

COPY

IN THE COURT OF APPEALS
OF THE STATE OF NEW MEXICO

COURT OF APPEALS OF NEW MEXICO
FILED

APR 29 2010



CONCEPTION and ROSARIO
ACOSTA, et al.

Plaintiffs/Intervenors-Appellants,

v.

Ct. App. No. 29,502
5th Judicial Dist. Ct. No. CV 99-509

SHELL WESTERN EXPLORATION
AND PRODUCTION, INC. and
SHELL OIL COMPANY,

Defendants-Appellees.

APPEAL FROM THE DISTRICT COURT
FIFTH JUDICIAL DISTRICT
COUNTY OF LEA
HON. FREDDIE ROMERO, PRESIDING

BRIEF IN CHIEF

(ORAL ARGUMENT IS REQUESTED)

David R. Lira
Girardi & Keese
1126 Wilshire Boulevard
Los Angeles, CA 90017
(213) 977-0211

Steven L. Tucker
Tucker Law Firm, PC
520 Agua Fria Street
Santa Fe, NM 87501
(505) 982-3467

Martin N. Buchanan
Niddrie, Fish & Buchanan
750 B Street, Suite 2640
San Diego, CA 92101
(619) 238-2426

Attorneys for Plaintiffs/Intervenors-Appellants

TABLE OF CONTENTS

STATEMENT OF COMPLIANCE iii

REFERENCES TO THE TRANSCRIPT iii

TABLE OF AUTHORITIES iv

SUMMARY OF PROCEEDINGS 1

 A. Nature of the Case, Course of Proceedings, and Disposition
 Below 1

 B. Summary of Material Facts 2

 1. Trial Evidence 2

 2. Dr. Dahlgren’s Excluded Expert Testimony and
 Epidemiological Study on Lupus and Other Immune Disorders ... 7

 3. Juror Bias and Misconduct 18

ARGUMENT 23

 POINT 1: THE DISTRICT COURT ERRED BY EXCLUDING DR.
 DAHLGREN’S CAUSATION OPINIONS AND
 EPIDEMIOLOGICAL STUDY ON LUPUS AND OTHER IMMUNE
 CONDITIONS AND BY GRANTING SUMMARY JUDGMENT
 ON THESE CLAIMS 23

 A. Standard of Review 23

 B. Preservation of Error 24

 C. Dr. Dahlgren’s Causation Opinions and Epidemiological
 Study Were Based on a Scientifically Reliable Foundation and
 Methodology 24

 D. The Partial Summary Judgment Order Must Be Reversed 33

POINT 2: THE DISTRICT COURT ABUSED ITS DISCRETION
BY DENYING THE MOTION FOR NEW TRIAL AS TO ALL
PLAINTIFFS 34

 A. Standard of Review 34

 B. Preservation of Error 35

 C. The Juror Affidavits Were Admissible 35

 D. The Jurors Committed Misconduct by Prejudging the Case,
 Exhibiting Bias Against the Plaintiffs, and Violating the Jury
 Instructions 39

 E. The Juror Misconduct and Juror Bias Require a New Trial ... 42

STATEMENT REGARDING ORAL ARGUMENT 45

CONCLUSION 46

CERTIFICATE OF SERVICE 47

STATEMENT OF COMPLIANCE

By his signature at the end of this brief, Martin N. Buchanan states that, based on the word-count feature of WordPerfect version 12, the body of this brief contains 10,936 words and, therefore, complies with the word-limitation provision in Rule 12-213(F)(3), NMRA.

REFERENCES TO THE TRANSCRIPT

Citations to the official transcripts are by date and page number, *e.g.*, Tr. 11/13/07 p. 29. With leave of Court, the parties have also submitted unofficial written transcripts of a number of hearings officially transcribed by audiotape. The only unofficial written transcript cited in this brief is the transcript of a *Daubert* hearing held on August 24-25, 2004, which is also cited by date and page number.

