistry lab, under the direction of the lab's Principal Investigator. On December 29, 2008, the Victim was attempting to utilize a 60ml plastic syringe to withdraw approximately 53ml of a highly reactive (pyrophoric) liquid reagent from a glass storage bottle. As the Victim was attempting to transfer the reagent, the plunger of the syringe became dislodged from the syringe barrel, causing the reagent to be released. The reagent spilled onto the torso and hands of the Victim and immediately caught fire. The fire was eventually extinguished by another researcher working nearby. The Victim sustained second and third degree burns over approximately 43% of her body. The Victim died eighteen days later on January 16, 2009, as a result of her injuries.

The investigation revealed that the victim was not wearing a lab coat at the time of the incident. It was also determined that the Victim was not following acceptable procedures for transfer of the pyrophoric reagent at the time of the incident, nor had the Victim received the necessary training relative to making a transfer of the reagent. It was also determined that the employer failed to provide chemical safety training to the Victim prior to directing her to undertake laboratory work.

The investigation also disclosed that the employer was aware that employees did not routinely wear lab coats or other necessary personal protective equipment and that the employer failed to ensure that such equipment was utilized by its employees.

## **EMPLOYER:**

University of California at Los Angeles  
405 Hilgard Avenue  
Los Angeles, CA 90095  
310-825-2151

## **DATE/TIME OF INCIDENT:**

December 29, 2008  
@1500 hours

## **LOCATION OF INCIDENT:**

Molecular Science Lab 4221  
Molecular Scene Building

## **VICTIM:**

Sheharbano "Sheri" Sangji  
DOB: 11-02-1985

**SUSPECTS:**

Dr. Patrick Harran  
Donald J. Cram Chair in Organic Chemistry  
University of California, Los Angeles  
607 Charles E. Young Drive East  
5505A Moli Sci.  
Los Angeles, CA 90095

University of California at Los Angeles  
405 Hilgard Avenue  
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**PRELIMINARY BACKGROUND:**

The University of California Los Angeles (UCLA) is one of 10 campuses that comprise the University of California system.<sup>1</sup> UCLA maintains a student enrollment of approximately 39,650

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<sup>1</sup> The UC system also includes five medical centers, three affiliated national laboratories, and a statewide agriculture and natural resources program. The UC system has 220,000 students, 180,000 faculty and staff, with an \$18 billion annual operating budget (See [www.universityofcalifornia.edu](http://www.universityofcalifornia.edu)).

The University of California exists as a public trust pursuant to Article IX, section 9 of the California Constitution. The trust is administered by a California domestic corporation organized as "The Regents of the University of California"

students. The University consists of 174 buildings on 419 acres.<sup>2</sup> As a major science research institution, UCLA operates in excess of 2000 individual laboratories campus-wide. UCLA employs approximately 1000 personnel. UCLA's administration is headed by a Chancellor's office, with various departments under the direction and control of the Chancellor (See UCLA Organizational Chart, **Tab ii**).

In an effort to meet its obligations to provide a healthy and safe work environment, UCLA maintains various policies with respect to workplace safety. The "core" principals guiding the University's efforts in this regard are found in policy 811 which provides, in relevant part:

"It is University policy to comply with all applicable health, safety and environmental protection laws, regulations and requirements...the following campus officials have particular responsibility for implementing the principles and practices of this Policy and for the related conduct of their subordinate staffs.

A. The Chancellor is responsible for the implementation of UCLA's Environmental Health and Safety Policy at all facilities and properties under campus control.

B. Vice Chancellors are responsible for implementation and enforcement of UCLA's Environmental Health and Safety Policy in all facilities and operations within their respective jurisdictions.

C. Deans and department heads are responsible for establishing and maintaining programs in their areas which will provide a safe and healthy work and living environment. Each campus unit will provide ongoing support for its safety program in its annual budget.

D. Principal Investigators and supervisors are responsible for compliance with this policy as it relates to operations and activities under their control.

**E. The UCLA Office of Environment, Health & Safety (EH&S) is responsible for monitoring compliance with this policy. EH&S has designated inspection and enforcement activity from the appropriate Vice Chancellor or safety committee...**

EH&S will establish oversight, advisory, and compliance programs for monitoring campus operations and activities to ensure adequate environmental health and safety measures are undertaken. Applicable

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(Regents). The Regents are comprised of a 26 member governing board. Article IX, Section 9 grants the Regents broad powers to organize and govern the university and limits the Legislature's power to regulate either the university or the Regents. However, in addition other several other exceptions, statutes that express the state's general police power, such as workers' compensation and workplace safety regulations apply to the Regents (See Regents of University of California v. Superior Court (1976) 17 Cal.3d 533; San Francisco Labor Council v. Regents of University of California (1980) 26 Cal.3d 785; Campbell v. Regents (2005) 35 Cal 4<sup>th</sup> 311, 322.).

<sup>2</sup> [www.ucla.edu](http://www.ucla.edu)

health and safety standards promulgated by federal, state, and local agencies, as well as campus policies, shall be followed in establishing the criteria to assist departments in compliance activities. In the absence of appropriate statutes and governmental regulations, the published standards of recognized professional health and safety organizations shall serve as guides...” [Emphasis Added] (See, UCLA Policy 811, effective 07-01-1998, **Tab 20**).

To comply with Cal-OSHA’s Chemical Hygiene Standard, mandated under Title 8, California Code of Regulations Section 5191<sup>3</sup>, UCLA developed and implemented a Laboratory Safety Manual.<sup>4</sup> Similar to the University’s general scheme under Policy 811, the University’s Chemical Hygiene Plan delegates the responsibility for oversight and compliance primarily between the University’s EH&S Department and the Principal Investigator assigned to each laboratory group:

**“...Principal investigators and supervisory personnel have the primary responsibility for the activities of their staff and for conditions in the rooms and areas under their control. It is their responsibility to:**

- acquire knowledge and information needed to provide safe working conditions for all laboratory personnel;
- continually educate all laboratory personnel on the potential hazards associated with a specific task and the precautionary measures (laboratory practices, engineering controls, and personal protective equipment) appropriate for the hazards;
- monitor staff to ensure safe work practices are followed;
- determine the level of protective apparel and equipment required to**

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<sup>3</sup> T8CCR 5191 requires employers to implement and maintain a written Chemical Hygiene Plan which contains the following components: (1) **Standard operating procedures (SOP's) relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals;** (2) **criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals;** (3) **A requirement that fume hoods are functioning properly, that all protective equipment shall function properly, and that specific measures shall be taken to ensure proper and adequate performance of such equipment;** (4) **providing training and information to employees apprising them of the hazards of chemicals present in their work area;** (5) identifying circumstances that require prior approval from the employer before work is begun; (6) provision for employees who work with hazardous chemicals to receive medical attention and consultation, including any follow-up examinations which the examining physician determines to be necessary, under specified circumstances; (7) Designation of a Chemical Hygiene Officer and the establishment of a Chemical Hygiene Committee and; (8) **Provision for additional employee protection for work with particularly hazardous substances.** [Emphasis Added].

<sup>4</sup> See UCLA Department of Chemistry and Biochemistry, *Laboratory Safety Manual*, 3rd Edition, BOI Investigation Report, Binder 4, UCLA Bates 000673-000785.

**adequately protect lab personnel (emphasis added),**

- ensure self-audits for chemical hygiene, housekeeping and emergency equipment are conducted on a regular basis-,
- provide lab specific written standard operating procedures (SOPS) for hazardous chemicals, equipment and processes;
- advise and assist in improvement/development of safe work practices;
- investigate accidents and initiate corrective actions which ensure safe working conditions;
- implement new work practices or policies recommended by safety committees or the Office of Environment, Health & Safety;
- meet the legal requirements of governmental legislation for occupational health and safety, and waste disposal as advised by the Office of Environment, Health & Safety

**The Office of Environment, Health & Safety is responsible for assisting departments, principal investigators, and supervisory personnel in:**

- identifying safety hazards in the laboratory;
- providing technical guidance on matters of laboratory safety;
- developing and conducting training or informational programs for laboratory personnel on health and safety issues;
- developing and improving safe work practices and policies;
- investigating accidents and developing corrective actions which ensure safe working conditions;
- meeting the legal requirements of governmental legislation for occupational health and safety, and waste disposal in laboratories...”  
**[Emphasis added].**

As a critical component of the University’s Chemical Hygiene Plan, Principal Investigators are required to develop and implement Standard Operating Procedures<sup>5</sup> relative to the use of hazardous chemicals, substances, processes or operations that are carried out in the laboratory setting:

**APPENDIX B: STANDARD OPERATING PROCEDURES**

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<sup>5</sup> id.

## Instructions for Completing Standard Operating Procedures:

To be in compliance with the Cal/OSHA Laboratory Standards, laboratory-specific **Standard Operating Procedures (SOPs) are required to be included in your Chemical Hygiene Plan.** This manual does not provide specific SOP- for the hazardous chemical or hazardous substance use operations or procedures in your particular laboratory. **If your laboratory research involves use of hazardous substances, chemicals or equipment, you will need to develop laboratory-specific SOP's to supplement the information found in the EH&S publication—"Laboratory Safety Manual and Chemical Hygiene Plan"...**

### 1. Type of SOP--check one box

Process: the SOP will be for a process such as distillation, synthesis, etc.  
Hazardous chemical: the SOP will be for an individual chemical such as arsenic, formaldehyde, nitric acid, etc.

Hazard class: the SOP will be for a hazard class of chemicals such as oxidizer, flammable, corrosive, etc.

Equipment or system: the SOP will be for individual equipment or systems that pose a hazard such as lasers, machines with moving parts, UV lamps, etc.

### 2. Describe the Process, Hazardous Chemical or Hazard Class, Equipment or System

Process: Briefly describe the process and name all the hazardous chemicals or substances used in the process....

### 3. Potential Hazards

Describe all the potential hazards for each process, hazardous chemical, hazard class, equipment or system. Describe potential for both physical and health hazards. Health hazards include carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic systems, and agents which ...

Describe special procedures for spills, releases, exposure or emergency shut down (e.g., neutralizing agents, use of fluorescence to detect materials, etc.). Indicate how spills, accidental releases and exposures will be handled. List location of the following emergency equipment: chemical

spill clean-up kit, first-aid kit, emergency shower, eyewash, and fire extinguisher...

### 13. Protocols

Insert a copy of your step-by-step specific laboratory procedures for the process, hazardous chemical or hazard class....

**Identify the required PPE for the process, hazardous chemical, or hazard class. PPE includes but is not limited to: gloves, aprons, lab coats, safety glasses, goggles, masks, respirators, or faceshields. [Emphasis Added].**

### **NARRATIVE:**

On July 1, 2008, Dr. Partick Harran was hired by UCLA as a tenured Professor and was appointed to fill the D. J. and J. M. Cram Chair in Organic Chemistry. Prior to his appointment at UCLA, Dr. Harran had been a tenured Professor in the Biochemistry Department at the University of Texas, Southwestern Medical Center. Dr. Harran received his undergraduate degree from Skidmore College (B.A. 1990) and graduate degree in Chemistry from Yale University (PhD 1995).<sup>6</sup>

Upon arrival at UCLA in July 2008, Dr. Harran moved into office space located on the 5<sup>th</sup> floor of the Molecular Sciences Building and into temporary lab space on the 4<sup>th</sup> floor, pending completion of renovations to larger permanent lab space on the 5<sup>th</sup> floor. Dr. Harran was provided with a general set-up fund from UCLA in the amount of \$3,200,000.00, with additional annual income from the D.J. and J.M. Cram endowment of approximately \$70,000.00.<sup>7</sup>

As a principal investigator (PI), Dr. Harran was responsible for the hiring and oversight of all paid researchers assigned to his lab group. At the time of the fatal incident, Dr. Harran supervised approximately 7 paid researchers. Dr. Harran's anticipated staff was 20-22 personnel.

Victim Sangji was hired by Dr. Harran as a Research Associate II on October 13, 2008. Victim Sangji obtained her B.A. degree in Chemistry from Pomona College in May 2008. During the approximate four month period between her graduation from Pomona College and employment at UCLA, Victim Sangji worked as Synthetic Chemist at Norac Pharma, in Azusa, CA. According to

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<sup>6</sup> Dr. Harran is also the recipient of the Norman Hacker-man Prize of the Robert A. Welch Foundation, 2007; E. Bright Wilson Prize-Harvard University, 2005; Merck Research Laboratories Chemistry Council Award, 2005-2007; Pfizer Award for Creativity in Organic Synthesis, 2003; Distinguished Alumni Award, Skidmore College, 2003; Eli Lilly Grantee, 2003-2004; AstraZeneca excellence in Chemistry Award, 2002; Alfred P. Sloan Research Fellow, 2002-2004; National Science Foundation CAREER Award, 2000-2004; and American Institute of Chemists Award, Skidmore College, 1990.

<sup>7</sup> The specific terms and conditions the University funding are detail in Dr. Harran's Personnel File. See BOI Investigation Binder, Vol. 5, UCLA Bates 001295.

records obtained from Norac Pharma, Victim Sangji was closely supervised and did not perform any independent lab work “due to her limited laboratory experience”.<sup>8</sup>

On October 17, 2008, Victim Sangji was assigned by Dr. Harran to complete a reaction to produce Vinylolithium; which was to be used in furtherance of research being conducted by Dr. Harran. According to Dr. Harran, the reaction was a “standardized protocol”, which was classified as a moderately complex procedure. The reaction involved the use of a number of highly flammable/volatile solvents and reagents.

The first step of the reaction involved combining Vinylbromide with two equivalents of tert-Butyllithium, to produce Vinylolithium. tert-Butyllithium is a highly reactive, pyrophoric reagent (spontaneously ignites when exposed to air). As such, the reagent must be stored and handled under an inert atmosphere at all times. Additionally, the reagent is highly reactive to water and produces extremely flammable gases upon exposure to moisture. As such, the reagent must be handled only by experienced laboratory personnel under carefully controlled conditions and with suitable protective measures in place.

The tert-Butyllithium being used by Victim Sangji on October 17, 2008 was manufactured by Sigma-Aldrich Co. ([www.sigma-aldrich.com](http://www.sigma-aldrich.com)) and consisted of a liquid solution of tert-butyllithium (hereinafter tBuli or t-Butyllithium) 1.7M in pentane.<sup>9</sup> The front of the product container (packaged in a 100ml glass bottle with sure-seal cap) is labeled<sup>10</sup> with the following warning:

**US Pyrophoric Corrosive. EU Highly Flammable. Corrosive. Dangerous for the environment.**

Highly flammable. Contact with water liberates extremely flammable gases. Spontaneously flammable in air. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness. Keep away from sources of ignition-no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of fire, use dry powder. Never use water. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. Target organ(s): Nerves. Handle and store under inert gas.

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<sup>8</sup> A detailed discussion of Victim Sangji’s prior academic and work experience are detailed in subsequent sections of this report.

<sup>9</sup> Pentane is classified as an extremely flammable solvent (NFPA Flammability Rating: 4). See Pentane MSDS, **Tab 18**.

<sup>10</sup> A copy of the product label is attached under **Tab 17**.

Additionally, the product's Material Safety Data Sheet (MSDS) provides in relevant part:

“...EMERGENCY OVERVIEW

Pyrophoric (USA) Highly Flammable (EU). Corrosive. Reacts violently with water. Contact with water liberates extremely flammable gasses. Spontaneously flammable in air. Causes Burns.

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) of type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles...”

[See Tab 20].

t-Butyllithium is an Organolithium compound and is classified as an air-sensitive reagent. Given its highly volatile properties, t-Butyllithium requires the use of specialized handling procedures. Accordingly, Sigma-Aldrich (hereinafter Aldrich) provides two technical bulletins relative to the safe handling of pyrophoric and air-sensitive reagents. The first, Technical Bulletin AL-164, *Handling Pyrophoric Reagents*, provides in pertinent part:

“...I. INTRODUCTION AND PRECAUTION

Due to the hazardous nature of pyrophoric reagents, we strongly recommend that all users read this bulletin carefully and completely before starting any actual laboratory work. If you are unsure of any of these procedures or if you need assistance, please contact us prior to use.

**All users of these reagents must be fully qualified and experienced laboratory workers to handle pyrophoric reagents without problems. All users must be made aware of the very hazardous nature of these**

**products.**

**Users must have read and understood our Technical Information Bulletin -No. AL-134 which describes standard syringe and double-tipped-needle transfer techniques before attempting to handle liquid pyrophoric reagents (see Fig. 2).**

## II. NATURE OF THE REAGENTS

Pyrophoric reagents are extremely reactive toward oxygen and in most cases, water, and must never be exposed to the atmosphere. Failure to follow proper handling techniques could result in serious injury. Exposure of these reagents to air could result in spontaneous combustion, which could cause serious burns or other injuries to the person handling the reagent or others in the immediate area.

In addition, all combustible materials, including paper products, should not be allowed to come in contact with any pyrophoric reagent at any time..." **[Emphasis added]**.

The second, Technical Bulletin AL-134, *Handling air sensitive reagents*, details the specific procedures generally applicable to transfers of t-Butyllithium (**See Tab 17**). There are two basic methods for the transfer of Organolithium solutions in the laboratory: (1) the syringe method and; (2) the cannula technique<sup>11</sup>. Either procedure requires the use of laboratory glassware that is subjected to oven drying to remove residual moisture prior to use. Additionally, both the reagent bottle and reaction flask must be purged and slightly pressurized with dry nitrogen to displace any air within the system. The reaction flask must also be vented through a mercury or mineral oil bubbler to maintain an air-tight system. Further, the reagent bottle must be clamped in the fume hood, to secure it from displacement during reagent transfer. The following additional procedures apply to the use of the syringe method:

**"... Small quantities (up to 50ml) of air-sensitive reagents and dry solvents may be transferred with a syringe equipped with a 1-2ft long needle.** These needles are used to avoid having to tip reagent bottles and storage flasks. Tipping often causes the liquid to come in contact with the septum causing swelling and deterioration of the septa, and should therefore be avoided... **In general, a syringe should only be used for a single transfer. Failure to follow this practice can result in plugged needles and frozen syringes due to hydrolysis or oxidation of the reagents...**The syringe transfer of liquid reagents (up to 100ml) is readily

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<sup>11</sup> A cannula is a tube, of varied length, that is equipped with a syringe needle at each end. The device serves as the transfer mechanism between the reagent bottle and reaction flask or addition funnel. The cannula method is preferred when transferring larger quantities of reagent, as it is essentially a direct connection between the respective vessels and minimizes the exposure to lab personnel. However, both the syringe transfer and cannula methods can expose personnel to the risk of fire and/or explosion. Accordingly, appropriate planning and protective measures are a prerequisite to their use irrespective of the method chosen.

accomplished by first pressurizing the Sure/Seal reagent bottle with dry, high-purity nitrogen followed by filling the syringe as illustrated in Fig. 8. **The nitrogen pressure is used to slowly fill the syringe with the desired volume plus a slight excess (to compensate for gas bubbles) of the reagent. Note that the nitrogen pressure pushes the plunger back as the reagent enters the syringe. The plunger should not be pulled back since this tends to cause leaks and create gas bubbles.** The excess reagent along with any gas bubbles is forced back into the reagent bottle as illustrated in Fig. 9. The accurately measured volume of reagent in the syringe is quickly transferred to the reaction apparatus by puncturing a rubber septum on the reaction flask or addition funnel as shown in Fig. 10. Note: larger syringes are available but are awkward to handle when completely full...” [Emphasis Added].

Dr. Harran maintained that his laboratory personnel followed the written procedures outlined in the Aldrich Technical Bulletin AL 134, as their Standard Operating Procedure when handling t-Butyllithium. Dr. Harran indicated these “standardized” techniques were “demonstrated to new lab members by senior personnel” (See e-mail, **Tab 7 & 22**). With respect to Victim Sangji, Dr. Harran indicated that the Victim was properly trained and experienced:

“...she had previously used reagents of that type-I believe in her undergraduate work, but certainly here she had trained with a postdoctoral fellow who had done that procedure multiple times and she herself had executed it successfully, I think three times previously.” (See *UCLA Fire Marshal’s February 5, 2009 Interview of Dr. Harran*, **Tab 34, p.3**).

Dr. Harran indicated that Victim Sangji had been trained by one of his [Harran’s] postdoctoral researchers, Dr. Paul Hurley. The training allegedly occurred during the reaction conducted by Victim Sangji on October 17, 2008.

On the date of the fatal incident, Victim Sangji, was attempting to conduct the same Vinylithium reaction as completed on October 17, 2008, albeit at a scale three times larger than the first reaction.

Victim Sangji was working on a nitrogen manifold within her assigned fume hood located in laboratory 4221. The fume hood was crowded with laboratory apparatus and, as a result, the work area for making the transfer of t-Butyllithium was somewhat restricted. Given the relative position of the reaction vessels and other components, Victim Sangji was required to work near the front edge of the exposed hood. Victim Sangji was working unsupervised.

At approximately 1300 hours, Victim Sangji was attempting to transfer 159.5ml of t-Butyllithium, in transfers of approximately 53ml each, utilizing a 60ml HSW luer-lock polypropylene syringe equipped with a 20 gauge, 2 inch long needle, as opposed to 1-2 foot long needle specified by Aldrich. The use of a 2 inch needle prevented Victim Sangji from properly clamping the reagent bottle to secure it from displacement, as the needle was too short to reach the necessary amount of reagent if inserted vertically into the top of the reagent bottle. Instead, Victim Sangji was required

to either hold and tilt the reagent bottle with one hand and pull on the syringe plunger with the remaining hand to make the withdrawal, or lay the reagent bottle on its side on the bench top of the fume hood and attempt to complete the withdrawal with one hand while stabilizing the reagent bottle with the other.

As Victim Sangji was making a transfer from the reagent bottle, the plunger of the syringe became dislodged from the syringe barrel, causing the reagent to be released. The reagent spilled onto the torso and hands of the Victim and immediately caught fire.

Although an emergency shower was located in the lab, Victim Sangji ran in the opposite direction of the shower's location (toward the laboratory exit). Another researcher, Dr. Wei Feng Chen, was working in the lab at the time of the incident and attempted to wrap his lab coat around the Victim in an effort to extinguish the fire. The lab coat was unable to suppress the fire and began to burn. The lab coat was abandoned by Dr. Chen shortly thereafter, as it was essentially consumed by the fire. Dr. Chen then poured water on the Victim from a nearby sink, which helped to extinguish the remaining flames. The Victim remained seated on the lab floor. Dr. Harran arrived at the incident location from his 5<sup>th</sup> floor office, prior to the arrival of emergency response personnel.

Emergency personnel from the UCLA and Los Angeles Fire Department arrived on scene shortly thereafter. UCLA Deputy Fire Marshall Chris Lutton also arrived on scene. Los Angeles County Health Hazmat and Los Angeles Fire Hazmat (squad 95) arrived on scene.

Los Angeles County Health Hazmat coordinated clean-up of the incident location. Two bottles of tert-Butyllithium were capped and placed into storage. Dr. Harran was instructed by the emergency responders to neutralize the reaction flasks located in Victim Sangji's fume hood.

Victim Sangji was placed under the emergency shower by EMS-1 personnel, prior to being transported to Ronald Reagan UCLA hospital. Victim Sangji sustained second and third degree burns over approximately 43% of her body and additional inhalation injury relative to the exposure to the t-Butyllithium. Victim Sangji was subsequently transferred to Grossman Burn Center. The Victim died eighteen days later on January 16, 2009, as a result of her injuries.

Investigator Zlendick and Investigator Hernandez, with the Los Angeles City Fire Department Arson Division had been assigned to conduct an investigation. The investigators traveled to UCLA Medical Center and interviewed Victim Sangji. According to the fire investigation report, the Victim confirmed that she was making a withdrawal of an unspecified chemical from a 4 oz. bottle using a 60ml syringe. The Victim indicated that she pulled the plunger out too far, causing the plunger to separate from the syringe barrel. The chemical spilled out and flashed. The Victim also stated that Hexane solution spilled on her clothes, causing her to catch on fire.<sup>12</sup>

UCLA Deputy Fire Marshall Chris Lutton directed the UCLA facilities locksmith the re-key all six entry doors to Lab 4211, in an attempt to preserve the incident scene. "No entry" signs were

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<sup>12</sup> It should be noted that Hexane was not part of the reaction being completed by Victim Sangji at the time of the incident. Additionally, an open container of Hexane was not located in or around the fume hood where Victim Sangji was working.

affixed to the outside of all entry doors and yellow barrier tape was placed outside the main entry door to lab 4221. The scene had been cleared of all personnel at the time. On December 30, 2008, Deputy Fire Marshall Lutton, along with Dr. Harran and other personnel from UCLA's EH&S Department, returned to the incident scene and noticed that several items were missing or had been moved.<sup>13</sup>

The subsequent investigation determined that UCLA and its Principal Investigator, Dr. Patrick Harran, failed to properly train Victim Sangji to handle and transfer t-Butyllithium, failed to utilize appropriate Standard Operating Procedures in the laboratory as required, and failed to both provide and ensure that adequate personal protective equipment was utilized by laboratory personnel.

#### **(a) Laboratory Procedure**

Contrary to the warnings offered by Aldrich, it appears that Victim Sangji attempted to make multiple transfers of t-Butyllithium using the same syringe. Although a common practice in Dr. Harran's laboratory, multiple syringe use can result in plugged needles and frozen syringes due to hydrolysis or oxidation of the reagents and thus lead to excessive force being placed on the plunger of the syringe.

Further the Victim's use of a 60ml syringe in an attempt to complete an approximate 53ml transfer of reagent, is contrary to both the procedures outlined by Aldrich, as well as prevailing scientific literature, which indicate that the syringe be at least twice the size of the intended transfer. The failure to follow the so-called two times rule, can cause the plunger to become unstable and creates a greater likelihood that the plunger can be inadvertently pulled from the syringe barrel.

Additionally, the manual manipulation of the syringe plunger, confirmed as an accepted practice by Dr. Harran, is also contrary to the express warnings issued by Aldrich. As noted in Technical Bulletin AL 134, pulling on the plunger can result in leaks and the accumulation of gas bubbles. Further, as confirmed by Aldrich, manual operation of the plunger can result in the addition of air into the syringe. This can result in hydrolysis of the reagent in the syringe barrel and can cause the plunger to become difficult to manipulate.

As discussed previously, the use of a 2 ½ inch needle as opposed to the recommended 12-24 inch needle was also a significant factor in this case.

#### **(b) Training**

With respect to the issue of Standard Operating Procedures (SOP'S) relative to the handling of t-Butyllithium, Dr. Harran initially represented to both UCLA EH&S and Cal/OSHA's Compliance

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<sup>13</sup> It was later determined that Postdoctoral Researchers Dr. Hui Ding and Dr. Wei Feng Chen removed a number of solvent drums that were being improperly stored in the incident lab, at the instruction of Dr. Harran. It was also determined that several items relating to Dr. Chen's research were relocated to an adjacent lab. However, based upon a review of photographs taken on the date of the incident and photographs taken by Deputy Fire Marshall Lutton on December 30, 2008, it does not appear that Victim Sangji's fume hood was altered. Further, it appears that the removal of aforementioned items was done prior to the securing of the incident scene by DFM Lutton.

Division (hereinafter Division) that lab personnel followed the procedures specified in the Aldrich ALL 134 Bulletin.

However, Dr. Harran later admitted that the Aldridge AL 134 bulletin was utilized as a “general reference” only and that training relative to the handling of t-Butyllithium was based on “knowledge” passed down from one generation of researcher to another.

Dr. Harran confirmed that he did not review the procedures outlined in the AL-134 Bulletin with Victim Sangji, nor did he inquire whether she [Sangji] was aware of the procedures outlined in Technical Bulletin 134. Dr. Harran also admitted that he never discussed with Victim Sangji the risks associated with the use of t-butyllithium.

Further, UCLA did not provide Victim Sangji with any general laboratory safety training during her employment, although a generalized safety orientation was provided to graduate students. The training, consisting of an approximately 2 hour presentation, covered general lab safety issues, including the use of personal protective equipment. It was also determined that while UCLA delegated much of its responsibility for worker safety to the Principal Investigators, the University did not require PI’s to attend safety training prior to conducting research in their assigned lab, nor did the University make any effort to evaluate PI’s fitness or competency to comply with and enforce applicable workplace and laboratory safety regulation prior to supervising employees.

Dr. Harran claimed that Victim Sangji had been properly trained to handle t-Butyllithium, in accordance with the AL-134 Technical Bulletin, by one of his [Harran’s] Postdoctoral researchers, Dr. Paul Hurley. However, Dr. Harran later admitted that he [Harran] never attempted to determine if Dr. Hurley had actually provided any guidance or instruction to the Victim, relative to the transfer and handling of t-Butyllithium.

Dr. Hurley later indicated that he may have provided general guidance to Victim Sangji relative to the procedures underlying the reaction. However, he did not have any specific recollection of the actual guidance offered to Victim Sangji, if any. Additionally, Dr. Hurley did not have any specific recollection of providing “formal training” to Victim Sangji relative to the syringe transfer method outlined in the AL-134 Bulletin.

In fact, Dr. Hurley confirmed that he did not follow the Aldridge bulletin himself and did not believe that he had ever read the Bulletin. Further questioning relative to Dr. Hurley’s actual practices revealed that many of the procedures that he employed when conducting research were, in fact, contrary to the procedures outlined by Aldrich.

The investigation revealed that procedures utilized by Victim Sangji on the date of the fatal incident were inconsistent with both the protocols outlined in the Aldridge Technical Bulletin AL-134 and accepted laboratory practice. In fact, Victim Sangji employed many of the same improper techniques used by Dr. Paul Hurley, which suggests that Dr. Hurley had provided some level of guidance during the Victim’s completion of the initial reaction on October 17, 2008.

### **(c) Personal Protective Equipment**

While Dr. Harran indicated that he always observed Victim Sangji wearing a lab coat within the lab, the investigation revealed that **Victim Sangji was not wearing a lab coat or other fire-resistant clothing** at the time of the incident. Further, Victim Sangji was not wearing fire resistant gloves or respiratory protection.<sup>14</sup> While Dr. Harran acknowledged that t-Butyllithium was a hazardous chemical that carried an extreme risk of fire and other injury if not properly handled, Dr. Harran nevertheless maintained that a cotton lab coat was sufficient protection from the high degree of risk posed by the reagent.

A review of purchase orders and invoices from the UCLA Chemistry Department failed to affirmatively establish that Victim Sangji had ever been issued a lab coat while at UCLA<sup>15</sup>. Records produced by UCLA evidence that three lab coats were obtained under Dr. Harran's account prior to the date of the fatal incident, two from the University stock room and one from an outside vendor (**See Tab 21**):

<u>Requestor</u>	<u>Date</u>	<u>Item</u>	<u>Source</u>
Amy Neilsen Graduate Student Researcher	07-21-2008	Lab Coat Large	Chemistry Department Stock
Tara Grant Asst. to Dr. Harran	09-19-2008	Men's Lab Coat Size 34	Vendor- VWR International

<u>Requestor</u>	<u>Date</u>	<u>Item</u>	<u>Source</u>
Andrew Roberts Graduate Student Researcher	09-25-2008	Lab Coat Large	Chemistry Department Stock

While Dr. Harran maintained that he “encouraged” the use of lab coats in the laboratory facilities under his control, testimony obtained from researchers employed by Dr. Harran indicated that, with few exceptions, personnel did not routinely wear lab coats while working in the lab. It was also confirmed that Victim Sangji did not routinely wear a lab coat while in the lab. The lab personnel also indicated that while Dr. Harran was aware that lab coats were not being utilized by employees, he [Harran] did not enforce any rule requiring their use. It was also confirmed that Dr. Harran

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<sup>14</sup> Victim Sangji was wearing a polyester/synthetic sweatshirt at the time of the incident and was believed to have been wearing safety glasses. However, the safety gasses were not recovered at the scene.

<sup>15</sup> It should be noted that all of the acquisitions preceded Victim Sangji's employment with UCLA. The July 21, 2008 and September 25, 2008 invoices correspond to lab coats obtained directly by the named Graduate Student Researchers. The remaining invoice pertains to a lab coat obtained by Dr. Harran's assistant, Tara Grant. While the recipient is not specified, the purchase order request was made nine days following the employment of Post Doctoral Researcher Dr. Hui Ding, and is consistent with a size appropriate for Dr. Ding. The vendor confirmed that the lab coat was delivered Dr. Harran's lab on September 29, 2008. Victim Sangji's initial application for employment was dated September 11, 2008 (eight days prior to Ms. Grant's order) and an offer of employment was not made to Victim Sangji until September 30, 2008. As previously stated, Victim Sangji began working for Dr. Harran on October 13, 2008.

generally visited the 4<sup>th</sup> floor laboratories 3-4 times daily and would have been apprised of the actual practices of his lab personnel.

Additionally, the investigation revealed that UCLA's EH&S Department was well aware that research staff within virtually all laboratories at the University routinely did not wear lab coats and other personal protective equipment while working in the labs. The EH&S Department was also aware that many Principal Investigators did not require their staff to utilize PPE. The practice was so well known by EH&S that it was simply regarded "as part of the culture". Despite being aware of the issue, the EH&S Department did not take any action to ensure that PPE was being properly utilized with UCLA's laboratories. In fact, the investigation revealed that as early as November 2007, the EH&S Department investigated at least two incidents that involved injury to laboratory personnel as a result of fire and/or explosion.<sup>16</sup> In each case, the researchers were not wearing lab coats and other required personal protective equipment (PPE). Despite knowledge of these events, the University failed to take action to ensure that appropriate PPE was being utilized by its employees.

## **I. Division Investigation**

The Division first received notification for the workplace fatality on December 29, 2008, from Bill Peck, UCLA Occupational Safety & Employee Health Manager. Associate Safety Engineer Zulfiquar Merchant (hereinafter ASE Merchant) of the Cal/OSHA Los Angeles District Office was assigned to conduct the investigation. On January 16, 2009, the Division's investigation was re-assigned to Associate Safety Engineer Ramon Porras (hereinafter ASE Porras). A copy of the Division's investigation notes are attached under **Tab 3**.

On January 5, 2009 ASE Merchant, along with ASE Porras conducted an opening conference with Mr. Bill Peck, Manager Occupational Safety and Employee Health. ASE Porras secured photographs of the lab.

### Division Interview of Dr. Patrick Harran (Tab 4)

On January 22, 2009, ASE Porras conducted an interview with Dr. Patrick Harran. Also present was Patricia Jasper, UCLA General Counsel, Office of the Chancellor.

Dr. Harran stated that he has been employed at UCLA as a full professor of Chemistry since July 2008. Dr. Harran indicated that his principal duties are teaching undergraduate and graduate students and supervising a research laboratory engaged in synthetic organic chemistry. Dr. Harran stated that prior to coming to UCLA, he [Harran] was a full professor at the University of Texas.

Dr. Harran confirmed that he was the direct supervisor of Victim Sangji with respect to the reaction that resulted in the fatal incident. Dr. Harran characterized the reaction as a routine synthetic operation on a bench scale.

Dr. Harran indicated that he was in his office [located on the 5<sup>th</sup> floor] when the incident occurred.

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<sup>16</sup> The specific facts underlying the incidents are detailed in a subsequent section of this report.

Dr. Harran stated that two other employees were working with Victim Sangji. Dr. Harran indicated that Victim Sangji was working on a project to generate Vinylolithium through the transmetallation of Vinylbromide with tert-Butyllithium. According to Dr. Harran, Victim Sangji was utilizing standard protocols when handling air-sensitive pyrophoric materials. Dr. Harran indicated that cannulation needles or a syringe are an acceptable method for handling pyrophorics. Dr. Harran stated that he has utilized the syringe withdrawal method on many occasions. Dr. Harran indicated that he normally utilizes a 60ml syringe when making a withdrawal of approximately 40ml.

Dr. Harran maintained that Victim Sangji was provided health and safety training relative to the use of tert-Butyllithium from senior personnel working in Dr. Harran's lab. Dr. Harran further stated that all lab personnel were provided lab safety training by a post-doctoral fellow. Dr. Harran was unsure whether the training was documented.

Dr. Harran indicated that Victim Sangji was not wearing a lab coat at the time of the incident, but stated that safety glasses and nitrile gloves were always utilized in the lab.

Dr. Harran stated that he was working in his office when he was notified by Hui Ding [post-doctoral researcher] of the incident. Dr. Harran indicated that he observed that Victim Sangji had been badly burned and was sitting on the floor on the lab.

Dr. Harran believed that the incident would have been avoided if the cannula transfer method was utilized.

#### Division Interview of Wei Feng Chen, Post-Doctoral Fellow (Tab 5)

On January 22, 2009, ASE Porras conducted an interview with Dr. Wei Feng Chen. Associate Safety Engineer Yu Xin Wu served as a Mandarin interpreter during the interview. Also present was Patrica Jasper, UCLA General Counsel, Office of the Chancellor.

Dr. Chen stated that he has been employed at UCLA as a Post Doctoral Fellow in Organic Chemistry since October 10, 2008. Dr. Chen stated that his immediate supervisor is Dr. Patrick Harran.

Dr. Chen stated his primary duties involve experimentation and research in Organic Chemistry. Dr. Chen indicated that he frequently uses solvent such as Hexane, ethyl acetate and chemicals such as n-Butyllithium.

Dr. Chen stated that prior to joining UCLA, he was conducting research in Organic Chemistry at the University in Shanghai and Lanzhou, China.

On the date of the fatal incident, Dr. Chen indicated that he was working in the lab [4221] and was preparing for his research experiment. Dr. Chen could not recall the specific experiment he was conducting on the date of the incident. Dr. Chen also could not recall the specific chemicals he was using on the date of the incident.

Dr. Chen stated that he normally starts working at 0900 hours. Dr. Chen was not aware of the specific time of the fatal incident, but indicated that it occurred after he [Chen] returned from lunch.

#### Division Interview of Hui Ding, Post-Doctoral Fellow (Tab 6)

On January 22, 2009 ASE Porras conducted an interview with Dr. Hui Ding. Associate Safety Engineer Yu Xin Wu was also present during the interview, along with Patricia Jasper, UCLA General Counsel, Office of the Chancellor.

Dr. Ding stated that he has been employed at UCLA as a Post Doctoral Fellow in Organic Chemistry for approximately four months. Dr. Ding stated that his immediate supervisor is Dr. Patrick Harran.

Dr. Ding indicated that his primary duties involve research in synthetic Organic Chemistry, including the use of liquid chromatography, mass spectrometry and identifying the structure and purity of organic molecules.

Dr. Ding stated that prior to joining UCLA, he was a post-doctoral fellow at Johns Hopkins University working on synthetic Organic Chemistry and Bio-organic Chemistry.

On the date of the fatal incident, Dr. Ding indicated that he working in the lab adjacent to Victim Sangji. Dr. Ding stated that he had been working in his lab for approximately five hours prior to the incident.

Dr. Ding indicated that he heard a scream coming from the adjacent lab. Dr. Ding went to the lab and observed Dr. Chen attempting to put out flames coming from Victim Sangji, using a lab coat. Dr. Ding also noticed a reagent bottle lying on its side in the Victim Sangji's fume hood and on fire. Dr. Ding believed the fire in the fume hood was small and manageable. Dr. Ding stated that he then returned to his lab and called 911. When he [Ding] returned, Dr. Ding indicated the fire on Victim Sangji had been extinguished and that the fire in the fume hood was out.

According to Dr. Ding, Victim Sangji asked that water be poured onto her. Dr. Chen then obtained some water from the sink using a jar and began pouring it onto Victim Sangji. Dr. Ding indicated he then went upstairs to Dr. Harran's office. Dr. Ding, accompanied by Dr. Harran, returned to the incident location. Dr. Ding stated that he heard the fire truck siren as he returned to the lab. Dr. Ding was unsure whether Victim Sangji was wearing a lab coat or safety glasses at the time of the incident, but did notice that Victim Sangji was wearing gloves.

#### Review of UCLA Environmental Health and Safety (EH&S) Laboratory Inspection Report (Tab 16)

On October 30, 2008, UCLA EH&S Chemical Safety Officer, Michael Wheatley, conducted a safety inspection of the 4<sup>th</sup> floor laboratories occupied by Dr. Harran's group. Andrew Roberts, a graduate student working for Dr. Harran, accompanied Mr. Wheatley during the inspection. As noted on the face of the report:

“...The safety inspection is conducted annually as required by Cal-OSHA regulation, Title 8, Section 5191. This inspection covered chemical storage and compatibility, chemical waste disposal and transport, emergency and safety information, safety equipment and supplies, hazard communication, fume hoods, fire safety, seismic safety, mechanical and electrical safety and lab practices...” [Tab 16, at p. 3].

Michael Wheatley’s inspection identified a number of safety issues relative to chemical handling and storage. Of greater significance, however, are the additional safety violations found in laboratories 4211 and 4221:

“...Personal protective equipment in the laboratories was not fully utilized by the laboratory personnel. Eye protection, nitrile gloves and lab coats were not worn by laboratory personnel. Lab coats and nitrile gloves must be worn while conducting research and handling hazardous materials in the lab. Eye protection must be worn at all times in the laboratory...” [Tab 16, at p. 1,3].

## **II. Conclusion of Division Investigation**

ASE Porras’ investigation, which consisted of an inspection of the incident site, witness interviews, and review of documents produced by the employer, determined that the employer, failed to maintain employee health and safety training records relative to occupational exposure to hazardous chemicals, failed to implement procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner, failed to provide employees with chemical safety training and further failed to require the use of personal protective equipment while working with pyrophoric materials.

Based upon this investigation, the Division issued the following citations to UCLA for violations of Title 8, California Code of Regulations (the factual descriptions of the violations are set forth in the Citations in **Tab 1**:

### **Section 3203. Injury and Illness Prevention Program.**

(b) Records of the steps taken to implement and maintain the Program shall include:

(2) Documentation of safety and health training required by subsection (a)(7) for each employee, including employee name or other identifier, training dates, type(s) of training, and training providers. This documentation shall be maintained for at least one (1) year.

*[Finding: During the course of inspection, it was determined that there were no records of safety and health training on Occupational Exposure to Hazardous*

*Chemicals in Laboratories on employees working in laboratory room 4221 as is required by the above regulation.]*

[Cited as a Regulatory Violation, Citation 1, Item 1].

**Section 3203. Injury and Illness Prevention Program.**

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall, at a minimum:

(6) Include methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazard:

a. During the course of inspection, employer did not implement procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner.

*[Finding: On 12-29-08, an incident occurred wherein an employee was working with a pyrophoric chemical without appropriate body protection. A laboratory safety inspection was conducted on 10-30-08 and identified this deficiency and recommended that laboratory coats must be worn while conducting research and handling hazardous materials in the laboratory. Another finding indicated that the amount of flammable solvents kept outside of the flammable cabinets exceeded the NFPA limit].*

[Cited as a Serious violation, Citation 2, Item 1].

**Section 5191. Occupational Exposure to Hazardous Chemicals in Laboratories.**

(f) Employee information and training.

(4) Training.

(A) Employee training shall include;

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

2. The physical and health hazards of chemicals in the work area; and

3. The measures employees can take to protect themselves from these

hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.

Reference:

Section 3203. Injury and Illness Prevention Program.

(a) Effective July 1, 1991, every employer shall establish, implement and maintain an effective Injury and Illness Prevention Program (Program). The Program shall be in writing and, shall, at a minimum:

(7) Provide training and instruction:

(A) When the program is first established;

EXCEPTION: Employers having in place on July 1, 1991, a written Injury and Illness Prevention Program complying with the previously existing Accident Prevention Program in Section 3203.

(B) To all new employees;

(C) To all employees given new job assignments for which training has not previously been received;

(D) Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;

(E) Whenever the employer is made aware of a new or previously unrecognized hazard; and,

(F) For supervisors to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed.

*[Finding: During the course of the investigation, it was determined that employees interviewed and working in a laboratory where hazardous chemicals are used did not receive training and information pursuant to what is required by the above regulation].*

[Cited as a Serious violation, Citation 3, Item 1].

**Section 3383. Body Protection.**

(b) Clothing appropriate for the work being done shall be worn. Loose

sleeves, tails, ties, lapels, cuffs, or other loose clothing which can be entangled in moving machinery shall not be worn.

Reference:

**Section 3380. Personal Protective Devices.**

(a) Protection where modified by the words head, eye, body, hand, and foot, as required by the orders in this article means the safeguarding obtained by means of safety devices and safeguards of the proper type for the exposure and of such design, strength and quality as to eliminate, preclude or mitigate the hazard. Note: In order that safety devices or safeguards, which may include personal protective equipment, be acceptable as to proper type, design, strength and quality they shall be at least equivalent to those complying with the standards approved by The American National Standards Institute, Bureau of Standards, or other recognized authorities, except that where no authoritative standard exists for a safety device or safeguard, the use of such safeguard or safety device shall be subject to inspection and acceptance or rejection by the Division.

*[Finding: During the course of the investigation, it was determined that no appropriate clothing protection nor a laboratory coat was used while working with a pyrophoric material. On 12-29--08, an incident occurred during the process of extracting a pyrophoric reagent using a plastic syringe wherein the barrel of the syringe came undone and the pyrophoric material was released. The liquid released from the syringe spilled on the employee's clothing, torso and hands and upon contact with air, immediately caught fire. The spilled material came in contact caught the employee's sweatshirt made of synthetic material and caught fire. As a result of this incident, employee had suffered second and third degree burns over 43 % of her body. Employee was confined in the hospital for more than two weeks].*

[Cited as a **Serious Accident-Related** violation, Citation 4, Item 1].

**III. BOI Investigation**

In that this workplace fatality involved a violation of safety laws, the Division's Bureau of Investigations (hereinafter BOI) conducted a mandatory investigation.

**Corporate Background/Licensing Information (Tab 8)**

A search of the California Secretary of State Corporate Records Database indicates The Regents of The University of California is organized as a domestic corporation No.C0008116. There is no listed address for the corporation. The address for service of process is 1111 Franklin Street 8<sup>th</sup> Floor, Oakland, CA 94607.

## Scene Investigation

A separate scene investigation was not conducted, as Victim Sangj's death did not occur at the time of incident. Consequently, the incident was subject to delayed BOI notification.

### **BOI Interview of Chris Lutton, Deputy Fire Marshall I, UCLA EH&S (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Lutton's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On July 29, 2009, BOI Investigator Baudendistel conducted a recorded interview, with Chris Lutton, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA and Kevin S. Reed, Associate General Counsel, UCLA Office of the Chancellor.

Mr. Lutton stated he has been employed as a Deputy Fire Marshall I with the UCLA Office of Environment, Health and Safety (EH&S) for approximately one year. Prior to employment with UCLA, Mr. Lutton was a U.S. Navy Corpsman stationed in Iraq. Mr. Lutton indicated that his primary responsibilities are emergency response, pre-fire planning and incident investigations. Mr. Lutton stated that incident investigations are conducted with Deputy Fire Marshall II, Joel Aplin.

Mr. Lutton confirmed that on December 29, 2008, he responded to an incident located in Molecular Sciences laboratory 4221. According to Mr. Lutton, he received the call at approximately 1500 hours. Mr. Lutton does not recall the specific time he arrived at the scene. Upon arrival at the incident location, Mr. Lutton observed 3-4 individuals within the laboratory and an absence of smoke or fire. Mr. Lutton observed Victim Sangji sitting on the floor at the west end of the building. Mr. Lutton stated that he then made contact with Dr. Patrick Harran. Mr. Lutton then advised all non-injured parties to leave the lab area. Initially, Dr. Harran refused to vacate the lab. Mr. Lutton indicated that he again advised Dr. Harran to exit the lab approximately 1-2 minutes later. Mr. Lutton stated that Dr. Harran then left the lab area.

Mr. Lutton observed that Victim Sangji was conscious, alert and breathing. Mr. Lutton indicated that Victim Sangji did not make any statements in his [Lutton's] presence. Mr. Lutton advised that the Los Angeles Fire Department EMT 9 arrived subsequent to his [Lutton's] entry and assumed control of the incident scene. Mr. Lutton stated that Dr. Harran was brought back into the lab along with one additional postdoctoral fellow assigned to Dr. Harran's lab. Dr. Harran confirmed that Victim Sangji was using tert-butyllithium. Mr. Lutton then advised Dr. Harran that the laboratory was going to be secured for further investigation.