TABLE OF AUTHORITIES

NEW MEXICO CASES

<i>Beggs v. City of Portales</i> , 2009-NMSC-023, 146 N.M. 372, 210 P.3d 798	24
<i>City of Clovis v. Ware</i> , 96 N.M. 479, 632 P.2d 356 (1981)	38
<i>Goodloe v. Bookout</i> , 1999-NMCA-061, 127 N.M. 327 (1999)	35-37
<i>Lee v. Martinez</i> , 2004-NMSC-027, 136 N.M. 166, 96 P.3d 291	24
<i>McNeill v. Rice Engineering and Operating, Inc.</i> , 2003-NMCA-078, 133 N.M. 804, 70 P.3d 794	34
<i>Shadoan v. Cities of Gold Casino</i> , 2010-NMCA-002	34
<i>State v. Alberico</i> , 116 N.M. 156, 861 P.2d 192 (1993)	23, 24
<i>State v. Downey</i> , 2008-NMSC-061, 145 N.M. 232, 195 P.3d 1244	25, 27
<i>State v. Gardner</i> , 2003-NMCA-107, 134 N.M. 294	42
<i>State v. Mann</i> , 2002-NMSC-001, 131 N.M. 459	34, 40, 42
<i>State v. Paredes</i> , 2004-NMSC-036, 136 N.M. 533	43
<i>State v. Rackley</i> , 2000-NMCA-027, 128 N.M. 761	41
<i>State v. Torres</i> , 1999-NMSC-010, 127 N.M. 20, 976 P.2d 20	25

CASES FROM OTHER JURISDICTIONS

<i>Amorgianos v. National R.R. Passenger Corp.</i> , 303 F.3d 256 (2d Cir. 2002)	33
<i>Bonner v. ISP Technologies, Inc.</i> , 259 F.3d 924 (8th Cir. 2001)	26, 33

<i>Clausen v. M/V NEW CARISSA</i> , 339 F.3d 1049 (9th Cir. 2003)	16
<i>Clemens v. Regents of the University of California</i> , 20 Cal.App.3d 356, 97 Cal.Rptr. 589 (Cal. Ct. App. 1971)	39, 43
<i>Commonwealth v. Kerpan</i> , 508 Pa. 418, 498 A.2d 829 (Penn. 1985)	37
<i>Cooper v. Carr</i> , 161 Mich. 405, 126 N.W. 468 (Mich. 1910)	45
<i>Correll v. Pederson</i> , 185 Wis.2d 199, 518 N.W.2d 247 (Wis. 1994)	42
<i>Daubert v. Merrell Dow Pharmaceuticals, Inc.</i> , 509 U.S. 579 (1993)	23-26, 30-33
<i>Dept. of Transportation & Development v. Moneleone</i> , 976 So.2d 798 (La. Ct. App. 2008)	45
<i>Frye v. United States</i> , 293 F. 1013 (D.C. Cir. 1923)	24
<i>General Electric Co. v. Joiner</i> , 522 U.S. 136 (1997)	27
<i>Golden Eagle Archery, Inc. v. Jackson</i> , 24 S.W.3d 362 (Tex. 2000)	37
<i>Hardyman v. Norfolk & Western Railway Co.</i> , 243 F.3d 255 (6th Cir. 2001) ..	16
<i>Heller v. Shaw Indus., Inc.</i> , 167 F.3d 146 (3d Cir. 1999)	25, 26, 32, 33
<i>Hose v. Chicago Northwestern Transp. Co.</i> , 70 F.3d 968 (8th Cir. 1996)	26
<i>In re Fosamax Products Liability Litigation</i> , 645 F. Supp. 2d 164 (S.D.N.Y. 2009)	28
<i>Isabelle v. Proctor Hospital</i> , 131 Vt. 1, 298 A.2d 818 (Vt. 1972)	45
<i>Knight v. Kirby Inland Marine, Inc.</i> , 482 F.3d 347 (5th Cir. 2007).	26
<i>Kudabeck v. Kroger Co.</i> , 338 F.3d 856 (8th Cir. 2003)	25, 33
<i>McNally v. Walkowski</i> , 85 Nev. 696, 462 P.2d 1016 (Nev. 1969)	43