Mr. Lutton stated that Dr. Harran then left the scene. Mr. Lutton indicated that the outer doors on the west side of the lab were then closed. Mr. Lutton was then shown a diagram depicting the 4<sup>th</sup> floor labs. The document was marked as Appendix A and is attached herein under **Tab 24**. Mr. Lutton then identified the various access points to the 4221 lab that had not been secured.

Mr. Lutton indicated that the Los Angeles Fire Hazmat arrived after Victim Sangji had been transported from the scene. Mr. Lutton stated that he went looking for Dr. Harran, who was needed to assist the Hazmat unit with their initial assessment. According to Mr. Lutton, Dr. Harran was located by someone at the scene and was present upon Mr. Lutton's return to the lab. Mr. Lutton indicated he [Lutton] was waiting outside the lab until the Hazmat unit released the scene back to Mr. Lutton. Mr. Lutton does not recall who was present in the lab while the Hazmat unit was on-scene. Mr. Lutton did not know what action was undertaken by the Hazmat unit.

Once the scene was released back to Mr. Lutton, he contacted UCLA Facilities Management to change the locks to the laboratory. Mr. Lutton indicated that he took photographs of the scene once the Hazmat unit left the incident location. Mr. Lutton did not recall specifically when the photographs were taken.

Mr. Lutton stated that he conducted interviews with postdoctoral fellows Ding and Feng [Hui Ding and Wei Feng Chen] while in lab 4211. Mr. Lutton indicated the interviews were not preserved in writing or recording.

Mr. Lutton did not inspect the t-Butyllithium bottles and did not secure any photographs of the containers.

Mr. Lutton was then shown a copy of the UCLA Fire Incident Report. Mr. Lutton identified the document and confirmed that it was the only report written by his office relative to the incident. The document was marked as Appendix B and is attached herein under **Tab 24**.

Mr. Lutton stated that he observed Dr. Harran cleaning up the lab. Mr. Lutton instructed Dr. Harran not to remove anything from the laboratory. Mr. Lutton indicated that Dr. Harran then advised his personnel to leave.

Mr. Lutton did not believe other personnel were present when the locksmith was on-scene. Mr. Lutton stated that he placed "no entry" signs on all doors leading into lab 4221. Mr. Lutton indicated that he left the scene and returned to his office to make the signs. According to Mr. Lutton, the locks had not been changed at that point. Mr. Lutton confirmed that he did not conduct any visual inspection of the lab between the time he took photos of the scene and the time the scene was secured and cleared. Mr. Lutton also confirmed that he did not inspect the incident scene in detail during the time he was at the incident location.

Mr. Lutton did not have any discussions with Dr. Harran regarding the incident, other than to elicit information about the chemicals that were being used by Victim Sangji. Mr. Lutton stated that he was later advised by an LAFD Arson Investigator that the plunger of the syringe being used by Victim Sangji had been pulled from the syringe. Mr. Lutton indicated that he looked at the syringe on either the 29<sup>th</sup> or 30<sup>th</sup>. Mr. Lutton did not recall whether photos were taken of the item. Mr. Lutton confirmed that no written inventory was made of the immediate incident scene.

Mr. Lutton was informed that Victim Sangji was not wearing a lab coat at the time of the incident. Mr. Lutton could not recall who provided the information to him. Mr. Lutton did not conduct an

inspection on the date of the incident to determine whether lab coats were available, nor did Mr. Lutton attempt to make a determination during the subsequent inspection on December 30th.

Mr. Lutton believes that he cleared the incident scene around 2400 hours.

Mr. Lutton stated that he returned to the incident location the following day December 30, 2008] at approximately 1000 hours, accompanied by Joel Aplin, Dr. James Gibson, Bill Peck and Dr. Harran. Mr. Lutton indicated that he secured additional scene photos. At that time, Mr. Lutton noticed that a number of 5 gallon barrels had been removed and several cabinet doors had been opened. Mr. Lutton did not believe the fume hood where Victim Sangji was working had been altered. Mr. Lutton stated that Joel Aplin secured additional photographs and advised EH&S Director, Dr. Gibson of the observations. Mr. Lutton indicated that following the inspection, the lab was locked until it was subsequently cleared by Bill Peck. Mr. Lutton did not know whether any evidence had been secured during the subsequent inspection. Mr. Lutton stated that he did not conduct any further investigation relative to the incident.

Mr. Lutton indicated that he was interviewed by Joel Aplin and the UCLA Police Department. Mr. Lutton was shown a copy of the UCLA Police Report. The document was marked as Appendix E and is attached herein under **Tab 24**. Mr. Lutton confirmed his statement contained in the report was accurate.

Mr. Lutton was shown a copy of the incident timeline prepared by Joel Aplin. Mr. Lutton confirmed his statements and the times listed were accurate. The document was marked as Appendix E and is attached herein under **Tab 24**.

### **BOI Interview of Joel Aplin, Deputy Fire Marshall II, UCLA EH&S (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Aplin's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On July 29, 2009, BOI Investigator Baudendistel conducted a recorded interview, with Joel Aplin, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA and Kevin S. Reed, Associate General Counsel, UCLA Office of the Chancellor.

Mr. Aplin stated he has been employed as a Deputy Fire Marshall II with the UCLA Office of Environment, Health and Safety (EH&S) since April 2008. Prior to employment with UCLA, Mr. Aplin had been a Deputy Fire Marshall with the City of El Cajon, CA for approximately seven years. Mr. Aplin indicated that his primary responsibilities are fire prevention, pre-fire planning and incident investigations. Mr. Aplin stated that he was the lead fire/explosion investigator at UCLA.

Mr. Aplin first received notification of the fatal incident via telephone on December 29, 2008. Mr. Aplin stated that he was at his residence at the time the call was received. Mr. Aplin began his

investigation of the incident on December 30, 2008 at approximately 1000 hours. Mr. Aplin returned to the incident site along with Dr. James Gibson, Director of the UCLA EH&S Department, Bill Peck, Manager with the UCLA EH&S Department, Deputy Fire Marshall Chris Lutton and Dr. Patrick Harran. Mr. Aplin indicated that he [Aplin] was briefed by Mr. Lutton prior to entering the lab. Mr. Aplin stated that the investigation began at the fume hood where Victim Sangji had been working. According to Mr. Aplin, Dr. Harran provided an overview of the procedures that were ostensibly followed by Victim Sangji. Mr. Aplin indicated that Dr. Harran demonstrated utilizing a pyrophoric liquid and a syringe. Initially, Mr. Aplin could not recall what was demonstrated. However, upon further questioning, Mr. Aplin provided an outline of the information provided by Dr. Harran.

Q: Describe specifically what he was relaying to you?

A: I would have to defer to him as the expert in the area of properly handling pyrophorics and the needle and syringe withdrawal method. I don't want to say or do anything that might be inaccurate.

Q: Ok. But what did he describe to you?

A: I did not take notes or audibly record him, so I don't want to have to speculate or be inaccurate here.

Q: The recollection that you have as to his explanation as to what Ms. Sangji was doing-what was that- you indicated he was using a syringe and a reagent bottle, what was he demonstrating?

A: Its my understanding if he were doing the procedure according to the Aldridge-Ames technical bulletin AL-134, it would be called the syringe withdrawal method.

Q: And what was she supposed to be withdrawing.

A: A chemical called t-Butyllithium.

Q: According to the Doctor, did he indicate to you that she was supposed to be withdrawing the t-Butyllithium into the syringe.

A; Yes

Q: You stated he demonstrated this process, tell me what he showed you.

A: I remember him putting on some gloves. I remember him holding a reagent bottle. I remember him removing the top of the bottle, holding the syringe, inserting the needle into the top of the septum and withdraw a small amount of the compound, insert it back into the reagent bottle while

under the fume hood, remove his hands and push the sash back down. I remember seeing him do that.

Q: And that process took him about how long to do.

A: Within two minutes or less.

Q: The syringe he was using, do you recall how long the needle was approximately.

A: yes, I remember that it was approximately 1 ½ inches, maybe two inches long, approximately.

Q: When he inserted the syringe needle into the reagent bottle was there any other needle placed into the reagent bottle.

A: No.

Q: Do you recall the quantity of t-Butyllithium that he had extracted from the bottle during his demonstration.

A: No.

Q: When he extracted the t-Butyllithium reagent into the syringe, did he remove the syringe prior to placing it back into the bottle.

A: I don't recall.

Q: The description that he gave you that day, did he indicate that was the normal protocol that was followed in the lab for making this reagent transfer.

A: No.

Q: Did he say that, that was not the appropriate method.

A: No.

Q: What did he say?

A: I don't believe the issue came up that day.

Q: So you never specifically asked him whether or not what he was demonstrating was appropriate or inappropriate.

A: Yes I did.

Q: Ok. On that day?

A: No.

Q: Ok. I'm talking about that day-we'll get to another day later. On that day?

A: No. I did not address that issue about appropriateness or inappropriateness methods on that day, no.

Q: And did Dr. Harran make any statements as to the appropriateness or inappropriateness of the syringe withdrawal method on December 30.

A: I don't recall.

Q: Was it your understanding that what he was showing you was an appropriate method.

A: I don't recall. I would not know. I am not a Chemist.

**[Tab 9, at 0:8:14:00-00:12:45:00]**

Mr. Aplin stated that no other demonstrations were conducted on December 30, 2008. Mr. Aplin maintained that Dr. Harran did make any comments regarding how the incident may have occurred.

According to Mr. Aplin, once the demonstration was completed, Deputy Fire Marshall Lutton advised him [Aplin] that the incident scene had been altered. Mr. Lutton indicated that a number of blue solvent canisters had been removed from the lab, a cabinet within the lab was opened and the fume hood had been altered. Mr. Aplin then advised Dr. Gibson of the occurrence and secured additional photos of the incident scene.

Mr. Aplin stated that Bill Peck released the lab for occupancy once the inspection was concluded.

Mr. Aplin indicated that he did not secure the syringe as evidence, since he considered the lab an accident scene and not a crime scene.

Mr. Aplin did not attempt to interview Victim Sangji, as he [Aplin] had been advised that an interview had been conducted by the Los Angeles Fire Department Arson Unit. Mr. Aplin stated that he did interview Dr. Harran [a transcript of the interview is attached under **Tab 34**]. Mr. Aplin did not conduct any other interviews. Mr. Aplin claims that he was advised that Victim Sangji had not been wearing a lab coat, subsequent to his inspection of the incident scene on December 30. Mr. Aplin stated that he raised the issue of a lab coat with Dr. Harran during his [Harran's] interview. Mr. Aplin confirmed that he did not re-inspect the incident scene to determine if a lab coat was available to Victim Sangji. Instead, Mr. Aplin relied upon EH&S to address the issue.

Mr. Aplin also confirmed that he responded to a prior explosion involving a “lithium compound” that occurred in another Molecular Science lab, shortly before the fatal incident involving Victim Sangji. Mr. Aplin stated that the researcher sustained burns to his face and also had glass embedded into his face and neck. Mr. Aplin was unaware if PPE (personal protective equipment) was at issue in the case. Mr. Aplin was also unaware if the victim was a student or a researcher. Mr. Aplin indicated that he completed an incident report relative to the incident and obtained photographs.

**BOI Interview of Dr. James Gibson, Director, UCLA Office of Environment, Health & Safety (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Gibson’s actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On October 5, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with James Gibson, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA.

Mr. Gibson stated he has been the Director of the UCLA Office of Environment, Health and Safety (EH&S) since September 2007. Prior to employment with UCLA, Mr. Gibson was the Director of Public Health at Princess Cruise Lines for approximately four years. Mr. Gibson possesses a PhD in Occupational Environmental and Occupational Health from the University of Illinois, a Masters Degree in Public Health from Johns Hopkins University, a Masters Degree in Life Sciences and an undergraduate degree in Toxicology.

Dr. Gibson stated that the mission of the UCLA EH&S Department is to assist in the prevention of injury and illness within the university community. Dr. Gibson confirmed that the EH&S Department is responsible for ensuring compliance with all Federal, State and Local laws. Dr. Gibson is responsible for the oversight of five divisions within the EH&S Department: (1) Administrative; (2) Research Safety; (3) Injury Prevention; (4) Environmental Programs and; (5) Fire Safety.

Dr. Gibson indicated that the EH&S Departments serve both proactive and advisory functions. The EH&S Department has a staff of 55 personnel. Approximately 20 personnel are employed as inspectors. Dr. Gibson stated that there are approximately 2000 labs in operation within the University. Dr. Gibson indicated that the total number of laboratories on campus had not been completely determined and that the EH&S Department was in the process of attempting to determine the total number of labs in operation.

The EH&S Department’s enforcement role is administered primarily through planned annual inspections of the various lab facilities within the University. Mr. Gibson stated that safety issues are noted on inspection reports and follow-up inspections are conducted to determine if identified problems have been abated. Dr. Gibson confirmed that EH&S inspectors are responsible for

ensuring that noted violations are corrected by Principal Investigators. According to Dr. Gibson, the inspections focus on issues such as the proper segregation of chemicals, proper use of personal protective equipment (PPE), use of proper laboratory procedures, maintenance of manuals, material safety data sheets and other administrative paperwork. According to Dr. Gibson, the EH&S Department did not generally review individual lab Safe Operating Procedures (SOP'S), but occasionally did so when asked. Dr. Gibson indicated that inspectors utilized a checklist during their inspections which outlined the general scope of the review. The data collected on the checklist would subsequently be reduced to report form. The finalized inspection report and recommendation would then be transmitted to the laboratories principal investigator and possible the Chair of the respective department.

At the time of the fatal incident, there were no policies in effect that required abatement of safety issues within any specified time frame. However, Principal Investigators were generally given thirty days to comply with the recommendations set forth by the inspector. Follow-up inspections were generally based upon the discretion of the individual inspector. Dr. Gibson indicated that inspectors maintain authority to shut down a lab; however, the inspector would have to observe "something serious" to take such action. Dr. Gibson could not recall an instance where a lab was actually shut down. Dr. Gibson could not recall any principal investigator who refused to correct a noted safety issue.

Dr. Gibson stated that Bill Peck was the EH&S Manager in charge of lab safety inspections. Mr. Peck had five inspectors under his direction. Dr. Gibson indicated that lab inspection reports would also be transmitted to Mr. Peck for review.

Dr. Gibson stated that Principal Investigators were responsible for safety within their lab facilities. The UCLA lab safety manual was provided to Principal Investigators through their assigned Chemical Safety Officer (Inspector). Dr. Gibson was unaware whether any policy existed which set forth the time frame for transmittal of the manual. Dr. Gibson believed that the Chemical Safety Officer maintained a log documenting when lab safety manuals were transmitted. Dr. Gibson indicated that the arrival of new Principal Investigators was frequent.

Dr. Gibson was unaware when Dr. Harran first began occupying lab space at the University. Dr. Gibson stated that keys to the lab facilities are obtained through the Chemistry Department. Dr. Gibson related that the Chemistry Department's Human Resources Department would generally notify the Chemical Safety Officer of a new Principal Investigators arrival. The Chemical Safety Officer would then place the laboratory on the inspection schedule. No pre-inspections of new labs were conducted by EH&S. Dr. Gibson was unaware whether EH&S was briefed on a Principal Investigators research activity, prior to occupancy of the lab space.

Dr. Gibson had routine discussions with Mr. Peck regarding his [Peck's] activities, but generally did not have discussions regarding consistent problems that were being noted by his department during lab inspections. Dr. Gibson indicated that the EH&S Department did not monitor what personal protective equipment was provided to lab employees, as Principal Investigators were required to provide appropriate PPE. Further, EH&S did not monitor whether a Principal Investigator was complying with their obligations to provide PPE.

Dr. Gibson was first notified of the fatal incident by Deputy Fire Marshall Chris Lutton. Dr. Gibson subsequently traveled to his office and arrived at the incident scene at approximately 1500 hours. Dr. Gibson indicated Victim Sangji had already been transported from the scene. Emergency personnel were at the scene, along with Dr. Harran and a postdoctoral fellow. Dr. Gibson did not recall observing the t-Butyllithium bottles.

Dr. Gibson remained at the incident scene for several hours, waiting for LA County Fire officials to conclude their inspection. Dr. Gibson stated that the following day, he had a meeting with Dr. Harran and Chemistry Department Chair, Al Coury. Dr. Gibson discussed the issue of PPE usage within the lab. Dr. Gibson indicated that Dr. Harran was surprised that people in his lab were not wearing PPE, as he had asked his staff to do so. Dr. Gibson did not have any specific conversations with Dr. Harran regarding the type of personal protective equipment that was provided to employees. Dr. Gibson assumed that lab coats, eye protection and gloves were provided. Dr. Gibson believed that the PPE provided to Dr. Harran's employees was sufficient, based upon his conclusion that no particular standards applied to the procedures being carried out in the lab.

Q: Based upon-what factors did you look at-how did you arrive at the conclusion that the PPE that was provided, assuming that it was provided, was adequate?

A: Well there are not specific guidelines for what is needed for, ah, for that particular experiment. Um, again we've changed that and so we have increased the requirements, but at that time there were no specific requirements.

**[Tab 9, at 0:44:00].**

Dr. Gibson stated that EH&S conducted several investigations relative to the fatal incident. Dr. Gibson maintains that he did not see Chemical Safety Officer Michael Wheatley's November 5, 2008 inspection report of Dr. Harran's labs. Dr. Gibson indicated that he became aware of a prior incident occurring in 2007 that resulted in burns to researcher Mathew Graf<sup>17</sup>, subsequent to the fatal injury involving Victim Sangji. Dr. Gibson also acknowledged that the University has had and continues to have issues surrounding the proper use of PPE in laboratories.

Q: Were you ever aware prior to Sheri's incident that there were issues with respect to researchers or employees not wearing personal protective equipment in the laboratory?

A: I was aware of it, I am still aware of it. I still think it's an ongoing struggle that we have. In the Chemistry Department, I am not aware of any systematic issues with non-compliance with the PPE requirements,

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<sup>17</sup> During the course of the current investigation, two unreported laboratory incidents involving employee injury from fire/explosion were discovered. In each case, the researchers were not wearing lab coats or other personal protective equipment. The specific facts underlying each incident are detailed in a subsequent section of this report.

um, but it is something I think is gonna require a shift in our safety culture at the University in general and, um, and there are numerous researchers, um, who still do not require that of their staff if they perceive the risks of being minimal.

Q: When did you first become aware that there was an issue in the laboratory setting?

A: I can't, can't say really that I'm aware that-I can't recall of any discussion prior to Sheri's accident where this was a, a topic of discussion. Um, it really wasn't really on my radar, um, prior to this accident.

Q: But on behalf of the EH&S Department, would Bill Peck have been aware of those issues?

A: Yes.

Q: And would he have been responsible for correcting those problems?

A: I would say yes. I mean ultimately we're all responsible for correcting these problems-the inspector, Bill Peck, myself, um all the way up to the Chancellor.

**[Tab 9 at, 0:50:23-0:53:50].**

Dr. Gibson stated that the University SOP with respect to handling t-Butyllithium was the Aldridge protocol [AL-134 bulletin]. Dr. Gibson confirmed that EH&S does not generally know whether a Principal Investigator was actually using the Aldridge bulletin. Dr. Gibson also stated that the University did not verify that an incoming Principal Investigator had been appropriately trained in safe lab practices, prior to undertaking laboratory work. Dr. Gibson confirmed that lab safety training is not required for Principal Investigators.

### **BOI Interview of William Peck, Manager, UCLA EH&S (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Peck's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On September 5, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with William Peck, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA.

Mr. Peck had been employed by the UCLA Office of Environment, Health and Safety (EH&S) for approximately 15 years, prior to his retirement on July 1, 2009. Mr. Peck was the EH&S Lab

Safety Division from 2002 up to his retirement. Prior to becoming manager of the unit, Mr. Peck was the EH&S Chemical Safety Officer.

Mr. Peck possesses a Masters Degree in Industrial Hygiene from UCLA and Bachelor of Science degrees in Zoology. Mr. Peck maintains a Certified Industrial Hygienist (CIH) designation.

As Manager, Mr. Peck supervised lab safety at UCLA. Mr. Peck had approximately 15 employees under his direction and control. At the time of the fatal incident, Michael Wheatley was the Chemical Safety Officer assigned to Mr. Peck.

Mr. Peck indicated lab inspections were completed on an annual basis. Accident investigations were also routinely conducted upon report of an injury within a lab. Mr. Peck stated that inspections focused on issues such as physical hazards in the lab, proper storage of chemicals, proper use of personal protective equipment (PPE), and maintenance of required documentation. Mr. Peck indicated that inspectors utilized a checklist during their inspection which outlined the general scope of the review. The data collected on the checklist would subsequently be reduced to report form by the inspector. The finalized inspection report and recommendations were transmitted to the laboratory's Principal Investigator, the Department Chair, as well as the graduate student or lab manager that accompanied the inspector during the walk-through. Mr. Peck confirmed that he only received some inspection reports. There was no policy in effect that specified when a report should be transmitted to Mr. Peck. However, Mr. Peck stated that he did review all of Michael Wheatley's reports prior to the fatal incident, since Mr. Wheatley was new to the position. Mr. Peck stated that the purpose of the EH&S inspection was to guide professors toward maintenance of a safe lab.

Q: Did EH&S at that time have any enforcement authority to have noted problems abated?

A: No

Q: So is it accurate to say that the findings of a particular lab inspection report were basically recommendations.

A: Basically they were, yes.

**[Tab 9, at 0:8:19:00]**

Mr. Peck indicated that Principal Investigators were generally provided 30 days to correct problems identified during an inspection. Mr. Peck stated there was no University policy that provided for any abatement period; however, the 30 day period was routine.

Q: Now with respect to, um, further action, if a Chemical Safety Officer hypothetically would issue a report and it would call for a 30 day abatement period, if that problem was not abated, what would be done by EH&S?

A: The Chemical Safety Officer or other lab inspection person revisited the person.

Q: And what was done?

A: If it wasn't corrected, they issued another report.

Q: Was there ever an occasion where more than two reports were ever issued.

A: I don't recall.

Q: Was there ever a policy or practice in effect where anything else was done besides issuing a subsequent report for failure to abate a problem?

A: I would say no.

Q: Was that the only mechanism?

A: That was the only mechanism, yeah. Uh, we did have an understanding that we would report it to the lab director-I mean not the lab director- the EH&S director if it was serious and we needed his assistance to get it corrected.

Q: And do you recall ever having to do that?

A: I recall discussing it with my Director. I recall discussing certain things about, you know, things that weren't corrected in the lab.

Q: And what Director would that be?

A: That was Director Dr. James Greenwood.

**[Tab 9, at 0:9:40:00-0:11:18:00].**

Mr. Peck stated the issues discussed with Dr. Greenwood were not documented. Mr. Peck did not recall the outcome of any of these discussions.

Mr. Peck indicated the Principal Investigators were responsible for overall safety in their labs. Mr. Peck stated the Principal Investigators sometimes assigned lab safety to a lab manager or graduate student.

Mr. Peck stated that Principal Investigators were provided with an EH&S employee's handbook which covered all general safety responsibilities. According to Mr. Peck, the handbook is provided at the start of employment and acknowledgement of receipt is signed by the employee. Mr. Peck

also indicated that the Principal Investigator's responsibilities were set forth in University Policy 811. Mr. Peck indicated that EH&S was not generally notified in advance of the arrival of a new Principal Investigator. According to Mr. Peck, a copy of UCLA's Lab Safety Manual was generally provided to new Principal Investigators at the time of their first annual inspection. Mr. Peck confirmed that EH&S did not make assessment of a Principal Investigators background with respect to safety in the lab.

Q: Was any assessment done by your department to determine whether or not a principal investigator had the requisite knowledge to comply with Federal and State laws relative to laboratory safety.

A: No. No. Not particularly.

Q: Do you know if there was any practice at UCLA for either the Chemistry Department or some other Department to make that assessment of laboratory personnel?

A: The Chemistry Department itself, no they didn't, they didn't particularly do that.

**[Tab 9, at 0:22:35:00].**

Mr. Peck indicated that at some point in 2000, he [Peck] collected data from the EH&S lab inspection reports, to identify the most common violations that were noted by his department. Mr. Peck stated that a lack of a lab manual, improper storage of acids and bases, lack of personal protective equipment and lack of documentation were the most common violations. The compiled data was utilized in a newsletter sent to all personnel assigned to the Chemistry Department. Mr. Peck stated that in approximately 2004 he [Peck] extracted the same data from subsequent inspection reports. Mr. Peck indicated the findings were not reduced to a report.

A: I think it was just used to confirm the fact that we were still having the same problems four years later.

Q: Who used that information?

A: I did as the Manager, um, and I passed it on to the lab safety people.

Q: And how did you use the information?

A: Just to make sure they inspected those points.

Q: With respect to these common problems, did the EH&S Department ever issue-beyond the newsletter-did you ever issue a directive of a bulletin advising people that they needed to follow proper procedure?

A: That was done in that newsletter in 2000. Just a little pamphlet. Um, I can't recall if I wrote anything else.

Q: Knowing that there was some pattern of problems, did the EH&S Department undertake any additional action to kind of abate those problems, other than doing your normal lab inspections.

A: No.

Q: Any reason that wasn't done?

A: No. Um, the problems we encountered were common problems-we just paid more attention to them. Um. We didn't increase inspections or anything like that.

Q: How did you pay more attention to them?

A: Just made note of them when we went in there.

Q: Now with respect to the issue of PPE, which you know is a main issue, um, what were the common problems?

**[0:31:20:00-0:32:20:00 omitted].**

A: The common problems were people weren't wearing glasses and they weren't wearing lab coats.

Q: Based upon your experience there, was there any particular reason why people weren't wearing their PPE.

A: It was just cultural I think. Um, it was hard to convince the professors that they needed to. Um, and if the professors didn't enforce it, nobody did. Because we didn't-EH&S didn't enforce things like that.

Q: And there was no specific University policy at the time that required the use of personal protective equipment, is that accurate?

A: Well in the lab safety manual there was a requirement or, you know as I say, a recommendation that, you know, that proper PPE is used. Glasses and gloves when necessary.

Q: Was it your experience though that that was not-the use of PPE-was not rigorously enforced by Principal Investigators.

A: Definitely.

Q: Did you ever take any issue with that- the fact that these PI's were not enforcing the PPE standards?

A: Just as a reminder, you know, reminded them again and again.

Q: Did you ever bring that up with your superiors?

A: It was kind of common knowledge that laboratory people don't use the proper PPE when they are in the lab.

Q: What was the response from your superiors?

A: Um, I don't recall that. I don't recall what they said to me.

**[Tab 9, at 0:29:56-0:33:34:1].**

Mr. Peck did not recall the last time he [Peck] discussed the issues of lab coats with his superiors, as the issue was common knowledge. Mr. Peck believes that he also discussed the issue with Dr. James Gibson, but he could not recall any specific conversations.

Mr. Peck stated that Principal Investigators were generally notified prior to an inspection, so that a lab representative would be available to assist the inspector. Mr. Peck indicated that Chemical Safety Officer Michael Wheatley was assigned to the Chemistry & Biochemistry Department. Mr. Peck indicated that the EH&S Department did not normally review individual lab SOP's, but would look in the lab safety manual to see if PI's maintained them. However, Mr. Peck acknowledged that lab inspectors would not know when a SOP would be required.

Q: Was there any particular area where injuries were most likely to have occurred?

A: Chemistry. That's why there was a particular Chemical Safety Officer.

**[Tab 9, at 0:38:14:00-0:38:22:00].**

Mr. Peck was aware of the 2007 workplace incident involving Graduate Researcher Matthew Graf. Mr. Peck did not review the accident investigation report, but recalls discussing the incident with the EH&S Accident Investigation Manager, Jeffrey Clark. Mr. Peck stated that he reviewed the incident report upon a recent visit to the EH&S Department.

A: This accident happened, um, in the Chemistry Department where somebody was-Matthew was- um, using a Bunsen Burner and he had alcohol close by, which is a very common thing- people do it all the time- and somehow this alcohol spilled near the Bunsen burner and you know, ignited a flame, a heavy flame-which has happened, not frequently, but has happened in the past...

Q: As a result of the incident from 11-13-2007, did EH&S undertaken any extraordinary or additional activity to either abate the problem or make people aware of the issue.

A: No. No. It's, it's kind of a common problem when there's alcohol and a flame and its sorta common knowledge that you don't use them close to one another and it was kind of dismissed by the PI himself as, you know, just a very minor kind of thing.

**[Tab 9, at 0:43:42:00-0:44:15:00].**

Mr. Peck could not recall any previous injuries similar to the incident involving Matthew Graf.

Mr. Peck also recalled a December 2008 workplace injury, involving Jonah Chung. Mr. Peck was shown a copy of the EH&S Accident Investigation Report. The document was marked as Appendix D and is incorporated herein under **Tab 29**. Mr. Peck recalls discussing the incident with EH&S Accident Investigation Manager Jeffrey Clark.

Mr. Peck was aware of Michael Wheatley's November 5, 2008 lab inspection report. Mr. Peck was shown a copy of the inspection report. The document was marked as Appendix E and is incorporated herein under **Tab 29**. Mr. Peck confirmed the recommendations contained on the report were typical of the EH&S recommendations following an inspection.

Mr. Peck first became aware of the fatal workplace incident on December 29, 2008. Mr. Peck stated that he [Peck] was at home when he received telephone call from James Gibson. Mr. Peck indicated that he initiated an accident investigation the following day. Mr. Peck met with Dr. Harran, Michael Wheatley and several members of the UCLA Fire Department at the incident location.

Mr. Peck stated that Dr. Harran concentrated on the use of the syringe and advised him [Peck] that the syringe method used by Victim Sangji was appropriate. Mr. Peck indicated that he took notes during his interview. Mr. Peck does not recall if Dr. Harran demonstrated the procedure. According to Mr. Peck, "everyone knew it [t-Butyllithium] was dangerous". Mr. Peck had never previously observed any lab personnel attempt to transfer the reagent. Mr. Peck indicated that he never reviewed any SOP's pertaining to t-Butyllithium or air-sensitive reagents. Mr. Peck stated that Dr. Harran advised him [Peck] that Victim Sangji was not wearing a lab coat at the time of the incident. Mr. Peck did not undertake any investigation to verify whether Victim Sangji had a lab coat available. Mr. Peck indicated that he was surprised that Victim Sangji was not wearing a lab coat.

A: Well when you're working with pyrophoric chemicals like that-if any splashes on you- it flames up and you wouldn't want to burn your clothing if something like that happened and when you're using hazardous material like that you should have more protective clothing on than that.

Q: But that lack of a lab coats wasn't inconsistent with your observations on a University wide scale was it not.

A: No it wasn't inconsistent.

**[Tab 9 at, 1:11:00-1:11:32].**

Mr. Peck did not have any discussion with Dr. Harran regarding the type of PPE that was provided to researchers. According to Mr. Peck, Dr. Harran indicated that the Aldrich AL-134 bulletin was the SOP followed in his lab. Dr. Harran provided a copy of the AL-134 bulleting to Mr. Peck. Mr. Peck confirmed that he had not seen the AL-134 bulletin prior to his discussion with Dr. Harran. Mr. Peck stated that Dr. Harran did not indicate that his lab practice varied from the Aldrich procedures specified in the bulletin. Mr. Peck reviewed the AL-134 bulletin and believed that the protocol followed by Victim Sangji was not fully consistent with the procedures outlined by Aldrich. Mr. Peck indicated that he discussed the use of the syringe and needle with Dr. Harran. Mr. Peck was shown a copy of the Aldrich AL-134 Bulletin. The document was marked as Appendix F and is incorporated herein under **Tab 29**.

Q: What about the size of the syringe, did you have any issues with the size of the syringe?

A: I did. I had an issue with the syringe size because. Uh, 60ML seemed like a lot to me, but it wouldn't have been a lot if you were withdrawing half the volume, if you were withdrawing 30ML perhaps. But, um, you know, if you're trying to withdraw a syringe and trying to fill it to 50 or 60ML then that size syringe wouldn't have been proper.

**[Tab 9, at 1:17:58:-1:18:24].**

Mr. Peck stated that Dr. Harran maintained that the syringe was the proper size. Dr. Harran did not offer an explanation for the size of the needle utilized by Victim Sangji.

Mr. Peck indicated that EH&S provided general lab safety training to new graduate students. The training is administered by the Chemical Safety Officer. Mr. Peck stated that students and new employees are not required to undertake the orientation prior to working in the lab. Mr. Peck indicated there was no University policy that mandated safety training. Mr. Peck also confirmed that Principal Investigators are not provided with training.

### **BOI Interview of Michael Wheatley, Chemical Safety Officer, UCLA EH&S (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Wheatley's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On July 29, 2009, BOI Investigator Baudendistel conducted a recorded interview with Michael Wheatley, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA and Kevin S. Reed, Associate General Counsel, UCLA Office of the Chancellor.

Mr. Wheatley stated he has been employed as a Health & Safety Specialist (functional title Chemical Safety officer) with the UCLA Office of Environment, Health and Safety (EH&S) since May 2008. Prior to employment with UCLA, Mr. Wheatley had been a Health & Safety Specialist with the City of Hope Medical Center for approximately 4.5 years. Mr. Wheatley possesses an M.B.A and Bachelor of Science Degree in Biological Science, as well as several professional-level certificates.

Mr. Wheatley's primary job duties consist of laboratory inspections, training, and issues relative the handling of hazardous waste. Mr. Wheatley works primarily within the Chemistry Department. Mr. Wheatley indicated there are approximately 250 labs within the Chemistry Department. Mr. Wheatley stated that individual labs are generally subject to an annual inspection. Mr. Wheatley first began conducting inspections in October 2008.

Mr. Wheatley confirmed that he was responsible for providing lab safety training and student machine shop training. Mr. Wheatley indicated the lab safety training was comprised of a two hour session covering segregation and storage of chemicals, spill clean up, MSDS utilization and referencing, use of PPE, first aid, earthquake response, etc. According to Mr. Wheatley, Principal Investigators were responsible for sending new employees for training.

Mr. Wheatley stated that Principal Investigators did not submit any documents to his attention which outlined the scope or type of experiments being conducted in their labs. Mr. Wheatley believed Principal Investigators should have SOP's, but Mr. Wheatley indicated that he would only be aware of their existence if he was shown copies of any such procedures during a lab inspection. However, there was no requirement that any SOP's be shown to Mr. Wheatley.

Mr. Wheatley stated that Principal Investigators were required to provide lab specific training to their personnel. Mr. Wheatley did not believe that Principal Investigators were required to document the training. Mr. Wheatley did not review a labs training records as part of the inspection process. With respect to PPE, Mr. Wheatley did not check to see if PPE was available for all personnel, but would only note whether personnel, to the extent personnel were in the lab, were wearing PPE.

Q: Now personal protective equipment, when you inspected a lab, to what extent did you inspect personal protective equipment?

A: Lab coats, eye protection and nitrile gloves, or gloves in general.

Q: Did you inspect an inventory of those and make a notation?

A: I just saw if people are wearing them or not. I think that's what the checklist asks for.

**[Tab 9, at 0:16:26:00]**

Mr. Wheatley stated that Principal Investigators are required to issue PPE to lab personnel. EH&S does not check to determine whether sufficient PPE is available. Further, Principal Investigators are not required to submit safety outlines or other documents to EH&S.

Mr. Wheatley believed that Dr. Harran moved in to the lab space in late September 2008. Mr. Wheatley stated that Dr. Harran's labs were some of the first that he (Wheatley) inspected. Mr. Wheatley did not receive any specific training relative to conducting lab inspections. Mr. Wheatley received some training from his supervisor Bill Peck. Mr. Wheatley had some prior experience conducting lab inspections at the City of Hope Medical Center. However, the inspection focused on biohazard safety.

Mr. Wheatley was directed by Bill Peck to follow the lab inspection checklist and document all observed violations. Principal Investigators were given thirty days to correct noted violations. Mr. Wheatley did not believe there was specific University policy regulating the time for abatement. Mr. Wheatley generally notified the Principal Investigator approximately one week prior to the inspection.

Mr. Wheatley indicated that his inspection reports were generally sent to the Principal Investigator, with copies to EH&S Manager Bill Peck and Al Coury, Chair of the Chemistry Department.

Mr. Wheatley was shown a copy of his 11-05-2008 inspection report of Dr. Harran's lab facilities. The document was marked as Appendix A and is incorporated herein under **Tab 26**. Mr. Wheatley confirmed that he provided Dr. Harran with advance notice of the inspection. Mr. Wheatley was questioned regarding his observations about the lack of PPE noted during his inspection.

Q: How many lab personnel were observed not wearing their lab coats?

A: I would say two people.

Q: How many people were in that particular lab on that day?

A: Well, besides Roberts, I saw two other people just kinda randomly walking around.

Q: Were they doing work in the lab?

A: I don't think so, I wasn't paying attention too much to that.

Q: Did you make any statement to Roberts about the lack of them wearing a lab coat?

A: Yeah, I told him that they have to wear a lab coat in the lab.

Q: And what did Roberts say to you?

A: He agreed. He said Ok.

Q: Did you address the individuals directly that you saw?

A: I don't know, I don't think so, but I told Roberts to let the lab know that they need to wear a lab coat.

**[Tab 9, at 0:36:40:00].**

Mr. Wheatley describes observing one male, with blonde hair, blue eyes and light skin and one female, also with blonde hair, blue eyes and light skin, as the individuals not wearing lab coats. Mr. Wheatley did not have the names of the individuals. Mr. Wheatley stated he observed the same individual's walking between labs and thus, noted the violation for each lab. Mr. Wheatley did not recall whether he attempted to verify if sufficient lab coats were available for personnel during his inspection.

Mr. Wheatley stated that he [Wheatley] would normally review a lab's training records and policies if they were available. Mr. Wheatley believed he asked for this information during his inspection of Dr. Harran's labs, but since the lab was relatively new, written policies had not been developed. Mr. Wheatley confirmed that Dr. Harran did not have safety documentation available, which Mr. Wheatley stated is routinely maintained by other labs at the University.

Q: Wouldn't that be something you would include on your inspection for them to correct?

A: I would.

Q: And you didn't in this case, is there some reason you didn't?

A: Because they were new and I instructed them verbally that when you start your lab safety manual-when I give it to you- I was in the process of reviewing it so I didn't have a manual to give them. I said when I give it to you go ahead and use the appendix section in the back and put all your training records in there, or make an excel database of the people you know were trained and put it in there.

**[Tab 9, at 0:52:00-0:54:13:00].**

Mr. Wheatley indicated that the revision of the lab manual consisted of updating address and contact information within the manual. Mr. Wheatley finalized the revisions in November 2008. There were no substantive changes to the document.

Mr. Wheatley stated that he [Wheatley] did provide a copy of the lab safety manual to Dr. Harran. However, Mr. Wheatley could not recall when gave the document to Dr. Harran. Mr. Wheatley does not maintain a log or other record to verify when a manual is provided.

Mr. Wheatley confirmed receiving an e-mail from Dr. Harran requesting an extension for complying with the items noted in his lab inspection report, until Dr. Harran's relocation to the 5<sup>th</sup> floor lab space. Mr. Wheatley stated that he agreed to the request. Mr. Wheatley was only "vaguely aware" of Dr. Harran's scheduled move-in date sometime in December 2008.

Mr. Wheatley believed that a thirty day period for abatement was the normal practice within the EH&S Department.

Q: Did you foresee any problems with that as a practice?

A: Um, no I wouldn't say, no, no.

Q: So even though, hypothetically, there's a violation that you saw, um, it can continue for 30 days, so long as it's corrected in a month and, as a Chemical Safety Officer, it would be ok?

A: As long as they corrected by a month.

**[Tab 9, at 1:02:44].**

Mr. Wheatley indicated that several safety issues he [Wheatley] noted were corrected at the time of the October 30, 2008 inspection. Mr. Wheatley instructed Andrew Roberts to distribute the storage of flammable liquids in excess of 60 gallons evenly among the labs. According to Mr. Wheatley, several other items were corrected that were not listed on his inspection report.

Mr. Wheatley did not take any photographs during his inspection.

Mr. Wheatley first learned on the fatal incident while at home, via a telephone call received from Bill Peck. Mr. Wheatley met with Bill Peck, James Gibson, and Dr. Patrick Harran the following day.

*[Note: Due to time constraints on June 29, 2009, the remainder of Mr. Wheatley's interview was continued until August 14, 2009.. The following summary is taken from the subsequent recorded interview, conducted at the Law Offices of Manatt, Phelps and Phillips and in the presence of Craig Moyer. Time markers, where indicated below, are taken from part 2 of the recorded interview].*

Mr. Wheatley proceeded to the incident location, along with Bill Peck, James Gibson, and Dr. Harran. The group was joined by Chris Lutton and possibly Joel Aplin and Al Coury. Mr. Wheatley secured a number of scene photos and took notes during the inspection. Mr. Wheatley did not retain the notes, but stated the information contained within the notes was used by Bill Peck in preparing the EH&S Investigation Report. Mr. Wheatley stated the inspection focused on the

procedure being utilized by Victim Sangji at the time of the incident. According to Mr. Wheatley, Dr. Harran provided a detailed description of the events leading up to the incident primarily to Bill Peck, James Gibson, and the other personnel present in the lab. Mr. Wheatley recalls that Dr. Harran described the syringe withdrawal process. Dr. Harran had a bottle of t-Butyllithium. Mr. Wheatley observed Dr. Harran remove the para-film covering the cap of the reagent bottle, but does not specifically recall what Dr. Harran did with the reagent.

Q: In describing this procedure that Sheri was doing on the day of the incident, did Dr. Harran say that what she was doing was an appropriate method?

A: Sounded like it. He sounded pretty confident.

Q: Did he make any statements directly saying that that was an appropriate method?

A: Yeah. Yeah. He said it was appropriate.

**[Tab 9, Part II at 0:07:36:00].**

According to Mr. Wheatley, Dr. Harran indicated that he had trained Victim Sangji to complete the reagent transfer. However, upon further questioning, Mr. Wheatley stated that he did recall if Dr. Harran actually represented that he [Harran] had trained Victim Sangji.

Q: Did Dr. Harran indicate whether any standard operating procedure was followed in doing this operation.

A: Ah, he mentioned the standard operating procedure from Sigma.

**[Tab 9, Part II at 0:09:18:00].**

Mr. Wheatley was then shown a copy of the Aldrich Technical Bulletin AL-134. Mr. Wheatley identified the bulletin as the operating procedure referenced by Dr. Harran. Mr. Wheatley stated that Dr. Harran did not provide him [Wheatley] with a copy of the AL-134 Bulletin during the inspection on December 30. Mr. Wheatley did not have any specific discussions with Dr. Harran concerning the Aldrich Bulletin. Mr. Wheatley believes Dr. Harran sent him [Wheatley] a copy of the AL-134 Bulletin in early January 2009.

Q: Was it your understanding from Dr. Harran that that was the document that they followed –the procedures they used- the procedures outlined in that bulletin?

A: Um. I would think so.

Q: Well, let's not think so. Do you recall having a conversation with Dr. Harran wherein he indicated to you that he followed that technical bulletin?

A: Well I could say yes, but it's just hard to jog my memory to find that particular conversation, but.

Q: But Dr. Harran did e-mail you that document, correct?

A: Yes.

Q: And what was the purpose of him e-mailing you that document?

A: Um, to show that they actually followed this SOP.

Q: Did you make a request, um, that Dr. Harran provide you with some document showing that he had an SOP in place?

A: Yeah.

**[Tab 9, Part II at 0:11:20:00-0:12:37:00].**

Mr. Wheatley did not compare the techniques described by Dr. Harran on December 30, to the procedures outlined in the AL-134 Bulletin. Mr. Wheatley conducted limited internet research on basic information underlying the procedures performed by Victim Sangji. Mr. Wheatley did not make any determinations as to whether Dr. Harran was following the AL-134 procedures. Mr. Wheatley indicated that he would not normally review a Principal Investigator's SOP's. Further, Mr. Wheatley stated there was no University policy which required EH&S to review SOP's. Mr. Wheatley confirmed that he had never reviewed any SOP's prior to the fatal incident.

Mr. Wheatley became aware that Victim Sangji was not wearing a lab coat several weeks after the incident. Mr. Wheatley believes that he was informed by Bill Peck.

Mr. Wheatley stated that prior to the incident, he was in a laboratory at least once a day. Mr. Wheatley indicated he would often see lab personnel not wearing lab coats. Mr. Wheatley would occasionally remind personnel to wear lab coats. Mr. Wheatley estimated that approximately 20% of all personnel within a lab would not be wearing lab coats when he made these observations.

Mr. Wheatley was then questioned about statements made during his previous interview relative to the October 30, 2008 lab inspection.

Q: Do you recall having a conversation with Andre Roberts regarding the use of a lab coat?

A: During my lab inspection.

Q: Ok. And do you recall what the substance of that conversation was?

A: Yeah, as I was going through my checklist I came to the part where it, it talked about PPE. I told him, you know, that people in the lab should be wearing a lab coat.

Q: Did you ever tell him it was discretionary?

A: I don't remember if I said that.

Q: Ok. But you telling him that they needed to wear a lab coat would not necessarily be consistent with University policy at the time, is that correct?

A: Yeah.

Q: And, um, do you recall who it was that was not wearing a lab coat?

A: Um, well it was Andrew who was with me, and I saw two other people in the lab.

Q: Do you know how many people were in the lab that day that you did your inspection?

A: Uh, it was Andrew and two other people-so three of them total.

Q: So no one was wearing a lab coat that you saw inside the lab?

A: No.

**[Tab 9, Part II at 0:29:45:00-0:34:30:00].**

Mr. Wheatley conducted an investigation of a laboratory incident involving injury approximately one week prior to the fatal incident. Mr. Wheatley stated that the incident occurred on the third floor of the Molecular Science Building. Mr. Wheatley identified the victim as Jonah Chung. According to Mr. Wheatley, a reaction vessel exploded causing Mr. Chung to be struck in the face with shards of glass. Mr. Wheatley does not recall the specific reagents involved. Mr. Wheatley prepared a report and took photos of the incident scene. Mr. Wheatley could not recall whether Mr. Chung was wearing a lab coat or gloves, but stated the victim was not wearing safety goggles.

Mr. Wheatley stated that it was normal practice to discuss the facts of an incident with the Principal Investigator, but that no action was taken against a Principal Investigator for not enforcing the use of PPE in their labs. Mr. Wheatley indicated that information about PPE usage contained in the University's lab Safety Manual was not necessarily a requirement, but rather, were merely recommendations.

Q: But beyond just telling them after the fact, um, is anything done to a PI for not enforcing a policy to wear PPE.

A: Ah, no.

Q: At the time though, there was not actual policy that required the wearing of PPE, correct?

A: No.

Q: It's more of a recommendation?

A: It's all recommendation.

[Tab 9, Part II at 0:43:10:00-0:43:40:00].

### **BOI Interview of Andrew Roberts, Graduate Student Researcher (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Roberts actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On July 29, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with Andrew Roberts, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA.

Mr. Roberts has been employed by UCLA as a Graduate Student Researcher for approximately one month. Prior to his most current appointment, Mr. Roberts was classified as a Graduate Student. Mr. Roberts first began working in Dr. Harran's lab in August 2008. Mr. Roberts was paid through a UCLA stipend and not through Dr. Harran. Mr. Roberts' duties as a researcher involved the completion of various reactions relating to organic synthesis. Mr. Roberts stated that he normally worked in the lab between the hours of 0900 through 2200 hours. Mr. Roberts hours were reduced to some degree after the start of classes in September 2008, to accommodate coursework and teaching responsibilities. Mr. Roberts stated the additional coursework and teaching involved approximately 10-12 hours per week.