<i>Metabolife Intern., Inc. v. Wornick</i> , 264 F.3d 832 (9th Cir. 2001)	31-32
<i>Oswald v. Bertrand</i> , 249 F. Supp. 2d 1078 (E.D. Wis. 2003)	39
<i>Parrish v. Lilly</i> , 883 P.2d 158 (Okla. 1993)	43
<i>People v. Flockhart</i> , __ P.3d ___, 2009 WL 4981910 (Col. App. 2009)	37
<i>Primiano v. Cook</i> , __ F.3d ___, 2010 WL 788906 (9th Cir. 2010)	25, 33
<i>Rider v. Sandoz Pharmaceuticals Corp.</i> , 295 F.3d 1194 (11th Cir. 2002)	33
<i>State v. Cherry</i> , 341 Ark. 924, 20 S.W.3d 354 (Ark. 2000)	36, 44
<i>State v. McCleskey</i> , 69 P.3d 111 (Idaho 2003)	37
<i>State v. Rojas</i> , 177 Ariz. 454, 868 P.2d 1037 (Ariz. App. 1993)	38
<i>State v. Washington</i> , 182 Conn. 419, 438 A.2d 1144 (Ariz. 1980)	37-38
<i>Westberry v. Gislaved Gummi AB</i> , 178 F.3d 257 (4th Cir. 1999)	16, 27
<i>Winebrenner v. United States</i> , 147 F.2d 322 (8th Cir. 1945)	38

OTHER AUTHORITIES

N.M. Const., Art. 2, § 12	38
Reference Manual on Scientific Evidence (2d ed. 2000)	8, 26, 28-31
Rule 11-606(B), NMRA	34-38
UJI 13-110, NMRA	18-19, 36-40, 44

SUMMARY OF PROCEEDINGS

A. Nature of the Case, Course of Proceedings, and Disposition Below

This is an action for damages brought by over 200 residents of the City of Hobbs against Shell Western Exploration and Production Inc. and Shell Oil Company (collectively “Shell”) for environmental contamination from Shell’s former oil and gas operations in the area from the 1940's through 1993. The plaintiffs asserted claims for negligence, strict liability, nuisance, and trespass, and alleged that they had suffered personal injuries and property damage as a result of the contamination. 1 RP 1-39.

Before trial, the district court ruled that the plaintiffs’ causation expert, Dr. James Dahlgren, would not be permitted to testify that plaintiffs’ exposure to Shell’s toxic contaminants caused or contributed to their lupus and other autoimmune disorders. 66 RP 21186-21188. The court ruled that there was “insufficient scientifically reliable evidence” of a causal connection between the chemicals at issue and autoimmune diseases. 66 RP 21186, 21193. The court also excluded Dr. Dahlgren’s published and peer-reviewed epidemiological study of his own findings on the elevated incidence of lupus and other immune conditions among the plaintiffs. 67 RP 21280-21281. Based on these rulings, the court granted Shell’s motion for summary judgment on plaintiffs’ claims of lupus and other autoimmune diseases. 67 RP 21267.

In a one-month jury trial, the court tried the remaining personal injury and property claims of a group of nine plaintiffs selected by the parties for the first trial. 57 RP 18357, 18511, 18526. The jury returned a defense verdict as to all nine plaintiffs. 68 RP 21734-21740. After the verdict, plaintiffs filed a motion for new trial based on juror misconduct and juror bias. 68 RP 21761-21778. The court denied the motion and entered a final judgment in favor of Shell and against this group of plaintiffs. 69 RP 22060-22095. This appeal is from the final judgment and the order denying the motion for new trial. 69 RP 22155-22193. The action is still pending in the district court as to the remaining plaintiffs.

B. Summary of Material Facts

1. Trial Evidence

From the 1940's until 1993, Shell conducted oil and gas operations on the Grimes Lease in the City of Hobbs. Shell's operations included the Grimes tank battery, where crude oil was stored. Tr. 11/13/07 pp. 29, 65. Just to the east of the Grimes tank battery, Shell had an unlined storage pit ("the Tasker pit") where toxic hydrocarbons were placed in direct contact with the earth. Tr. 11/13/07 pp. 39-40. The Tasker pit was visible in aerial photographs taken in the 1940's and 1950's, but it had been covered up by the 1960's. Shell Exs. 179-181; Tr. 11/14/07 p. 34; Tr. 11/15/07 pp. 156, 161.