Mr. Roberts indicated that research in Dr. Harran's lab was based upon a written plan, which may be modified depending upon the research outcomes. Mr. Roberts stated that all changes would be made based upon Dr. Harran's approval. Mr. Roberts initially worked with three other researchers: (1) Amy Nielsen, Graduate Student; (2) Brian Blank, Graduate Student; and (3) Paul Hurley, Postdoctoral Researcher.

Mr. Roberts indicated lab personnel eventually increased to include Victim Sangji, Hui Ding, Wei Feng Chen, Hai Xia Liu, and Iyla Yakovlev.

Mr. Roberts stated that Dr. Harran generally visited the lab 1-2 times in the morning and that Mr. Roberts would often discuss research with Dr. Harran in his [Harran's] office in the afternoon. According to Mr. Roberts, Dr. Harran would customarily provide suggestions relative to the work undertaken by Mr. Roberts and would often check on the results of Mr. Roberts' experiments. Mr. Roberts indicated that Dr. Harran was aware of his [Roberts] activities on a daily basis. Mr. Roberts confirmed that research progress was documented via a lab notebook.

Mr. Roberts stated that he received general lab safety training in early September from Michael Wheatley. Mr. Roberts stated that he believed that the use of a lab coat was optional, based upon representations from Michael Wheatley, made during his subsequent lab inspection.

Mr. Roberts indicated that when he started in September 2008, he was instructed by Dr. Harran to obtain a lab coat from the Chemistry Department stockroom, located in Young Hall. Mr. Roberts stated that he elected to use the lab coat that he already had and did not obtain one from the University. Mr. Roberts indicated that he was provided with safety goggles and gloves.

Q: Did Dr. Harran give you any specific instructions relative to the use of the lab coat?

A: Um, no. Not that I remember.

Q: Were there occasions when you were working in the lab when you didn't wear a lab coat?

A: Yes.

Q: How often did you not wear a lab coat?

A: Um, pretty much every day I didn't wear a lab coat.

Q: Was that a common practice within the lab that you were working in.

A: Ah, yes.

Q: People weren't wearing lab coats?

A: Yes.

Q: And did Dr. Harran ever see you guys not wearing lab coats?

A: Yes.

Q: Did he ever say anything about it?

A: No.

**[Tab 9, at 0:12:35:00-0:13:22:00].**

Mr. Roberts stated that he has never used t-Butyllithium, but recalls several people in Dr. Harran's lab were using the reagent. Mr. Roberts observed Brian Blank use t-Butyllithium on two or three occasions. According to Mr. Roberts, Paul Hurley was instructing Mr. Blank on the proper techniques for handling t-Butyllithium. While Mr. Roberts observed the set-up of the reaction vessels, he [Roberts] did not observe Mr. Blank use the syringe withdrawal method to transfer t-Butyllithium. Mr. Roberts recalls that Mr. Blank conducted the experiment, but does not recall whether he [Blank] was provided with any instructions by Dr. Hurley. Mr. Roberts believed Victim Sangji performed a similar reaction.

Mr. Roberts stated that the typical amount of reagent transfer in Dr. Harran's lab is less than 10ml. Mr. Roberts believed a large scale transfer would involve an amount over 50ml. Mr. Roberts did not use any pyrophoric reagents. Mr. Roberts did not received any formal training while at UCLA on the syringe withdrawal method. However, Mr. Roberts stated that he was familiar with the general technique. Mr. Roberts indicated he [Roberts] would normally consult with Paul Hurley when uncertain about a particular technique.

Mr. Roberts stated that when making a reagent transfer of 30ml or more, it was fairly common for personnel to hold the reagent bottle while making a withdrawal.

Mr. Roberts first started working with Victim Sangji in October 2008.

Mr. Roberts recalled observing Victim Sangji doing a reaction involving t-Butyllithium, approximately 2-3 weeks after she first started working in the lab. Mr. Roberts did not recall observing the transfer of the reagent. Mr. Roberts stated that Paul Hurley had provided instruction to Victim Sangji relative to the reaction.

Q: Do you have any knowledge or recollection of the method that they used to do the reagent transfer- and that would be the t-Butyllithium?

A: I don't remember.

Q: Do you recall any other aspects of what Sheri was instructed to do by Mr. Hurley?

A: Ah, no.

Mr. Roberts indicated that he routinely worked in the same lab as Victim Sangji.

Q: Now with respect to her habit about wearing a lab coat, did she often not wear a lab coat?

A: Yes.

Q: Ok. What about Hui Ding, did he often not wear a lab coat?

A: Ah, he wore a lab coat everyday.

Q: Ok. What about Wei Chen.

A: Ah, not regularly.

Q: And Hai Liu?

A: I don't remember.

Q: What about Ilya?

A: No.

Q: Were safety glasses normally worn?

A: Yeah. Always.

Q: And gloves?

A: Yes.

Q: What type of gloves did you guys wear?

A: Nitrile gloves.

**[Tab 9, at 0:44:30:00-0:45:18:00].**

Mr. Roberts stated that Dr. Harran would customarily visit the lab every morning and 2-3 times throughout the day. Dr. Harran would typically discuss research projects while in the lab and would review the work documented in the lab notebooks.

Mr. Roberts confirmed he was present during Michael Wheatley's lab safety inspection. Mr. Roberts was notified of the inspection several weeks in advance. Mr. Roberts recalled there was an issue with excess solvent storage. Further, Mr. Roberts stated that Michael Wheatley noted an issue with personal protective equipment on the inspection sheet. However, Mr. Roberts characterized the notation as a general advisory to lab personnel that gloves and eye protection was required. Mr. Roberts stated he was advised at that time, that use of a lab coat was at the discretion of the researcher.

Mr. Roberts obtained a copy of the UCLA Lab Safety Manual, but he could not recall seeing the manual prior to the incident. Mr. Roberts identified a portion of the manual (**BOI Investigation Binder No. 4, UCLA Bates No. 000676-000687**) as material that may have been provided separately.

Mr. Roberts stated that most personnel were present in the lab during the inspection, with the exception of Hui Ding. Mr. Roberts could not recall if Victim Sangji was working at the time of the inspection. Mr. Roberts believed the inspection was conducted at 1000 or 1100 hours.

Mr. Roberts stated that most personnel did not use a time card, but believed that Victim Sangji did. Mr. Roberts indicated that a researcher's lab notebook entries were usually the only way to verify if someone was in the lab.

Mr. Roberts received a copy of the Michael Wheatley's inspection report via e-mail. Mr. Roberts discussed the findings of the report with Dr. Harran and stated that most items noted on the report were corrected by himself [Roberts] and Paul Hurley.

Mr. Roberts was on winter break at the time of the fatal incident. Mr. Roberts had left the University on December 21, 2008 and returned on January 5 or 6, 2009. Mr. Roberts stated that only Hui Ding, Wei Feng Chen, and Victim Sangji were working over the winter break. Mr. Roberts first learned of the incident after receiving an e-mail from Dr. Harran. Mr. Roberts spoke with Hui Ding approximately 2 days after being advised of the incident. Mr. Roberts did not recall discussing the incident with anyone else. Mr. Roberts stated that Victim Sangji's fume hood had been cleaned up by the time he [Roberts] returned.

Mr. Roberts stated that he had been formally interviewed by Dr. Harran's attorney. Mr. Roberts indicated he advised the attorney that the syringe withdrawal method was appropriate for smaller volumes and that the cannula technique was preferable for larger volumes. Mr. Roberts also advised counsel that a lab coat was not required. Mr. Roberts stated the interview occurred in Dr. Harran's lab, with Dr. Harran and Hui Ding present. Mr. Roberts indicated the interview lasted approximately 10-15 minutes.

Mr. Roberts indicated that Paul Hurley left the lab group in November 2008, after finishing two years of research as a Postdoctoral Fellow. Mr. Roberts indicated that Paul Hurley Took a position at Gilead in Alberta, Canada.

Mr. Roberts was shown a copy of the floor plan of the 4<sup>th</sup> floor of the Molecular Sciences Building. The document was identified and marked as Appendix A to the interview (a copy of Appendix A is incorporated herein under **Tab 33**). Mr. Roberts marked the floor plan to indicate the assigned fume hoods for each person assigned to the labs.

### **BOI Interview of Hui Ding, Post Doctoral Researcher (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Dr. Ding's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On August 20, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with Hui Ding, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA.

Dr. Ding has been employed by UCLA as a Post Doctoral Researcher since September 2008. Dr. Ding has worked under Dr. Harran since arriving at UCLA. Dr. Ding's area of research is organic synthesis. Dr. Ding earned undergraduate and graduate degrees in Chemistry while in China. Dr. Ding has a PhD in Chemistry from the University of Vermont. Prior to joining Dr. Harran's lab group, Dr. Ding completed Post Doctoral Research at Johns Hopkins University.

Dr. Ding indicated that at the time of the fatal incident, Dr. Harran's group occupied space in Molecular Sciences Building labs 4221, 4221(a) and 4211. Dr. Ding was shown a diagram depicting the Molecular Sciences 4<sup>th</sup> floor. The document was marked as Appendix A. Mr. Ding marked the Appendix indicating the location of Victim Sangji's fume hood and Mr. Ding's fume hood, within lab 4211.

Dr. Ding stated that the lab group consisted of six additional members: (1) Brian Blank, Graduate Student Researcher; (2) Andrew Roberts, Graduate Student Researcher; (3) Amy Nielsen, Graduate Student Researcher; (4) Paul Hurley, Post Doctoral Researcher; (5) Wei Feng Chen, Post Doctoral Researcher; and (6) Victim Sangji.

Dr. Ding indicated that his research was directed, in general terms, by Dr. Harran. Dr. Ding stated that Post Doctoral Researchers were expected to know how to conduct various reactions. As such, direction of Post Doctoral Researchers by Dr. Harran was somewhat limited.

Dr. Ding indicated that while he did work in the same lab as Victim Sangji, he did not work on any research with her. Dr. Ding stated that Paul Hurley would occasionally work with Victim Sangji, as they were working on related research.

Dr. Ding did not utilize t-Butyllithium while working in Dr. Harran's lab. Dr. Ding indicated that he was familiar with the reagent and had used it several times while at Johns Hopkins. Dr. Ding did not use any other liquid pyrophorics in his research at UCLA. Dr. Ding stated that he has used both plastic and glass syringes to transfer t-Butyllithium. Dr. Ding could not recall where he received training to handle the reagent. Dr. Ding stated that when transferring t-Butyllithium via syringe, it should be twice the size of the intended transfer.

Dr. Ding stated that the most standard procedure for handling t-Butyllithium was contained in the Aldrich AL-134 Technical Bulletin. Dr. Ding was shown a copy of the AL-134 Bulletin. Dr. Ding identified the document. The document was marked as Appendix A and is incorporated herein under **Tab 27**. Dr. Ding indicated that he would generally follow the procedures outlined in the AL-134 bulletin, but would not pressurize the reagent bottle as recommended by Aldrich, as he [Ding] believed that over pressurization of the bottle could be dangerous. However, Dr. Ding confirmed that he has completed the syringe withdrawal method exactly as specified in the AL-134 bulletin when using a glass syringe.

Dr. Ding believed the use of a plastic syringe was appropriate, so long as the syringe was dry. Dr. Ding stated that the use of plastic syringes to transfer t-Butyllithium was common in other labs where he has worked. Dr. Ding stated that when using a plastic syringe to transfer t-Butyllithium it

is common for the barrel of the syringe to swell, causing the plunger to stick and become difficult to operate.

Dr. Ding did not receive any lab training when he started with UCLA. Dr. Ding also stated that no one at UCLA inquired as to whether Dr. Ding had ever received any safety training. Dr. Ding further indicated that he had received lab safety training while at Johns Hopkins and in China.

Upon arrival at UCLA, Dr. Ding obtained a lab coat from the Chemistry Department stockroom. Dr. Ding did so at the instruction of Dr. Harran. Dr. Ding stated that he was never advised that use of a lab coat was required. Mr. Ding indicated that it was his practice to always wear one. Dr. Ding also indicated that Dr. Wei Fang Chen would typically wear a lab coat. However, Dr. Ding confirmed that other lab personnel did not always wear lab coats.

Q: Were you ever advised that it was required that you wore a lab coat?

A: Here?

Q: AT UCLA. This is before the incident. Did anybody say that you had to wear a lab coat?

A: No, No one told me you had to, but I wear it anyway, all the time.

Q: That's your practice, correct?

A: Yeah, that's my practice.

Q: Now other people in your lab group, before Sheri's incident, did they all wear lab coats?

A: Ah, Dr. Chen, most of the time or all the time, ah other people, not every, not every day. Especially for this people who are not doing a lab experiment.

Q: So there was no policy that required it in the lab at that time, is that correct?

A: Yeah, it's no enforcement of policy-that.

**[Tab 9 at, 0:47:00:00-0:48:02:00].**

Dr. Ding indicated that he first began work at UCLA several weeks prior to Victim Sangji. Dr. Ding indicated that Victim Sangji had a lab coat and that he observed her wearing it occasionally.

Q: Would it be accurate to characterize her wearing of a lab coat as infrequent?

A: That I don't know. Although we are in the same lab, she's dealing with the instruments a lot in actually the small room, so I cannot say.

Q: But it wasn't uncommon for her not to be wearing a lab coat?

A: That's right.

Q: And it wasn't uncommon for other people, besides Wei Feng, not to be wearing a lab coat, is that also correct?

A: Yes.

**[Tab 9 at, 0:49:07:00-0:49:58:00].**

Q: Prior to the incident happening, did you ever observe Sheri doing her work?

A: In the hood?

Q: Yeah.

A: Yeah.

Q: Did you ever observe her working in the hood without a lab coat on?

A: Yes.

**[Tab 9, at 0:50:35:00-0:51:00:00].**

Dr. Ding could not recall observing Victim Sangji using t-Butyllithium directly. Dr. Ding has observed Paul Hurley and Victim Sangji setting up a reaction in Victim Sangji's fume hood that involved t-Butyllithium. Dr. Ding recalls making the observation sometime prior to November 2008. Dr. Ding did not observe victim Sangji transfer the reagent. Dr. Ding observed a bottle of T-Butyllithium and a cannula needle in the fume hood and assumed that the transfer would have been made via cannulation. Dr. Ding could not remember whether the bakelite cap had been removed from the reagent bottle. Dr. Ding stated that he was not paying particular attention to Paul Hurley or Victim Sangji. Dr. Ding indicated he made his observations as he was walking toward the instrument room to obtain a chemical.

Q: Is there any particular reason why that event involving the t-Butyllithium on that day sticks out in your mind?

A: Well, ah, I noticed they were doing some other reactions, ah, operations let's say. It's condensing Vinyl Bromide. So I was just curious, so what they were doing, why you need to hold a lot of stuff in the hood? What

kind of reaction you're doing? I was like passing by because the hood is at the side of the door. Just curious.

Q: But is it because it's something unusual and out of the ordinary that sparked your interest.

A: Yes. Sparked my interest is, ah, Sheri is undergraduate, is a research associate, why it looks like a complicated reaction she's doing. Just that.

**[Tab 9, at 0:54:30:00-0:55:42:00]**

Q: Are you familiar with that, that experiment- have you done the same thing before?

A: No. Not that particular reaction.

Q: But you're familiar with the science behind it, correct?

A: Yes.

Q: And would you consider that particular operation very complex?

A: Ah, not particularly complex.

Q: It's complicated, correct?

A: It's complicated, involving several transfers.

Q: And based on your level of expertise, you consider it somewhat complicated-

A: Yes.

Q: Even though you understand the science behind it?

A: Yes.

Q: As an undergraduate would you believe that would be a fairly complicated procedure?

A: Ah, yes, it's very complicated. But if you follow the instructions, the procedure is not particularly difficult, it's complicated. In my opinion it is not difficult.

**[Tab 9 at, 0:56:13:00-0:57:30:00].**

Dr. Ding was working in his office within lab 4211 (adjacent to the lab 4221) on the date of the fatal incident. Dr. Ding stated that he heard a scream at approximately 1400 hours. Dr. Ding went to lab 4221 and observed Victim Sangji on fire. Dr. Ding stated that Wei Feng Chen was attempting to put out the fire by wrapping his [Chen's] lab coats around Victim Sangji. Dr. Ding then went to Victim Sangji's fume hood and observed a reagent bottle lying on its side and on fire. Dr. Ding did not read the label of the reagent bottle, but indicated it was a 100ml brownish colored bottle. Dr. Ding believed the fire was manageable. Dr. Ding then ran back to the phone located in 4211 and called 911.

When Dr. Ding returned to lab 4221, he observed Victim Sangji sitting on the floor asking for water to be poured onto her. Dr. Ding subsequently directed responding personnel to the lab. Once the Fire Department arrived, Dr. Ding then went to lab 4224. Dr. Ding could not recall if anyone else accompanied him to lab 4224.

Dr. Ding returned to lab 4221 once the Fire Department left. Dr. Ding confirmed that he removed 5-6 solvent drums from the incident scene, at the direction of Dr. Harran. Dr. Ding indicated that he had been advised by the Fire Marshall not to re-enter the lab, but did so based upon Dr. Harran's instructions. Dr. Ding stated that he did not remove any other items from the lab, nor did he perform any other clean up of the incident scene. Dr. Ding indicated that he made entry into the lab before the locks were changed, using his key.

Dr. Ding was shown a photograph depicting Victim Sangji's fume hood. The photograph was marked as Appendix C and is incorporated herein under **Tab 27**. Dr. Ding indicated that the hood was cluttered, but was consistent with the condition of other hoods within the lab.

### **BOI Interview of Wei Feng Chen, Post Doctoral Researcher (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Dr. Chen's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On August 20, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with Wei Feng Chen, at the Law Offices of Manatt, Phelps and Phillips. Present during the interview was Craig Moyer, Counsel for UCLA and Yi-Chin Ho, attorney with Manatt, Phelps and Phillips. Also present was Lee Yu, Union representative with the International Union, United Automobile, Aerospace & Agricultural Implement Workers of America-UAW.

Dr. Chen has been employed by UCLA as a Post Doctoral Researcher since October 2008. Dr. Chen has worked under Dr. Harran since arriving at UCLA. Dr. Chen's area of research is organic synthesis. Dr. Chen earned an undergraduate degree and PhD in Chemistry while in China. Prior to joining UCLA, Dr. Chen worked at the Shanghi Organic Research Institute.

Dr. Chen indicated that his research at UCLA is conducted based upon general direction from Dr. Harran. Dr. Chen stated that Dr. Harran would generally discuss his [Chen's] research on a daily basis. Dr. Chen worked independently as part of a seven member lab group. Dr. Chen did not

work with others in the lab due to limited spoken English language skills. Dr. Chen indicated that he can read English and has some writing ability.

Dr. Chen did not receive any lab safety training upon arrival at UCLA. Dr. Chen stated that he received safety glasses and gloves. **Dr. Chen stated initially he did not have a lab coat, but eventually found one in a drawer within the lab and began using it. Dr. Chen believes that he found the lab coat at the end of October or beginning of November 2008.**

Dr. Chen was shown a diagram depicting the Molecular Sciences 4<sup>th</sup> floor. The document was identified and was marked as Appendix A. Dr. Chen marked the Appendix with a number 1 designating his fume hood. Dr. Chen then marked the location of the assigned fume hood for each person assigned to lab 4221 as follows: (2) Victim Sangji; (3) Chris, unknown last name (undergraduate); (4) Hui Ding; (5) Andrew, last name unknown; (6) unknown. Dr. Chen stated that Paul [Hurley] and Amy Nielsen had fume hoods in the adjacent lab in 4211.

Dr. Chen normally began work at 0900 hours and stopped work at approximately 2100 hours. Dr. Harran would generally visit the lab each day. Dr. Chen was unaware if any one was in charge of the lab when Dr. Harran was out of town. Dr. Chen stated that had never used t-Butyllithium and was unfamiliar with the reagent prior to the fatal incident. Dr. Chen indicated that he has utilized n-Butyllithium while at UCLA, but confirmed that it is not pyrophoric.

Dr. Chen stated that he was working in lab 4221 on the date of the fatal incident. Dr. Chen recalls first seeing Victim Sangji in the lab after he returned from lunch. Dr. Chen did not believe anyone else was working in the lab, although Dr. Hui Ding may have been present. Dr. Chen indicated he was working in the lab, when he heard Victim Sangji scream. Dr. Chen observed Victim Sangji on fire. Dr. Chen removed his lab coat and wrapped it around Victim Sangji, in an effort to extinguish the flames. Dr. Chen abandoned the lab coat after the bottom of the lab coat caught on fire. Dr. Chen then filled a plastic container with water from a nearby sink and poured it onto Victim Sangji. Dr. Chen then asked Victim Sangji to sit down. Dr. Chen continued to pour water onto Victim Sangji. Dr. Chen confirmed that Victim Sangji was not wearing a lab coat.

Q: At the time this incident occurred was Sheri wearing a lab coat?

A: At the time she was on fire, uh, she didn't wear a lab coat. Usually, she doesn't wear lab coat. I don't remember whether she wore it or not when she was doing an experiment.

Q: Was it her practice though to not wear a lab coat?

A: That's correct.

Q: Was it also customary for other people in the lab to not wear a lab coats?

A: Under usual circumstances, they don't wear. Hui Ding, he wears that.

Q: What about you, do you always wear a lab coat?

A: Yes. I did. After I found that lab coat I always wear it.

**[Tab 9, at 1:58:00:00-1:59:16:00]**

Dr. Chen stated that after the fire was extinguished, Dr. Harran arrived in the lab. Once the Fire Department arrived, Dr. Chen was directed by either Dr. Harran or the Fire Department to leave the lab. Dr. Chen returned to the incident scene, along with Hui Ding, once the Fire Department had left. According to Dr. Chen, he had been directed by Dr. Harran to remove solvent containers from the lab. Dr. Chen removed 4-5 containers and placed them in lab 4211. Dr. Chen stated he also removed some supplies that were needed for his experiments. Dr. Chen then cleaned up his fume hood and relocated his items to lab 4211. Dr. Chen maintains that he did not clean up other areas in the lab and did not clean up Victim Sangji's fume hood. Dr. Chen indicated that he was never advised not to re-enter the lab. Dr. Chen stated that Dr. Harran was not present when he [Chen] re-entered the lab.

#### **BOI Interview of Paul Hurley, Post Doctoral Researcher (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Dr. Hurley's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On November 4, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with Paul Hurley. The interview was conducted at 10205 100 Avenue, Edmonton, Alberta, Canada. Present during the interview was Craig Moyer, Counsel for UCLA.

Dr. Hurley is currently employed as a Research Scientist at Gilead Pharmaceuticals. Prior to his employment with Gilead, Dr. Hurley was a Postdoctoral Fellow working under Dr. Patrick Harran. Dr. Hurley first began working with Dr. Harran at the University of Texas Southwestern Medical Center (UTSW) in 2006. In July 2008, Dr. Hurley accompanied Dr. Harran to UCLA. Dr. Hurley left UCLA in November 2008. Dr. Hurley's principal area of research as a Post Doctoral Fellow was Organic Synthesis. Dr. Hurley earned his PhD. degree in Chemistry from the University of British Columbia.

Dr. Hurley indicated that his research at UTSW was conducted based upon general direction from Dr. Harran. Dr. Hurley stated that Dr. Harran would generally discuss his [Hurley's] research several times a day at UTSW. According to Dr. Hurley, Dr. Harran operated one lab at UTSW with a staff of 6-9 researchers.

Dr. Hurley did not recall using t-Butyllithium at UTSW, but did have experience using the reagent during his doctoral study at the University of British Columbia. Dr. Hurley could not recall whether SOP's for handling air-sensitive reagents were in place in Dr. Harran's lab at UTSW, but since he [Hurley] had experience with handling the reagents he did not feel the need to review any procedures if they did exist.

Q: Now with respect to your familiarity with, um, T-Butyllithium, you stated that it was at the University of British Columbia that-that's where you had your exposure to the reagent correct?

A: Yes.

Q: What SOP's did you follow when handling that reagent at that point?

A: I guess I would say that there's probably no SOP's that I followed there either. I mean a lot of the reagents we use its kind of like, there's some sort of continuous cycle of people moving in and out of the research labs and its sort of one of these things that get passed down, from one to the next by word of mouth um, and you know some people will give you demonstrations, say, ah, this is how you should do it, you know, etc., so I don't say that I ever saw an SOP at University of British Columbia.