In the 1970's, the Westgate subdivision of residential homes was built just

east of the Grimes tank battery. The nearest home was built within 50 yards of the tank battery. Tr. 11/13/07 pp. 39-40; Tr. 11/14/07 p. 37. Shell never notified the builder or the residents of the existence of the Tasker pit. Tr. 11/14/07 pp. 108-109; Tr. 11/26/07 pp. 71-72, 115. Some of the homes were built right on top of the old Tasker pit. Tr. 11/13/07 pp. 41-42, 220-221. Shell's historical documents did not mention anything about the approaching neighborhood. Tr. 11/14/07 pp. 68-69.

Shell decommissioned the Grimes tank battery in 1993. Despite the proximity of the Westgate neighborhood, Shell did not conduct an environmental assessment of the tank battery. Tr. 11/13/07 pp. 49, 52-53; Court Ex. C at 37, 46, 51-52. In 1997, Shell merged with Amoco and formed Altura Energy, Ltd. ("Altura"), which took over the Grimes lease. Tr. 11/13/07 pp. 50-51; Shell Ex. 143.

Shell did not conduct an environmental assessment of its former oil and gas operations on the Grimes lease before turning it over to Altura. Tr. 11/14/07 p. 68. Shell did not do any soil or groundwater evaluation or air monitoring. Court Ex. C at 46, 89; Court Ex. D at 95-98; Court Ex. E at 115. Shell never conducted any environmental assessment of the Tasker pit while it operated the Grimes lease. Tr. 11/13/07 p. 49. After a pit was covered, Shell did not conduct environmental reviews to assess possible risks to adjacent neighborhoods. Court Ex. C at 47-48.

In the words of one retired Shell foreman, “It wasn’t part of business, you know. We didn’t look back and do look-back studies, so to speak, for anything like that.” Court Ex. E at 115. Shell also never reported releases or leaks of toxic chemicals to New Mexico’s Oil Conservation Division (“OCD”). Tr. 11/14/07 pp. 53-54; Tr. 11/28/07 pp. 163-164.

In 1997, Altura was dismantling the Grimes tank battery when it found massive hydrocarbon contamination of the surrounding soil, extending all the way down into the aquifer 65 feet below ground level. Tr. 11/13/07 pp. 30, 44-45, 53, 67. While the tank battery was being dismantled, it was unusually dusty and foul-smelling in the Westgate subdivision. Tr. 11/16/07 pp. 15-18. The prevailing winds blew directly from the tank battery into the neighborhood. Tr. 11/15/07 p. 146; 11/16/07 p. 30. In an ensuing investigation, additional areas of contamination were found in other areas surrounding the Grimes tank battery. Tr. 11/13/07 pp. 45, 76-79; Tr. 11/14/07 pp. 43-44.

Later the same year, a real estate development company discovered the existence of the old Tasker pit while constructing new homes on Tasker Drive in the Westgate subdivision. Tr. 11/14/07 pp. 106-109, 146. The Tasker pit had a hard layer of hydrocarbon contaminants about 1-2 feet below the ground surface, varying in thickness from several inches to several feet. Below that layer, there was oily soil saturated with toxic hydrocarbons. Tr. 11/13/07 pp. 84-86, 124-128;

Tr. 11/28/07 pp. 164-167, 248-252. The contamination extended underneath the road to both sides of Tasker Drive. Tr. 11/13/07 p. 104. Shell purchased and demolished four of the homes on Tasker Drive that had been built on top of the old Tasker pit. Tr. 11/13/07 pp. 42-43, 128, 170.

OCD attempted to get Shell to clean up the contamination. Shell was reluctant and recalcitrant. Tr. 11/28/07 pp. 217, 219-220. OCD found a number of deficiencies in Shell's proposed remediation plans and required Shell to perform additional clean-up work. Tr. 11/13/07 p. 123. OCD finally approved Shell's remediation plan, with the proviso that its approval did not relieve Shell of responsibility for any remaining contamination or for compliance with federal, state, or local laws or regulations. Tr. 11/14/07 p. 72.

Shell conducted the remediation from 2000 through 2002. Tr. 11/13/07 p. 133. At the site of the Grimes tank battery, Altura had already excavated the contaminated soil to a depth of 14 feet. Shell did not remove any more of the contaminated soil in that area. Tr. 11/13/07 pp. 65-66. At the time of trial, the soil below the 14-foot depth was still contaminated with toxic hydrocarbons, as was the groundwater at a depth of 65 feet below surface level. Tr. 11/13/07 pp. 16-17, 46, 99-100, 168, 174; Tr. 11/14/07 p. 52.