Q: But your experience was based on what somebody else had instructed you, in terms of how to handle it?

A: Yeah, there was no, yeah, there was no SOP it was just sort of passed on knowledge, either through my observations, or someone showing me or telling me, ah, how it should be done.

**[Tab 9, at 0:13:00:00-0:14:15:00].**

Dr. Hurley indicated that he transferred t-Butyllithium in quantities between 1ml, up to 50-60 ml. Dr. Hurley estimated that the largest transfer could have been between 50-100ml. Dr. Hurley initially stated that he handled t-Butyllithium 10-12 times while at the University of British Columbia, but then indicated the estimate could be more, however, Dr. Hurley could not provide any amount beyond the 10-12 times stated. Dr. Hurley also indicated that he handled n-Butyllithium [less reactive than t-Butyllithium] approximately 100-200 times during his doctoral research. Dr. Hurley stated that most of the transfers were made when completing initial test reactions and were 1ml or less in size. Dr. Hurley estimated that he scaled-up reagent transfers above 10ml only 5-10 times. Dr. Hurley stated that all reagent transfers he made were done using a plastic syringe.

Q: If you were gonna do a 1ml transfer, what size syringe would you use?

A: A 1ml syringe.

Q: You'd fill it all the way up?

A: Ok.

Q: What about 10ml?

A: I'd use a 10ml syringe.

Q: Now, if your going above 10, you'd just find the size closest to the amount your gonna withdrawal?

A: More or less. For example, if I need 15 I would go to a 20ml syringe, I mean if it was somewhere in between I would go to the next size up.

Q: And if you're gonna withdrawal 50, what size syringe would you use?

A: 50.

Q: 50?

A: I think at UT we had 60's, so I might have used a 60 there.

**[Tab 9, at 0:21:35:00-0:22:50:00].**

Dr. Hurley indicated that approximately 90% of the reagents he used were manufactured by Aldrich and were typically 100ml bottles. Dr. Hurley then described the process he typically followed in making a reagent transfer:

Q: And in making the transfer, if your gonna use-lets say you are going to take 10ml out of a 100ml bottle- exactly how would you do it?

A: So I'd take my bottle of Butyllithium. I would, you know, I'd take the cap off the cap and I would put a nitrogen line in, you know, so that there's, ah, some inert atmosphere in there. Ah, then I would get my syringe ready with the needle on the tip, I would insert it into the bottle, into the headspace, withdrawal, ah, some nitrogen and then take it out and push out the nitrogen, and I'd do that like three times, then I'm ready. Then I would pull up the liquid whatever-how much- you know, the 10ml that I needed. Ah, you know, make sure I have the right volume in there. I would take it out and then I would put it into the - through a septum- into the flask where I was gonna do my reaction.

Q: Would you have to clamp the bottle or is that not necessary?

A: Is it a good idea to clamp the bottle? Sure. Did I typically clamp the bottle? No.

Q: I'm just trying to get a sense of whether it's something that's standard- whether it's a good idea or not is not really the question?

A: Standard. Ah, I would say most people that, obviously myself, and others that I have seen more often than not did not clamp the bottle.

Q: Just grab it?

A: Yes.

Q: You hold the bottle with one hand and withdrawal with the other?

A: Typically, I mean if your syringe needle can go down into the solution and your bottle is stable enough I guess you could sort of, you know, sort of grab the top of the bottle with one hand and you could withdrawal with the other hand. Yeah, I guess some form of that.

Q: Do you physically pull on the plunger?

A: Yeah.

**[Tab 9, at 0:26:11:00-0:28:10:06].**

Dr. Hurley confirmed that he occasionally had encountered difficulty in pulling the syringe plunger when transferring t-Butyllithium, but he never considered the actual cause. Dr. Hurley estimated the condition occurred in 1 out of every 20 transfers.

Q: But in the cases where you're starting a withdrawal and there's, there's some difficulty pulling the plunger, what do you do to correct the problem?

A: What would I do, I'd probably pull down a little harder. I mean I try to be careful or else- I don't want to pop the plunger off, but you know, usually, I just try and pull a little harder, while trying to be careful not to do that I guess.

**[Tab 9 at, 0:31:18:00-0:31:49:00].**

Dr. Hurley stated that he would wear goggles, gloves and a lab coat when transferring t-Butyllithium. Dr. Hurley was then shown a copy of the Aldrich Technical Bulletin AL-134. The document was marked as Appendix A and is attached herein under **Tab 31**.

Q: In terms of reading that, have you ever read it?

A: Um. Honestly. Possibly not. I mean way back when I may have glanced at it, when I was younger, which was years ago when I started out, but I may not have read it fully at that point and I mean I don't think I really ever read it, uh, exhaustively. Again its one of those things that was passed down and once I learned it and used it so many times, I never glanced at that, possibly, I mean you get them in the bottles and I pull it out and put it to the side, you know.

Q: So you were confident in the techniques that you were employing at the time?

A: Yes.

Q: That's why you didn't read it?

A: Yes.

Q: Is it accurate to say that you didn't follow this technical bulletin in terms-as your SOP for reagent withdrawal?

A: Yeah, that would be accurate. I never really had an SOP, so I guess that would have to be true.

**[Tab 9, at 0:33:40:00-0:34:49:00].**

Dr. Hurley stated that he believed that he underwent safety training at UTSW. According to Dr. Hurley, UTSW provided safety glasses and two lab coats. There was no specific policy at UTSW requiring the use of a lab coat.

Q: Was there any rule at UTSW that you were required to wear a lab coat?

A: Possibly. Ah, maybe I was told, I could have been told that we were supposed to, but its one of these, honestly, its rightly or wrongly, its one of those things, where I have been in several academic labs and some people do, some people don't, um, and I think that was the case there as well. I certainly saw some people that did and some that didn't and in different situations, so it was- so if there was a rule I don't know how strictly enforced it was- but as I have said that's how my experience has been pretty much everywhere I've been, apart from my current job actually.

Q: While you were at UTSW what was your habit, did you wear one or did you not-was it depending on the day?

A: I think it depended on what I was doing that day, you know, I think typically if I was using something that I considered to be kind of more hazardous or more dangerous or whatever, I would wear a lab coat- and that decision was somewhat arbitrary, uh, and there'd be times when I wouldn't for sure.

**[Tab 9, at 0:40:37:00-0:42:01:03].**

Dr. Hurley stated that upon his arrival at UCLA, Dr. Harran's lab occupied temporary labs on the 4<sup>th</sup> floor. Dr. Hurley worked primarily in lab 4211. Dr. Hurley's research did not involve the use

of pyrophorics. Dr. Hurley believed that graduate student Amy Nielsen was the first to utilize t-Butyllithium within Dr. Harran's lab at UCLA. Dr. Hurley stated that t-Butyllithium used to overcome a problem with a particular reaction.

Q: Was there some point where Dr. Harran had a discussion with you about, ah, establishing a protocol to use these reagents and fix the problem that Amy and Sheri was having?

A: Not specifically. I think we had a conversation where its like, you know, if they need some help can you sort of help guide them a little bit in terms of questions about reactions they're doing or if they're uncertain, can you, you know it just was sort of, I think more of a generalized statement saying can you help them, you know, when they have trouble or if they have a procedure they don't know, or something like that.

Q: Did you ever have any specific discussions with Dr. Harran about using T-Butyllithium?

A: Possibly. But I don't recall specifically. But it's possible.

Q: Now did you supervise anyone in the lab when you were doing your research.

A: Did I directly supervise them-

Q: Yeah.

A: No., but I mean, for the time that I'm there more than say Professor Harran as I said I was at least the senior person coming in, you know, I was a post-doc with the experience, so I guess I was the default guy to go to first if something came up I guess.

Q: Did you ever develop any specific written protocol for handling T-Butyllithium in Dr. Harran's lab?

A: No.

**[Tab 9, at 1:14:35:00-1:16:40:00].**

Dr. Hurley was shown a copy of an e-mail from Victim Sangji to Dr. Hurley which requested a copy of his protocol for the Vinylithium reaction. The e-mail was marked as Appendix B through C and is incorporated herein under **Tab 31**.

Q: Do you recall what your response was to the e-mail?

A: I think what I did in this case was, I mean, she was in the lab next door right, so she sent me the e-mail. I'm pretty sure I just walked over and I may have looked something up on the internet that just said, you know like an experimental form somewhere where they used something like that and I just gave her the experimental in person.

Q: At the time you received this e-mail do you recall what instructions you gave to Sheri with respect to the process or protocol she needed to follow?

A: I honestly don't recall specifically, um, as I said I think I printed off an experimental where it describes the use of, I'm not sure if it was making vinyl lithium, it may have been another, you know, an analogous type lithium reagent, but where the procedure would have been the same. That sounds like something I would have done. I don't remember specifically what I gave to her, or what I said to her and I'm sure I spoke to her but I just don't know-I can't think of any specifics or when that was or anything like that.

Q: Do you know if, ah, you actually gave her anything?

A: Not 100 percent.

Q: I mean in writing anyway?

A: Not 10 percent. It seems reasonable that's something I would do but not for a fact.

Q: Do you recall ever monitoring her activities with respect to her attempt to generate vinyl lithium?

A: Specifically. No. Ah, I probably did. For me its like one of those reactions I have done so many times in my career that I just can't remember telling Sheri anything. As I say, I probably did and I have no reason to believe I wouldn't have helped her, but I don't remember the time or the times that she did it.

Q: Ok. Did you recall ever instructing her on how to transfer t-Butyllithium from the reagent bottle?

A: I don't recall. Again, I probably did help her, but I don't recall.

**[Tab 9, at 1:16:40:00-1:24:24:00].**

Dr. Hurley indicated that he went through safety training after arriving at UCLA. Dr. Hurley believed the training was administered by Michael Wheatley.

Dr. Hurley took all of his PPE from UTSW and did not obtain anything from UCLA. Dr. Hurley believed that lab personnel had lab coats, or had access to lab coats. Dr. Hurley confirmed that he observed other researchers not wearing lab coats. Dr. Hurley had observed Victim Sangji not wearing a lab coat. Dr. Hurley indicated there was no policy requiring the use of a lab coat. Dr. Hurley did not recall ever observing Dr. Harran instruct lab personnel to wear a lab coat.

Dr. Hurley was shown a copy of the Aldrich Technical Bulletin AL-164, Handling Pyrophorics. Dr. Hurley confirmed that he did not follow the document as part of any SOP while at UCLA.

Dr. Hurley stated that plastic syringes were commonly used to transfer reagents.

Q: Had you ever had an occasion when you had made multiple t-Butyllithium withdrawals with the same syringe?

A: Yeah. I've done that in my own research at UBC, University of British Columbia.

Q: If you had to do it, if you had to do it with, make multiple withdrawals would you use the same polypropylene syringe.

A: Would I use the same syringe, yes.

Q: And has that been your experience, have you observed other people do it the same way.

A: Yes.

Q: So it would be common to use the same syringe more than once.

A: Yeah, I mean you're sort of in the same flow of adding that reagent to that mixture, sure, absolutely.

**[Tab 9, at 1:30:52:00-1:31:46:00].**

Q: Do you recall ever discussing the hazards of t-Butyllithium with Sheri.

A: No I do not.

Q: Do you know if she was aware of the hazards associated with T-Butyllithium.

A: I don't know.

**[Tab 9, at 1:35:33:00].**

Q: Did you ever have any mishaps making a reagent transfer with a polypropylene syringe?

A: Sure.

Q: And what kind of mishaps?

A: Oh, I've popped the plunger off the top of the syringe before.

Q: How many times?

A: Oh, a couple. Probably a handful lets say. Less than a handful. Not that many considering how many I've done.

Q: Do you know what caused it to pop out?

A: I would say in some instances I pulled too hard and I was close to the end and, I sort or ooped and went a little bit further that I should of.

Q: And what happened when that occurred?

A: Um, I've spilled some reagent, but nothing of any consequence.

Q: I mean did you do it with any pyrophoric reagent?

A: I can't say for sure. It's possible. I mean I think if I did it with a pyrophoric it would have caught on fire, would have been an incident, so I guess the answer is most likely no.

**[Tab 9, at 2:04:54-2:06:07].**

Dr. Hurley first learned of the fatal incident after receiving an e-mail from Amy Nielsen. Dr. Hurley stated that he did not have any conversations with Dr. Harran.

**BOI Interview of Dr. Patrick Harran, Professor, D.J. Cram Chair in Chemistry, UCLA (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Dr. Harran's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On December 1, 2009, BOI Investigator Baudendistel conducted a recorded interview, under oath, with Dr. Patrick Harran. Present during the interview was counsel for Dr. Harran, Peter H. Weiner, with the Law Offices of Paul Hastings and Craig Moyer, counsel for UCLA, with the Law Offices of Manatt, Phelps and Phillips.

Dr. Harran has been a tenured Professor of Chemistry with UCLA, since July 1, 2008. Dr. Harran holds the D.J. Cram Chair in Chemistry. Prior to his employment with UCLA, Dr. Haran was a professor of Chemistry at University of Texas Southwestern Medical Center. Dr. Harran first began working at the University of Texas Southwestern Medical Center (UTSW) in 1997.

Dr. Harran's principal area of research at UTSW was Organic Chemistry and Pharmacology research. Dr. Harran supervised a staff of 5-12 researchers.

Q: At UTSW who was responsible for lab safety?

A: I think the most generalized safety issues would be EH&S. Protocols that would be specific to any given laboratory would be the PI's responsibility.

Q: What would be the PI'S responsibility?

A: Ah, the PI's responsibility would be training of personnel in procedures that were, um, within the realm of their research- if there was any hazards associated with them, the PI would be involved in training.

Q: And what training would the EH&S administer?

A: At UTSW all incoming employees proceeded through an orientation, um and then there was a video presentation that was very generalized. Since it was a medical center and prior to my arrival the focus was largely biomedical research. It was mainly on things like radiation safety, biohazards, things like that.

**[Tab 9, at 0:4:42:00**

Dr. Harran stated that UTSW had operating protocols, but that there was no laboratory operating manual per se.

Q: Now with respect to the training of employees at UTSW that were under your supervision, did you provide training to these individuals?

A: Yes. I trained most of my students, uh myself, in the laboratory.

Q: And what type of training did these individuals receive?

A: Well the training I would provide would be related to, ah, the techniques of organic synthesis and handling of organic chemicals.

Q: What was the average skill level of a person that you would supervise?

A: Well if they came to my laboratory as what we call a postdoctoral fellow, it would be extensive. They would have already completed their doctorate. Um, my lab was mainly research associates and postdoctoral fellows and the graduate students of course would be considerably less experienced and they would spend their time with senior members of the lab and myself being trained to a level where they were able to work safely and independently.

Q: Now with respect to research associates, what was the general educational background of an incoming research associate?

A: Ah, a research associate would have, ah, either a Bachelors or Masters degree in Chemistry and I tried to select associates that had prior laboratory experience. They are classified staff, they have a full-time responsibility. Usually, its, ah, routine procedures in the laboratory, ah, inventory issues, things like that. So, ah, they were skilled but in some cases they would need to be trained in specific procedures.

Q: Relative to issues of laboratory safety, did you provide training to personnel that you supervised-beyond what was administered by EH&S?

A: In terms of, ah, safe handling of, um, organic chemicals, um, yes. So procedures that would be specific to our, ah, techniques, ah, yes.

Q: Now with respect to personnel protective equipment did UTSW have a policy regarding the use of that equipment?

A: Um, I don't know their specific policy. My laboratory has always had the policy of, um wearing eye protection at all times and laboratory coats when handling hazardous materials.

Q: The policy-your lab specific policy-regarding the use of personal protective equipment- was it a written policy?

A: No. It was not a formally documented policy.

Q: And what would trigger the use of a lab coat at UTSW?

A: If they were handling any corrosives, pyrophorics, carcinogens, potent carcinogens, things of that type. I've always encourage people to wear gloves and in most cases we always did everything in the hoods, so ventilated fume hoods and we wear appropriate PPE for the procedure in question.

Q: And that was a requirement in your lab or a recommendation?

A: Well, ah, a requirement would imply that there would be some way of me rigorously enforcing that there would be some punitive- that had never been my experience as a student my self or-No. So, I would bother people about it, but when I'm not in the laboratory of course, you know it's encouraged, it's always been encouraged and, um, but ah, you know some people make their own decisions when I'm not there.

**[Tab 9, at 0:8:33:00-0:15:00:00].**

Dr. Harran indicated that UTSW did not take action to enforce the use of PPE. Additionally, UTSW did not conduct routine laboratory inspections. Dr. Harran never received any lab inspection reports from UTSW EH&S.

Dr. Harran stated that he was recruited to UCLA by Ken Houk, Chair of the Chemistry Department. Dr. Harran indicated that prior to accepting the appointment at UCLA, he [Harran] had discussed his space requirements and had been provided laboratory space on the 5<sup>th</sup> floor of the Molecular Science Building. According to Dr. Harran, it was agreed that his [Harran's] labs would temporarily be housed on the 4<sup>th</sup> floor, pending completion of renovations to the 5<sup>th</sup> floor space. Dr. Harran indicated the temporary space was approximately 30-40% of the size of the 5<sup>th</sup> floor facilities and did not have a stockroom for storage of chemicals. Dr. Harran stated that the UCLA Chemistry Department was aware of the storage problems associated with the 4<sup>th</sup> floor labs.

Dr. Harran brought lab equipment from UTSW, along with approximately 2,000-3,000 chemicals. Dr. Harran stated the move was handled by two outside companies which were arranged by UCLA.

Dr. Harran indicated that he did not have discussions with anyone at UCLA at the time he accepted the position, about PI responsibilities relating to employee training and/or safety. Dr. Harran first started conducting research at UCLA in late July or early August 2008. Dr. Harran obtained the keys to the lab facilities from the Chemistry Department.

Initially, the research staff consisted of Dr. Hurley. Dr. Harran indicated that the staff increased to include Amy Nielsen, Wei Feng Chen, Hui Ding, and Victim Sangji.

Q: Before Hui Ding arrived and Sheri and Wei Feng, was there any discussion by anyone at UCLA about what your responsibilities would be as a PI in terms of employee training and/or safety issues?

A: Ah, not with me explicitly. I knew that the first-year graduate students, ah, were required by EH&S to go through orientation and safety training. I knew that was routine, but in terms of me being specifically required to do certain tasks, no.

**[Tab 9, at 0:35:29:00-0:39:15:00].**

Dr. Harran believed that he received a copy of the UCLA Lab Safety Manual at some point after Michael Wheatley's lab inspection on October 30, 2008. However, Dr. Harran could not confirm whether the safety manual was received prior to the fatal incident.

Dr. Harran confirmed he was responsible for the recruitment of personnel in his lab. Dr. Harran confirmed that he interviewed prospective researchers and made all selection decisions. Dr. Harran recruited Victim Sangji through an advertisement he had placed for a Research Associate. Dr. Harran believed he first had contact with Victim Sangji in August 2008. Dr. Harran was shown an application package and recommendation letter for Victim Sangji. The documents, consisting of nine pages, were marked as Appendix D and are incorporated herein under **Tab 32**.

Dr. Harran stated that he knew Victim Sangji's undergraduate advisor at Pomona College, Dr. Daniel O'Leary, "quite well". Dr. Harran first met Dr. O'Leary during a lecture Dr. Harran gave in Boston. According to Dr. Harran, Dr. O'Leary subsequently spent several days in Harran's lab at UTSW.

Dr. Harran indicated that he discussed various aspects of his research with Victim Sangji during a 45 minute to 1 hour interview. Dr. Harran stated that Victim Sangji appeared to have more than a normal amount of lab experience for a person in her age group.

Dr. Harran indicated that Victim Sangji began working in his [Harran's] lab on October 13, 2008. Dr. Harran did not believe Victim Sangji had received any safety training from UCLA prior to beginning employment.

A: I believe my assistant was told that it was not offered for her category, per se. Um, although we were gonna follow-up on that and so she was at an off time too, so it was sort of mid quarter and um, so ah, the training that she would receive would be provided by me.

**[Tab 9, at 0:55:12:00].**

Dr. Harran stated that Victim Sangji's safety training consisted of a discussion with Sheri concerning Dr. Harran's expectations in the lab. Dr. Harran also indicated that he [Harran] observed Victim Sangji complete a reaction in his fume hood that involved the transfer of a non-pyrophoric reagent under an inert atmosphere. Dr. Harran indicated the quantity of the reagent transfer was a smaller scale reaction involving 1mg or two of reagent. Dr. Harran stated that Victim Sangji worked intermittently on the reaction over a 4-5 hour period. Dr. Harran indicated that Victim Sangji completed the protocol without difficulty. Dr. Harran stated that Victim Sangji's primary responsibility was to operate analytical instrumentation that was being installed in the lab, as opposed to conducting organic synthesis. Dr. Harran estimated that approximately 2/3 of Victim Sangji's time was spent working with the company (Agilent) setting up the instrumentation, with the remaining 1/3 spent on Organic Chemistry.

Q: Now when she first started was she assigned a lab coat?

A: Assigned?

Q: Was she provided one?

A: Yeah, I mean yes, yes.

Q: You had them in stock?

A: Ah, the stockroom has them. Yeah. We have a departmental stockroom that has lab coats.

Q: Do you know if she ever got one?

A: I personally give it to her, but I'm fairly certain that I asked her to order one and then followed up with my assistant to make sure one was ordered for her.

Q: Who is your assistant?

A: Tara Grant.

Q: Do you recall following up with Tara?

A: Not specifically, but it's my normal procedure.

Q: Well the first day that she started work, she was working in the hood correct- the first day?

A: Yeah. Yeah. The first day she was doing a little bit of both.

Q: Did she have a lab coat on at that time.

A: Yes, she did. We had extra lab coats in the lab available. She was wearing one.

**[Tab 9, at 0:57:29:00-0:58:28:00].**

Dr. Harran confirmed that he provide general direction for all research activity in his labs. Dr. Harran stated that his oversight was not on a daily basis, as he traveled often to lecture about his research. Dr. Harran indicated that most of his research staff were able to work independently.

Q: Did you deal with the Research Associates any differently than you did your post docs, in terms of directing them?

A: Well with Sheri, yeah. I mean normally I would of, normally I would of, ah, asked someone like Paul or more senior personnel to train her but, Paul was engaged at that time with other activities and, uh, and I knew for

example from this particular case, ah, I really wanted to get a feel for how experienced Sheri was and how careful and competent she would be with me around doing these experiments and so I wanted to spend some time with her. But beyond that, we talked about generally what would be done and then the two starting materials for the reaction that she did that first day, I told her that there were other people in the group that had made these, if she needed more she should ask their guidance for preparing more of those, that's kind of where we left it.

**[Tab 9, at 1:02:45:00-1:03:54:00].**

Dr. Harran stated that t-Butyllithium was first used in his lab at UCLA by either graduate student Brian Blank or Dr. Hurley. Dr. Harran stated that they were attempting to replicate a procedure developed by Dr. Harran at UTSW, but were having difficulty completing the reaction successfully. Dr. Harran believes the protocol followed by Mr. Blank or Dr. Hurley was taken from the published literature and adapted to their particular reaction.

Q: At some point was Sheri asked to complete this same procedure or reaction..?

A: No I didn't. Like I said, so there were two different procedures to make this starting material. What I told Sheri was, was that she should continue doing Methasis reactions until, you know, she was running out of those starting materials and then if she needed to remake the starting materials I said talk to other folks in the lab-they're making them and you need to get their advice if you have any questions come see me. That's, that's how I left it. I did not know this until recently but I think what she did is, um, she wrote to Paul and said that she needed some training in this particular procedure to make, um, vinyl lithium from vinyl bromide, I believe.

Q: So she was directed to make the vinyl lithium once she had ran out of the material she had produced in the first reaction?

A.: No. That we had given to her.

Q: Do you know when it was she first started to- first completed this procedure- the vinyl lithium?

A: Now I do. I mean it was just a few days later, right, I think it was at the end of the same week and, uh, so she wanted to I guess go right ahead and make her own rather than use other peoples stuff and, uh, there's an October 17<sup>th</sup> notebook entry for that exact reaction.

Q: Did you know she was completing that reaction on the 17<sup>th</sup>?

A: Ah, not on the 17<sup>th</sup> no. But, uh, we had talked about making that material that time on several occasions- well, do you have material to do this that and the other thing.

Q: Did you ever discuss the specific protocol with her that's outlined in these 10-17 notes?

A: No.

Q: Do you know if anybody in your lab did?

A: Um, I told Sheri that she would need to, before she did anything new she would have to work with someone that had done it before and so I believe that procedure on the 17<sup>th</sup> was supervised by Paul.

Q: Hurley?

A: Yes.

Q: Did you ever have any conversation with Paul Hurley about the instruction that he may have given Sheri on 10-17-2008?

A: Not specifically, although, with folks, senior members of the lab in general, I often asked them how junior people are doing, if there's any issues or things like that- in Sheri's case there was no indication she was having any trouble or was unsure in this case.

**[Tab 9, at 0:1:13:52:00-0:1:16:18].**

Dr. Harran stated that t-Butyllithium was classified as hazardous. However, Dr. Harran maintains that the reagent requires the same handling techniques as Victim Sangji employed during her first experiment in the lab (i.e. an inert atmosphere and a means to transfer the reagent to a reaction flask).

Q: Was there a standard operating procedure that your lab utilized with respect to transferring t-Butyllithium-

A: No. Not, we used the procedure outlined in the Aldrich Technical Bulletin that I provided our EH&S Fire Services and, um, we follow that in a general way. They have some very specific guidelines that are different but the essentials and the procedure are there. We don't have any special documentation or we did not, or at the time have any special documentation for just t-Butyllithium.

Q: The general guidance you followed was the Aldrich Technical Bulletin AL134 correct?

A: Yes. That's right. Because Aldrich provides Tert-Butyllithium and many other reactive reagents in a bottle they call a sure seal bottle and they have a very generalized protocol that's, that's easy to execute. Ah, it transfers from those bottles into your reaction flask in a very controlled way.

Q: Was that Technical Bulletin maintained in your lab somewhere?

A: Maintained in the lab. It comes as part of every, almost every shipment of Tert-butyllithium will be shipped with this technical bulletin, um, so ah, at the time I would imagine the answer is yes. We didn't have it placarded or posted something like that at that time. Um, but in my field we pass down knowledge open, ah, one generation to another and this is lore. It's something that you do almost on a daily basis. Um, and the procedures are very general.

Q: Did you ever specifically discuss Technical Bulletin AL 134 with Sheri?

A: No I did not.

Q: Do you know if anyone in your lab ever discussed that bulletin with her?

A: No.

Q: Did you ever discuss the, uh, transfer methods that are contained in that bulletin with Sheri?

A: The transfer methods that are in this bulletin are the same ones that she used on that first day I described. They are in essence unchanged.

Q: Did you ever discuss the nature of or the characteristics of t-Butyllithium with Sheri?

A: No. Not t-Butyllithium specifically no.

Q: Do you know if anyone in your lab ever discussed the- the characteristics of t-Butyllithium-

A: I'm, I'm, I don't know for sure, uh, cause I have not discussed this with Paul, but ah, my students have told me that Paul showed her how to do this experiment and I would certainly hope that he had described to her the characteristics of Tert-butyllithium and I think the way I've done it and again, I can't speak I was not there, but the way I've done it with new

students, you can very quickly show them the reactivity of such a chemical by exposing a little bit of it to the air and they can very quickly get a sense of how reactive it is. So if you, during your first transfer, if you say squirt a drop on to the top of the fume hood, you'll see it burn and from that time forward, um, you'll have somewhat of an appreciation for how rapidly it reacts.

Q: Do you know what instruction Paul gave to Sheri?

A: I don't know specifically. Uh, what I had done. I know Paul was a fine experimentalist and I knew that he had, um, Brian developed a procedure for making Vinylithium and, uh, so I thought that – I was comfortable with him sharing that with Sheri?

Q: Do you know if he shared anything with Sheri?

A: Personally.

Q: Yes.

A: I do not.

**[Tab 9, at 0:18:54:00-0:1:23:03].**

Dr. Harran was shown a copy of Victim Sangji's 10-17-2008 lab notes. The document was marked as Appendix J and is incorporated herein under **Tab 32**. Dr. Harran stated that Victim Sangji determined the quantities of the reaction. Dr. Harran confirmed that the scale of the reaction was reasonable.

Dr. Harran maintains that he did not instruct Victim Sangji to complete the reaction on the date of the fatal incident. Dr. Harran confirmed that he met with Victim Sangji on the morning of the fatal incident and was aware that Victim Sangji was preparing to run the reaction. Victim Sangji was preparing for the reaction during the discussions with Dr. Harran. Dr. Harran stated that most of the discussions with Victim Sangji on the morning of the fatal incident occurred in the student office. Dr. Harran was also aware that Victim Sangji planned to scale-up the reaction, but maintains that he was unaware of specifically how much. However, Dr. Harran indicated the scale of the December 29, 2008 reaction was appropriate.

Dr. Harran first became aware of the fatal incident after being notified by Hui Ding. Dr. Harran stated that he ran down to the 4<sup>th</sup> floor lab and observed Victim Sangji sitting on the floor. According to Dr. Harran, Victim Sangji was asking Wei Feng to pour water on her arms. Dr. Harran then proceeded downstairs to direct emergency personnel. Once Victim Sangji had been transported, Dr. Harran proceeded to the emergency room. Dr. Harran returned to the laboratory approximately 1 ½ - 2 hours later.

Dr. Harran indicated the responding fire personnel requested that he [Harran] neutralize Victim Sangji's reaction. Dr. Harran quenched the reaction and cleaned up the reaction flasks and other glassware. Dr. Harran observed one bottle of t-Butyllithium positioned on its side in the fume hood. Dr. Harran capped the reagent bottle. Dr. Harran confirmed that two bottles of T-Butyllithium would have been required to complete the reaction. Dr. Harran stated that the bottle he observed had approximately 20% remaining. Dr. Harran indicated that he did not remove any other items from the incident scene. Dr. Harran confirmed that he did instruct Hui Ding and Wei Feng to remove excess solvent drums from the incident location. Dr. Harran observed the syringe plunger on the floor, approximately six feet from the left side of Victim Sangji's fume hood.

A: Since that time we've put together, I've put together a scenario for how that could happen. All of them involve, you know, precarious handling of things in a way that is not ideal.

Q: What do you mean by that?

A: Well she had a, she had a needle in a syringe that even when full in this case, even when the 100ml tert-butyllithium bottle was full, it wouldn't touch the surface so there's no way to syringe out of there using that needle. So you're gonna have to tip it over, but then there's no clamp, at least none I could see, uh, in the hood, so what that means is you're gonna have your reagent bottle, you will have a source of nitrogen to avoid vacuum formation in the reagent bottle, you're gonna be tipping it. Now she had decided to use a large syringe for this transfer. Ok, she's not a very large person, so that's gonna take a lot of hands, so she's probably doing one of these kinda things-holding the syringe, holding the bottle, nitrogen line in, and shimming the barrel up. That's my guess. That's certainly not how she did experiments when I was in the lab with her at all. Uh, and I don't know, but I certainly hope that my personnel, my senior personnel, would not ever show someone to do an experiment that way, ever. That's my hope.

**[Tab 9, at 1:52:35:00-1:54:16].**

Dr. Harran stated that the syringe withdrawal method using a plastic syringe was generally an appropriate transfer method. However, Dr. Harran indicated that Victim Sangji should have been using a 6 or 8 inch stainless steel needle. Dr. Haran stated there are no problems associated with the use of a polypropylene syringe. However, Dr. Harran acknowledged that the plunger of a plastic syringe can sometimes become difficult to operate when transferring t-Butyllithium.

A: There can be minor changes in what I would call the tension that the apparatus provides to you. Um, sometimes depending upon the type of solvent you're using and the reagent-that tension will increase or decrease. But its always there, so there's tension, there's some sort of seal when the tension gets less, you know, you want to be careful that, you know, let

things come in. Don't go too quickly you'll be pulling in air around the sides. When it gets too much, you know, you have to make sure everything is clamped and you've got a long enough, cause your gonna have to use two hands to do that right.

Q: With respect to the transfer of t-Butyllithium, did you leave that to Paul, Paul Hurley, to, to give her any specific training?

A: I did. I assumed. I assumed that Paul would show her how to do that.

**[Tab 9, at 1:56:46-1:59:15].**

Dr. Harran again confirmed that no other documents or data was utilized in his lab with respect to an SOP for transferring t-Butyllithium, just "shared experience". Dr. Harran was shown a copy of Aldrich Technical Bulletin AL-134, *Handling Pyrophoric Reagents*. The document was marked as Appendix G and is incorporated herein under **Tab 32**. Dr. Harran indicated the document was not maintained in the lab. Dr. Harran did not know if Victim Sangji ever reviewed the bulletin. Dr. Harran further confirmed that MSDS sheets were not kept in the lab. Dr. Harran does not know if Paul Hurley ever discussed the MSDS data relative to t-Butyllithium with Victim Sangji.

Dr. Harran was shown a copy of the November 5, 2008 EH&S Lab Inspection Report. The document was marked as Appendix I and is incorporated herein under **Tab 32**. Dr. Harran confirmed receipt of the inspection report and indicated the inspection noted a number of issues relative to the storage of chemicals within the lab and the use of personal protective equipment. However, Dr. Harran maintained that the specific lack of personal protective equipment was never clarified by EH&S and consequently, Dr. Harran was unsure whether the notation on the lab inspection report was accurate.

Q: There was also an issue regarding personal protective equipment, correct?

A: Um. Yes. But we could not identify, um, where he was advocating PPE, who was violating Departmental policy and when we asked him, when Andrew asked him what policy was he said that wearing a lab coat was not a requirement in the lab...there was no policy that required lab coat usage at that time, even though I encouraged people as often as I could.

Q: Did you have a discussion with Andrew about the observation that Wheatley had made though-

A: No.

Q: with respect to who was not wearing lab coats or other personal protective equipment?

A: I think I asked Andrew, I asked Andrew was he talking about people in the lab. I suspected he was talking about people in the student rooms and things like this I didn't know. I've known what I had encouraged people to do, uh, and when I would go into the lab, uh, I would see people wearing their lab coats, including Sheri right. So it wasn't, you know, with most people, it would be somewhat intermittent, um, with Wei Feng and Hui its all the time, Sheri every time that I saw her that I can remember she was wearing a lab coat. Paul, you know, sometimes didn't like to wear a lab coat, sort of a t-shirt guy, and I'd tell him, you know, you gotta wear a lab coat.

Q: With respect to your conversation with Andrew, though, what did he say? Did he say there were people that weren't wearing their lab coats, did he concur with Michael Wheatley's observations?

A: No. He didn't. From my, I don't remember verbatim what was said, from my understanding is that he did not concur with that.

Q: But did he say why he did not concur?

A: Well, everyone was wearing eye protection and to your understanding of the policies at the time that was the requirement and the lab coat thing, since he told Andrew it wasn't a requirement Andrew wasn't sure why we were being cited for it. That's Andrew's claim.

**[Tab 9, at 2:07:00-2:10:07:00].**

Dr. Harran stated that he was not aware of any University policy that required use of a lab coat. Dr. Harran did not attempt to contact Michael Wheatley to secure clarification of PPE issues noted on the inspection report.

Dr. Harran was shown a copy of a signed document captioned "Employee Acknowledgement". The document was marked as Appendix E and is incorporated herein under **Tab 32**.

A: It says I hereby certify that I received an Environmental EH&S Safety Handbook for Employees. I've read the employee responsibilities stated above and agree to comply with safe work practices.

Q: Do you recall getting that handbook?

A: Ah, no. I recall getting a set of signature documents that were part of the appointment process.

Q: But you don't recall ever seeing that handbook?

A: Um, I don't recall, although it may have been sent to me and I cannot say it was not sent to me.

**[Tab 9, at 2:19:10-2:19:47:00].**

Dr. Harran then made the following unsolicited statement during the subsequent portion of the interview. Additional questions were then asked relative to the statement.

A: Actually regarding this [Dr. Harran points to Appendix E], I believe if you go back and look you'll find an e-mail from Nancy Blumstein where she sends me five or ten things to sign to expedite my paperwork prior to arriving on campus.

Q: And that's that notice of acknowledgement that we talked about, we haven't marked yet, correct-is it your recollection that you didn't receive that handbook.

A: It's not my recollection. I'm just, my recollection is that there were, um, many things that needed to be signed in order for my appointment to be complete by July 1 and that was one of them.

Q: And you just signed it?

A: Yes.

**[Tab 9, at 2:34:20-2:35:11].**

Dr. Harran stated that it was his belief that a cotton lab coat was sufficient protection when transferring t-Butyllithium through the syringe withdrawal method. Dr. Harran confirmed that attempting to complete a 50ml transfer with a 60ml syringe was "pushing it". Dr. Harran stated the reaction being undertaken by Victim Sangji on the date of the fatal incident was a standard protocol and was moderately complex.

Dr. Harran confirmed that he would generally visit the lab 3-4 times daily when he was on-campus. Dr. Harran maintained that he [Harran] never observed Victim Sangji not wearing a lab coat while working in the fume hood. Dr. Harran indicated that Paul Hurley would often not wear a lab coat and that Andrew Roberts would occasionally not wear a lab coat. Dr. Harran stated that the aforementioned lab personnel were not engaged in any dangerous procedures when he made the observations. Dr. Harran asserted that he always reminded personnel to wear lab coats in the lab.

### **BOI Interview of Mark Poyten, R&D Scientist, Sigma-Aldirch (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Poyten's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On September 24, 2009, BOI Investigator Baudendistel conducted a recorded telephone interview, with Mark Poyten. George Bleazard, Corporate Director EH&S, Product Compliance and Safety and Ed Austin, Safety Manager, for Aldrich were present during the conference call.

Mr. Poyten has been employed by Aldrich as a Scientist for approximately 13 years. Mr. Poyten has been engaged in organic synthesis at the R&D level for approximately 19 years. Mr. Poyten has a PhD in Chemistry from Purdue University and an undergraduate degree from Northern Illinois University. Mr. Poyten stated that he uses t-Butyllithium “quite often” in conducting research at Aldrich.

Mr. Poyten indicated that he is familiar with the syringe withdrawal method outlined by Aldrich, but only uses the procedure to transfer small volumes. Mr. Poyten stated that he preferred to use the cannula technique (double tipped needle).

Mr. Poyten stated there is no standard criteria used by Aldrich to define when a person is considered sufficiently qualified to follow the transfer procedures outlined in the Aldrich Technical Bulletin. Mr. Poyten indicated that many of Aldrich’s operators have only an undergraduate degree in Chemistry, but are able to complete the transfer procedures after sufficient training. Mr. Poyten indicated that the training at Aldrich consists of a 3-4 step process where operators are shown the procedure and supervised until the operator demonstrates proficiency.

Mr. Poyten stated that the syringe withdrawal method is not typically utilized at Aldrich; however, the procedure is occasionally utilized.

Q: When Aldrich is involved in using the syringe method, what type of volumes of transfers are you generally dealing with?

A: No more than 50ml by a syringe.

Q: And are you using a glass or a plastic syringe.

A: We prefer the glass syringe.

Q: Does that mean on occasion you do use a plastic?

A: I have used plastic syringes for much smaller volumes. Normally, when we’re handling a pyrophoric you usually don’t want to fill the entire syringe with the reagent and plastic syringes only come in a 60ml syringe, so to be safe you wouldn’t use it more than 30ml in that 60ml syringe. But normally, ah, I just use it on smaller volumes, if I’m doing 10ml or less. I can get away with a plastic syringe and not feel that it’s a problem

and bear in mind that it is a disposable syringe, so uh, you wouldn't want to be re-using a plastic syringe.

**[Tab 9 at, 0:10:00-0:11:24:00].**

Mr. Poyten indicated that although the Aldrich AL-134 bulletin does not expressly indicate that a plastic syringe cannot be utilized, the protocols outlined in the AL-134 bulletin require that all glassware be oven dried prior to use and, as such, effectively excludes plastic as being acceptable as the latter cannot be oven dried in a manner consistent with the AL-134 bulletin. Further, Mr. Poyten indicated that while the bulletin does specify reagent transfers are appropriate up to 50ml via syringe, a 100ml syringe would be necessary for such a volume. Mr. Poyten confirmed that a 100ml syringe is only available as glassware.

Q: But within the scientific community is that-

A: That is the usual rule of thumb for pyrotechnic transfers. Certainly if it's not pyrophoric there's very little to worry about filling the syringe to capacity.

**[Tab 9, 0:13:31:00-0:13:45:00].**

Mr. Poyten stated there are a number of other reasons why a plastic syringe should not be used to transfer t-Butyllithium. Mr. Poyten indicated the luer-locks on a plastic syringe do not function as well as metal locks [configured on glass syringes], which can lead to separation of the needle from the syringe. Additionally, a plastic syringe cannot be safely pressurized as outlined in the AL-134 bulletin, due to their oversized plungers. Thus, manual pulling of the plunger is required, which is also specifically not recommended by the Al-134 Bulletin. Mr. Poyten indicated that manually pulling the plunger may cause the plunger to become stuck within the syringe barrel.

A: What I normally find and this is why we recommend pressurizing the reagent vessel and filling a glass syringe is that while you're drawing some air between the plunger and the barrel ...that's where you also get some air to come into the system and then get some sort of hydrolysis and that can cause the salts to form on the barrel so it'd be difficult to slide the plunger in and out..."

Q: If you are using a plastic syringe, you would not want to use it more than one time, correct?

A: That would be ideal, not to use it more than once. Ah, that's not to say, ah you wouldn't want to use it more than once with a glass one- you wouldn't want to use a glass syringe at the same sitting-to multiple aliquots for your reagent vessel, for the same reason you can get that hydrolysis of your reagent onto the barrel and plunger and make the plunger and barrel stick..."

Q: At Aldrich when your doing the syringe withdrawal method what type of, ah, personal protective equipment do you normally employ when you do a transfer with a syringe.

A: With a syringe we always wear gloves and goggles and our particular site, where we handle pyrophorics, but when using pyrophorics, but when using phrophorics specifically, we put on a fire resistant coat, our pyro coats as well call them, and that's the normal level for syringe, we can also put on Nomex hoods and, uh, Nomex sleeves to protect the region between the glove and the coat sleeve...uh, but that depends on the volume of the transfer. **The bare minimum is a fire protective coat...**"

**[Tab 9, at 0:21:30:00- 0:27:16:00]. [Emphasis added].**

Mr. Poyten stated that the reagent bottle should be clamped down prior to transfer. "I would not suggest doing it any other way. You need that extra hand; you can't spend one of your hands on the bottle to hold it in place you need it for the manipulation of the syringe." **[Tab 9, at 0:36:25:00].**

Mr. Poyten confirmed that quotes attributed to him [Poyten] in the August 3, 2009 issue of Chemical Engineering News were accurate.<sup>19</sup>

### **BOI Interview of Daniel O'Leary, Professor of Chemistry, Pomona College (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. O'Leary's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On June 16, 2009, BOI Investigator Baudendistel conducted a recorded telephone interview, with Daniel O'Leary, at Bodwin College, 6600 College Station, Brunswick, Maine ( At the time of the interview, Dr. O'Leary was a visiting Professor of Chemistry).

Dr. O'Leary confirmed that he was Victim Sangji's undergraduate advisor at Pomona College. Dr. O'Leary stated that Victim Sangji also completed research in his [O'Leary's] lab over three summers at Pomona. Dr. O'Leary indicated Victim Sangji's first summer of research involved taking measurements on compounds. Dr. O'Leary stated this work constituted her contribution to the two published papers listed on her resume. Dr. O'Leary indicated Victim Sangji was involved in Peptide Synthesis during the remaining two summers of research and further confirmed that Victim Sangji's research at Pomona College did not involve the use of pyrophorics.

Dr. O'Leary indicated that pyrophorics were not used in the undergraduate classroom setting.

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<sup>19</sup> See Tab 19, Chemical & Engineering News: *Learning from UCLA, Details of the experiment that led to a researcher's death prompt evaluation of academic safety practices*, Volume 87, Number 31, pp.29-31, 33-34, August 3, 2009.

According to Dr. O'Leary, eye protection was always used in the lab; however, lab coats were not always used.

Dr. O'Leary had used t-Butyllithium as a Post Doctoral Researcher. Dr. O'Leary usually transferred the reagent via syringe or cannula. Dr. O'Leary indicated that while polypropylene syringes were commonly used to transfer t-Butyllithium, the barrel of the syringe would sometimes swell, possibly due to a reaction with the reagent's solvent, which would make the plunger of the syringe difficult to manipulate.

### **BOI Interview of Dr. Danny Levin, President Norac Pharma**

On July 24, 2009, at approximately 1330 hours, BOI Investigator Baudendistel received contact from Dr. Danny Levin, President of Norac Pharma. Mr. Levin confirmed that Victim Sangji had been employed by Norac as a Synthetic Chemist for several months, prior to taking a position with UCLA.

Dr. Levin indicated that he [Levin] had recruited Victim Sangji from the Claremont Colleges. Mr. Levin described Victim Sangji as bright, energetic, with a promising future. Dr. Levin stated that during her employment, Victim Sangji worked under close supervision of a senior Chemist. Dr. Levin indicated the Victim Sangji did not work with pyrophoric reagents while at Norac and more specifically confirmed that Victim Sangji did not work with t-Butyllithium during her employment. Dr. Levin stated that Victim Sangji's work was limited to a single scale-up project that involved the use of some toxic reagents. Dr. Levin indicated that employees at Norac are provided with lab coats and "light eye protection". Dr. Levin advised the lab coats are leased by Norac and are not generally retained by employees.

Dr. Levin stated that he [Levin] has a PhD in Chemistry from Oxford University and has been a Chemist for approximately 25 years. Dr. Levin indicated that he has handled t-Butyllithium and believed that Victim Sangji was not using proper techniques when handling the reagent. Dr. Levin expressed concern over the lack of adequate supervision during the transfer of the reagent. Dr. Levin stated that t-Butyllithium should only be handled by experienced personnel. Dr. Levin opined that based upon his knowledge of Victim Sangji's experience level, she [Sangji] should not have been left unsupervised. Additionally, Dr. Levin believed that Victim Sangji should have been utilizing proper personal protective equipment and should have completed the transfer within a fume hood.

Dr. Levin confirmed that the syringe method for reagent transfer was commonly utilized. However, Dr. Levin expressed concern over the use of a plastic syringe to transfer the t-Butyllithium from the reagent bottle. According to Dr. Levin, a glass syringe should be utilized, as the t-Butyllithium is highly reactive to moisture. As such, the glassware must be subjected to baking prior to use, to remove any residual moisture. Dr. Levin indicated that plastic syringes typically cannot be subjected to baking and thus could be potentially hazardous. Dr. Levin stated that he always used a glass syringe and would typically only withdraw approximately 10ML, via syringe. Dr. Levin considered a 50ML to be a rather large transfer to be accomplished with the syringe method. Dr. Levin stated Victim Sangji should have been using a 100ML syringe if she was making a transfer of approximately 50 ML. Dr. Levin indicated that the use of a 60ML

syringe for a 50ML transfer was problematic, as the plunger would be somewhat unstable, since it would have to be pulled far out of the syringe barrel to accommodate such a large volume of reagent.

Dr. Levin indicated that Norac utilized an outside vendor to supply and maintain their lab coats. According to Dr. Levin, employees are typically issued several lab coats which are cleaned and maintained by the supplier based upon a set schedule. Dr. Levin stated since the lab coats are “leased” from the supplier, the lab coats are kept on premises at Norac while not in use. Dr. Levin indicated that he was researching their records to determine if Victim Sangji had been issued her own lab coats. Dr. Levin confirmed that Norac has a strict policy requiring the use of eye protection and lab coats at all times within their lab facilities.

On June 25, 2009, the following e-mail was received from Dr. Levin:

“...I have confirmed that Sheri was issued with 5 labcoats whilst she worked here but we have no reason to believe she would have taken any of them when she left our employ. I’m afraid we have no evidence to confirm this however one way or the other...” [See Tab 14].

#### **Review of Documents Produced by Norac Pharma in Response to BOI Subpoena (Tab 14)**

A copy of Victim Sangji’s personnel file was obtained via subpoena. The records indicate Victim Sangji attended three safety meetings during her employment at Norac. The documents produced included a typewritten statement from Victim Sangji’s supervisor, James Luchi, detailing the scope of work undertaken by Victim Sangji during her brief period of employment:

“...Sheri had completed all of the cGMP training required of new employees and was in the process of undertaking completing the appropriate required environmental, health and safety training. She had also been issued all of the personal protective equipment (PPE) required for her position including lab coats, safety glasses, safety shoes, hard hat, and respirator. She was required to use the proper PPE for general lab work (lab coat, gloves, safety glasses, and safety shoes) and project specific PPE as needed.

**As a junior level chemist, she was closely supervised and did not perform any independent experimental work in the lab without direct guidance from her supervisor due to her limited prior laboratory experience.** Sheri was trained in the proper use and handling of the reagents used in the one project that she worked on during her time at Norac, including familiarization with relevant MSDS and other safety information. Her first exposure to any new lab work was always as an observer of her supervisor's experimentation. After that initial introduction, she would perform the same experiment with her supervisor present to ensure that she could repeat the experiment safely and achieve the same experimental result. Subsequent experimental work based on the

original procedure was designed or approved by her supervisor before being executed by Sheri in the lab. At no time was Sheri allowed to work in the lab without other, more experienced chemists present.

Her role in process safety evaluations was limited to being trained on the proper use of the ARSST (Advanced Reactive System Screening Tool) used by Norac for process safety evaluations. While she did perform a few experiments using the ARSST under direct supervision, she was not responsible for interpreting the data derived from these experiments nor defining consequent safety conclusions.” **[Emphasis Added]**.

### **Review of Documents Produced by UCLA in Response to BOI Subpoena (BOI Investigation Binders Vol. 3-5, UCLA Bates No. 000001-001335)**

UCLA produced various documents in response to a BOI subpoena served on July 13, 2009. The documents are included with this report under BOI Investigation Binders Vol. 3-5. The documents are Bates Numbered UCLA 000001-001335. Due to the volume of production, the documents will not be reviewed in this section.

For further information on the full scope of the production, refer to Appendix A of the Subpoena Duces Tecum contained in BOI Investigation Binder Volume 3.

### **Review of Victim Sangji’s UCLA Personnel File (Tab 38)**

#### **(a) Attendance Record**

A review of Victim Sangji’s time card entries for October 30, 2008 (Michael Wheatley’s Lab Safety Inspection) indicates that Victim Sangji was working in the lab on the date in question. Victim Sangji began work on the morning of the 30<sup>th</sup> at 0800 hours. Victim Sangji left the lab at 1200 hours and returned at 1300hours. Victim Sangji then left the lab at 1700 hours.

### **Review of the UCLA Fire Marshall’s Investigation Report (Tab 42)**

For the sake of brevity, a review of the investigation report is omitted. It should be noted that Deputy Fire Marshal Joel Aplin and Assistant Fire Marshal Steve Girato conducted a recorded interview with Dr. Patrick Harran on February 5, 2009. A copy of the interview transcript is attached under **Tab 34**. A copy of the recorded interview is attached under **Tab 9**.

### **Review of the County of Los Angeles Coroners Investigation and Autopsy Reports (Tab 35)**

For the sake of brevity, a complete review of the Autopsy and Investigation report is omitted.

An Autopsy was completed on January 17, 2009. The official cause of death was determined to be Sequelae of Thermal Burns.

### **Review of the Los Angeles City Fire Arson Investigation Report (Tab 43)**

As previously indicated, Investigator Zlendick and Investigator Hernandez conducted a brief investigation on the date of the incident. For the sake of brevity a complete discussion of the report is omitted. However, the following statement was obtained from Victim Sangji:

“...After the patient was stabilized I was able to conduct an interview with the patient. The patient made the following statements:

She is a full time lab tech at UCLA, and was working with a chemical called Perbutyllithium, She was extracting chemical out of a 4-oz. bottle with a 60 mil Syringe.

She pulled the plunger out too far, the plunger came out of the housing, of the syringe, and the chemical spilled out and flashed. She stated the chemical would spontaneously ignite if it combines with air.

She further stated there was also a chemical called Hexane solution that is very flammable, that spilled on her clothes that also ignited and caused her clothes to catch fire. She further stated there were three other individuals in the room who came to her aide...”

### **Review of the Los Angeles Police Department Investigation Report (Tab 36)**

The Los Angeles Police Department completed a brief Death Investigation Report, after being notified by The Grossman Burn Center. The report does not contain any interview summaries or other information relevant to the instant investigation.

### **Review of the Los Angeles County Hazardous Materials Division Incident Report (Tab 37)**

The County of Los Angeles Fire Department Health Hazardous Materials Division arrived at the incident scene on 12-29-2008 at 1540 hours and remained on-scene through 1830 hours. The following action was taken by the Hazmat Unit:

“Properly capped and put into proper storage two contained of tertbutyllithium; neutralized solution containing dilute tertbutyllithium for disposal into hazardous waste container. The burned student’s professor conducted the neutralization himself.”

### **Review of Victim Sangji’s Undergraduate Record (Tab 15)**

Victim Sangji’s undergraduate transcripts confirmed that a Bachelor of Arts Degree in Chemistry was conferred on May 18, 2008.

### **Review of Victim Sangji's UCLA Laboratory Notebook (Tab 38)**

Victim Sangji completed a total of 16 reactions beginning on October 14, 2008 through the date of the fatal incident. The log indicates that Victim Sangji completed the Vinylithium reaction on October 17, 2008 and December 29, 2008.

### **Review of Technical Specifications from Henke Sass Wolf (HSW) (Tab 41)**

Copies of all packaging inserts, product labeling, manufacturing data, technical drawings and quality control information relating the HSW 60 ML luer-lock syringe was obtained from the manufacturer, HSW GmbH, Tuttlingen, Germany. The packaging does not contain any warnings or limitations which would prohibit the use of the syringe as mechanism to transfer t-Butyllithium. [Note: much of the quality control and testing information is in German and has not been translated].

On October 7, 2009, contact was made HSW's U.S. representative, Paul Oberdorfer, with Air-Tight Products. Mr. Oberdorfer confirmed that the luer-lock syringe was not designed to be pressurized. Mr. Oberdorfer indicated that pressures exceeding 7psi could force the material in the syringe around the plunger. Mr. Oberdorfer confirmed that the luer lock syringe is equipped with a positive stop at the end of the syringe (raised ring around the inner barrel near the end syringe). However, Mr. Oberdorfer indicated that 10lbs of lateral pressure is the maximum resistance of the stop.

### **Review of UCLA Training Records (Tab 46)**

Written training records verifying Chemical Safety or Lab Safety Training were not available.

### **PRIOR INCIDENTS**

The investigation also revealed the existence of two unreported workplace incidents that involved burn injuries to employees who were not wearing lab coats and other personal protective items:

#### **1. November 13, 2007 Graduate Student Researcher Matthew Graf (Tab 45)**

Mr. Graf was flame-sanitizing surfaces of cells on a laboratory bench with 95% ethanol alcohol near an open flame from a Bunsen burner. He was not wearing a lab coat. When reaching for the gas line of the burner to turn it off, Mr. Graf spilled the glass bottle of alcohol, which resulted in the contents being splashed onto the counter and Mr. Graf's shirt. Mr. Graf immediately caught on fire. Mr. Graf proceeded toward the emergency shower located down the hallway from the lab. The fire had extinguished itself by the time Mr. Graf reached the shower. Mr. Graf sustained second degree burns to his hands and torso. Mr. Graf walked to the emergency room and was admitted to the Grossman Burn Center the following day. Mr. Graf was hospitalized at Grossman for approximately one week and underwent surgery to his hands.

#### **(a) BOI Interview of Matthew Graf (Tab 9)**

*[Note: While the foregoing summary generally follows the sequence of Mr. Graf's actual interview, portions of the statement may have been moved in the timeline to provide continuity to the reader. The summary is not a verbatim transcript of the interview and does not necessarily reflect all areas of questioning].*

On September 22, 2009, BOI Investigator Baudendistel conducted a recorded interview with Mathew Graf. The interview was conducted at UCLA. Also present during the interview was Associate Safety Engineer Renee Jones, with the Los Angeles District Office. Mr. Graf was located on the date of the interview working at a lab bench in Young Hall, Lab 5096. Mr. Graf was not wearing a lab coat.

Mr. Graf has been a graduate student in the Chemistry Department since 2005. Mr. Graf's principal area of research is Microbiology. Mr. Graf first began working as a Graduate Student Researcher for Dr. Gober in 2006.

Mr. Graf confirmed that he was working in his assigned lab in November 2007 and was flame sanitizing a glass rod being used while plating cells. Mr. Graf stated that the process involves first dipping the glass rod into Ethanol and then running the end of the rod through an open flame. Mr. Graf was using a Bunsen-type burner at the time of the incident. Mr. Graf indicated that during this process, he somehow knocked over a glass container containing between 50-100ml of Ethanol. The solution spilled onto his hands and chest area and quickly caught fire. Mr. Graf ran out of the lab and toward the emergency shower located in the hallway. Mr. Graf stated that by the time he reached the shower, the flames had extinguished. Mr. Graf returned to the lab and only observed a very small amount of fire. Once extinguished, Mr. Graf advised the Principal Investigator, Dr. Gober, about the incident. Dr. Gober instructed Mr. Graf to go to the hospital.

Mr. Graf stated that he walked toward the emergency room which was an approximate 10-15 minute walk. Mr. Graf indicated that approximately half way to the emergency room he began to feel pain from his resulting burns. Mr. Graf ran into a friend who then accompanied him to the emergency room. Mr. Graf was first placed into a cold shower and later was given Morphine. Mr. Graf was released to his parents the same day, with instructions to report to the Grossman Burn Center the following morning. Mr. Graf was admitted to Grossman the following day. Mr. Graf remained at Grossman for approximately seven days. Mr. Graf believed that he sustained first and second-degree burns to his hands and torso.

Mr. Graf stated that at time of the incident he was wearing a long sleeve cotton under shirt and a short sleeve polyester shirt on top. Mr. Graf confirmed that he was not wearing a lab coat. Mr. Graf indicated that the polyester shirt essentially melted to the cotton undershirt. However, due to fast burning nature of Ethanol, Mr. Graf stated that the fire did not burn through the cotton shirt. Mr. Graf stated there was no policy at the time of the incident that required the use of a lab coat. Mr. Graf stated that the decision to utilize a lab coat was at the discretion of the researcher, but maintains most lab personnel wore lab coats when performing hazardous activities. Mr. Graf stated that most of the work in their lab is "chemically non-hazardous". However, Mr. Graf confirmed that his research did involve the use of some acids, carcinogens and other hazardous materials. According to Mr. Graf open flame is often used in the lab:

A: Generally when you do sort of work because, um, the nature of the bacterial, um, and the nature of these old buildings, there are a lot of spores and, um, fungi in the air and so we work by a flame when we're working with cells to keep an updraft of air-it keeps things from falling onto the plates and into the media..." [Tab 9, at 0:06:52].

Mr. Graf confirmed that UCLA worker's compensation personnel visited him at Grossman Burn Center. Mr. Graf also stated that he was contacted by several people in the EH&S Department when he returned to UCLA in Mid-December 2007.

Mr. Graf stated that shortly after Victim Sangji's incident, he responded to a general e-mail sent by the Chemistry Department Chair, Al Coury, that advised personnel of the incident. According to Mr. Graf, he [Graf] responded and offered to meet with Victim Sangji's family to discuss his experience at Grossman Burn Center. Mr. Graf indicated that he met with two of Victim Sangji's friends/relatives in Al Coury's office and discussed the care he received at Grossman Burn Center. Mr. Graf stated that meeting lasted approximately 20 minutes. Mr. Graf did not meet with Victim Sangji's parents.

## 2. December 22, 2008 Graduate Student Researcher Jonah Chung (Tab 44)

Mr. Chung was completing a reaction that involved the substitution of Methyllithium for n-Butyllithium. The reaction called for the distillation of the resultant oil mixture. At the end of the reaction, Mr. Chung noticed white smoke emanating from the reaction pot. The reaction pot detonated, causing glass, hot oil, and chemicals to strike his face and torso. Mr. Chung sustained burns to his torso, arms, and face and also sustained large lacerations to his neck and forehead. Mr. Chung was not wearing a lab coat, gloves, nor appropriate eye protection (wearing only prescription glasses) at the time of the incident.

A copy of the UCLA Incident report is attached under **Tab 44**. Photographs of the incident scene, taken by the UCLA Fire Marshall's Office are included (**See BOI Investigation Binder, Volume 5, UCLA Bates No. 001005-001036**).

## CONCLUSION

Based upon the investigation, it is apparent that the laboratory safety policies and practices utilized by UCLA prior to Victim Sangji's death, were so defective as to render the University's required Chemical Hygiene Plan and Injury and Illness Prevention Program essentially non-existent. The lack of adequate lab safety training and documentation, lack of effective hazard communication practices, and repeated failure to correct persistent and repeated safety violations within University labs, were all causal deficiencies that led to a systemic breakdown of overall laboratory safety practices at UCLA.

While the University EH&S Department was made aware, through its numerous inspections, of continuous and pervasive safety violations within the laboratories, particularly with respect to the failure of personnel to utilize adequate personal protective equipment, the University failed to take the required efforts to correct recurring hazards to employees. In fact, even after the occurrence of

two incidents that resulted in significant burn injuries to employees as a result of failing to wear required personal protective equipment, the EH&S Department failed to take any affirmative steps to abate a rather clear and appreciable danger.

The testimony obtained in this case clearly establishes that University accepted the fact that many Principal Investigators consistently failed to enforce the use of personal protective equipment within their labs as “part of the culture”. In fact, as the University’s former Manager of Chemical Safety, William Peck, candidly admitted, **“...It was kind of common knowledge that laboratory people don’t use the proper PPE when they are in the lab... it was hard to convince the professors that they needed to...and if the professors didn’t enforce it, nobody did. Because...EH&S didn’t enforce things like that.”** Not only did the University permit Principal Investigators to violate safety regulations without consequence, the University also failed to exercise any reasonable diligence to verify whether an incoming Principal Investigator had the requisite ability to comply with University policy and other mandated safety regulations, prior permitting the PI to undertake research and supervise personnel.

Despite Dr. Harran’s assertions to the contrary, it is clear that Victim Sangji was not properly trained, if at all, in the procedures necessary for the safe handling and transfer of t-Butyllithium. While Dr. Harran initially represented to both the University EH&S Department and to the Division that Victim Sangji had been trained by senior personnel in accordance with the Aldrich Bulletin and that Victim Sangji had training and experience as an undergraduate relative to the use of t-Butyllithium, subsequent investigation revealed that these assertions were at best misleading.

Victim Sangji’s undergraduate advisor, as well as her previous employer, both confirmed that the Victim did not have any previous experience using pyrophoric reagents. Further, a review of Victim Sangji’s research at UCLA indicated that she had completed the reaction on only one occasion prior to the fatal incident.

The subsequent interview of Dr. Paul Hurley, confirmed that he [Hurley] did not follow the Aldrich bulletin as a normal practice, nor was he familiar with the procedures outlined by Aldrich. In fact, upon specific inquiry into Dr. Hurley’s actual practices in the lab, it was revealed that many of the procedures that he employed when making transfers of t-Butyllithium were actually contrary to both the procedures outlined by Aldrich and by generally accepted laboratory standards.

Further, Dr. Harran confirmed that he did not discuss the hazards of t-Butyllithium with Victim Sangji, nor did he inquire whether Victim Sangji was familiar with the reagent, prior to directing her to use it. Dr. Harran also admitted that he never attempted to determine whether Victim Sangji had actually been trained by his senior researcher, Dr. Paul Hurley, despite the fact that Dr. Harran was well aware of Victim Sangji’s research activity as it related to the use of t-Butyllithium; a reagent he acknowledged was extremely hazardous.

Dr. Harran’s failure to utilize required standard operating procedures relative to the use and handling of t-Butyllithium, was also a causal element in this case. As Dr. Harran admitted during his BOI interview, the Aldrich Bulletin was used as a “general” reference only. Any alleged employee training was based primarily upon the experience of senior personnel. As Dr. Harran confirmed, **“...in my field we pass down knowledge open, ah, one generation to another and**

**this is lore. It's something that you do almost on a daily basis...the procedures are very general.**” Indeed, as evidenced by Dr. Paul Hurley’s interview, so-called “training” based upon a researcher’s experience can lead to the use of improper methodologies.

Dr. Harran’s additional contention that Victim Sangji was otherwise adequately trained to handle t-Butyllithium, since she allegedly demonstrated some familiarity with general syringe transfer techniques when handling non-hazardous reagents during her first day in the lab, is nothing short of incredulous. Many of the techniques utilized by Victim Sangji on the date of the fatal incident, were, in fact, contrary to the procedures specified by Aldrich. While the techniques may have, in many respects, been generally acceptable when handling non-hazardous reagents, these same practices were directly attributable to the cause of the fatal incident in this case. As previously stated, the handling and transfer of t-Butyllithium requires the use of specialized transfer methods by “experienced laboratory personnel under carefully controlled conditions and with suitable protective measures in place” [Aldrich AL-164]. Dr. Harran’s position in this regard, simply runs counter to the numerous manufacturer warnings relative to the use of t-Butyllithium and is contrary to generally recognized practices for making transfers of the reagent.

More significantly however, was Dr. Harran’s failure to both provide appropriate personal protective equipment to Victim Sangji and to ensure that PPE was utilized by his laboratory personnel. While Dr. Harran maintained that he “encouraged” the use of lab coats in the laboratory facilities under his control, testimony obtained from researchers employed by Dr. Harran indicated that, with few exceptions, personnel did not routinely wear lab coats while working in the lab. It was also confirmed that Victim Sangji did not routinely wear a lab coat while in the lab. The lab personnel also indicated that while Dr. Harran was aware that lab coats were not being utilized by employees, he [Harran] did not enforce their use. Further, no evidence exists that Victim Sangji had ever been issued a lab coat during her employment at UCLA.

Even assuming, arguendo, that Victim Sangji was issued a cotton lab coat, the level of protection that would have been afforded by the coat was wholly insufficient for Victim Sangji’s activities on the date of the fatal incident. Without question, the use of t-Butyllithium carries with it an inherent and extreme potential for serious burn injuries in the event of an incidental exposure to the reagent. Given the reagent’s well known characteristics, fire resistant clothing is the minimally required clothing when handling a highly reactive pyrophoric such as t-Butyllithium, particularly in light of the scale of transfer attempted by Victim Sangji on the date of the fatal incident. As Aldrich’s Mark Poyten confirmed, **“the bare minimum is a fire protective coat...”** This same requirement is echoed by another leading manufacturer of t-Butyllithium, FMC Lithium, **“...all protective clothing should be flame retardant and easy to remove in the event of a spill...”**<sup>20</sup> General Industry Safety Order 3383(b) mandates that clothing appropriate for the work being done shall be worn.

UCLA through its failure to maintain an effective Chemical Hygiene Plan and Injury and Illness Prevention Plan, through repeated inability of the Office of Environmental Health & Safety to assure enforcement chemical safety requirements, and through the actions of Dr. Harran, wholly neglected its legal obligations to provide a safe working environment for lab personnel. Dr. Harran

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<sup>20</sup> See FMC Lithium, Butyllithium Safe Handling Guide p. 62 (March 2005), available at [www.FMClithium.com](http://www.FMClithium.com).

simply disregarded the open and obvious dangers presented in this case and permitted Victim Sangji to work in a manner that knowingly caused her to be exposed to a serious and foreseeable risk of serious injury or death. If Dr. Harran had utilized a standard operating procedure as required and would have properly trained Victim Sangji, and assured that clothing appropriate for the work was worn to protect her from inadvertent exposure to t-Butyllithium, Victim Sangji's death would have been prevented.

**WITNESSES/PARTIES IDENTIFIED AT SCENE:**

**ADDENDUM:**

- i. Contact information for involved parties and/or witnesses;
- ii. UCLA Organizational Chart;

**BOI Investigation Binder Volume 1**

1. Citations issued to UCLA and Cited Sections of Title 8, California Code of Regulations;
2. Copies of the Division's Reports and Documents Supporting the Division's Reports and Documents Supporting the Serious Accident-Related Citations;
3. SE Porras' Investigation Notes;
4. Division's Written Interview Questionnaire of Dr. Patrick Harran;
5. Division's Written Interview Questionnaire of Dr. Wei Feng Chen;
6. Division's Written Interview Questionnaire of Dr. Hui Ding;
7. E-mails from Dr. Harran to SE Porras;
8. California Secretary of State Corporate Records Database information for The Regents of The University of California;
9. CD's of BOI recorded interviews;
10. CDs- Documents Produced By UCLA in Response to July 13, 2009 BOI Subpoena;
11. Photo CD's;
12. Incident Photos Taken by the Division and UCLA EH&S;

13. Victim Sangji Recommendation Letter and Resume;
14. Documents Produced by Norac Pharma in Response to June 16, 2009 BOI Subpoena;
15. Victim Sanji Undergraduate Records;
16. October 30, 2008 UCLA EH&S Lab Inspection Report of Dr. Harran's labs;
17. Response from Aldrich-Aldrich AL 134 Technical Bulletin, Technical Bulletin AL 164 and Miscellaneous e-mails;
18. Sigma-Aldrich Material Safety Data Sheet, tert-Butyllithium;
19. American Chemical Society: *Safe handling of organolithium compounds in the laboratory*, 2002;
20. UCLA Policy 811;
21. Lab Coat Invoices;
22. E-mail from Dr. Patrick Harran to UCLA EH&S Chemical Safety Office, Michael Wheatley, Re: Standard Operating Procedures (SOP's);
23. October 16, 2008 e-mail from Victim Sangji to Dr. Paul Hurley re: request for Vinylithium protocol;

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24. Appendix A-E to recorded BOI interview of Chris Lutton;
25. Appendix A-F to recorded BOI interview of Joel Aplin;
26. Appendix A-B to recorded BOI interview of Michael Wheatley;
27. Appendix A-C to recorded BOI interview of Dr. Hui Ding;
28. Appendix A-F to recorded BOI interview of Dr. Wei Feng Chen;
29. Appendix A-F to recorded BOI interview of Bill Peck;
30. Appendix A to recorded BOI interview of Dr. James Gibson;
31. Appendix A-G to recorded BOI interview of Dr. Paul Hurley;
32. Appendix A-K to recorded BOI interview of Dr. Patrick Harran;

33. Appendix A-B to recorded BOI interview of Andrew Roberts;
34. Transcript, February 5, 2009 UCLA Fire Marshal Interview of Dr. Patrick Harran;
35. Los Angeles County Coroner's Autopsy Report;
36. Los Angeles Police Department Death Investigation Report;
37. Los Angeles County Fire Department Critical Hazardous Materials Incident;
38. Victim Sangji's Laboratory Notebook;
39. Victim Sangji's UCLA Timecards;
40. UAW Production in Response to July 17, 2009 BOI Subpoena;
41. Product Information provided by Henke Sass Wolf (HSW);
42. UCLA EH&S Fire Marshal Report;
43. Los Angeles Fire Arson Investigation Report;
44. UCLA EH&S Incident Report Re: Jonah Chang 12-23-2008 Explosion;
45. UCLA EH&S Accident Investigation Report Re: Matthew Graf 11-13-2007 Burn Incident;
46. UCLA Chemical Safety and Laboratory Safety Training Records-confirmation of no records;

**BOI Investigation Binder Volume 3**

Documents Produced by UCLA in Response to BOI Subpoena, Bates 000001-000459

**BOI Investigation Binder Volume 4**

Documents Produced by UCLA in Response to BOI Subpoena, Bates 000472-000859

**BOI Investigation Binder Volume 5**

Documents Produced by UCLA in Response to BOI Subpoena, Bates 000860-001335