At the site of the Tasker pit, Shell excavated the contaminated soil to a depth of 10 feet. However, there is still contaminated soil remaining below this

level. Tr. 11/13/07 pp. 87, 126-128. During excavation of the Tasker pit, Shell closed a portion of Tasker Drive and erected a massive tent around the area from March 2002 through October 2002. Tr. 11/13/07 pp. 57-59. Shell removed approximately 1,000 truckloads of contaminated earth from the Tasker pit area. Tr. 11/13/07 p. 160. Residents were adversely affected by the closure of the road, loud noises from heavy machinery and trucks, dirt and dust flying in the air, and foul smells. Tr. 11/16/07 pp. 45, 49-50; Tr. 11/26/07 pp. 81-82, 161-162, 228-229. The nine plaintiffs in the first trial group were long-term residents of homes on Tasker and Cobb who lived close to the contaminated areas. Plaintiffs' Ex. 191.

Shell cleaned the Tasker pit to a level of 2350 parts per million of Total Petroleum Hydrocarbons ("TPH") and it cleaned all other contaminated areas to a level of around 100 parts per million. Shell could have cleaned the Tasker pit to a level of 100 parts per million. Tr. 11/13/07 pp. 141-143; Tr. 11/14/07 pp. 73-74. Shell also chose a relatively inexpensive method of removing the hydrocarbon contamination from the groundwater, which will take decades to complete. Tr. 11/13/07 p. 150; Tr. 11/27/07 p. 200.

The chemicals found in the contaminated soil, groundwater, and ambient air from Shell's oil and gas operations are some of the most toxic chemicals known to man. They include chemicals that are known to cause cancer (such as benzene,

radium 226, and radium 228) and chemicals that are toxic to the nervous and/or respiratory systems (such as ethylbenzene and mercury). Tr. 11/27/07 pp. 144-148, 153-179. These and other toxic chemicals were found in the ambient air, soil, groundwater and/or house dust at or near the plaintiffs' homes. *See, e.g.*, Tr. 11/13/07 pp. 31-33, 46-47, 66-67, 88-96, 102-103, 106, 125-128, 164-165; Tr. 11/14/07 pp. 65-67, 71; Tr. 11/15/07 pp. 27-28, 32-33, 39-43, 52-59.

Plaintiffs suffered neurological and/or respiratory diseases that were caused or exacerbated by their exposure to these toxic chemicals. Tr. 11/27/07 pp. 214-243. They also suffered a diminution in the property values of their homes as a result of the highly publicized contamination in the neighborhood and their duty to disclose the contamination to prospective purchasers. Tr. 11/29/07 pp. 78-97, 147, 153-154. As discussed below, the district court refused to permit expert testimony that the plaintiffs suffered lupus and other autoimmune disorders as a result of the exposure and granted summary judgment on these claims.

2. Dr. Dahlgren's Excluded Expert Testimony and Epidemiological Study on Lupus and Other Immune Disorders

Dr. James Dahlgren is a professor of medicine at UCLA and an expert in occupational medicine, toxicology, and medical monitoring. He has over three decades of experience in evaluating, treating, monitoring, and predicting the effects of environmental exposure to toxic chemicals. 65 RP 20662-20663. Shell

did not dispute his qualifications to render opinions on causation.

Dr. Dahlgren formed his causation opinions and performed his evaluation using the standard methodology for determining causation set forth in the Federal Judicial Center's Reference Manual on Scientific Evidence.¹ 65 RP 20669-20670, 20733. This methodology entails: (1) an analysis of the plaintiff's medical condition through patient history, medical records, physical examination, and diagnostic testing; (2) an analysis of exposure information and the temporal relationship between exposure and illness; (3) a review of the medical and scientific evidence to determine whether the exposure can cause the illness (known as "general causation"); and (4) an application of the general knowledge to the specific circumstances of the case to determine whether the exposure did cause the illness, including consideration of other possible causes (known as "specific causation"). 62 RP 19870-19901. Dr. Dahlgren performed all of these steps in his causation analysis.² 65 RP 20669-20704.

¹The entire Reference Manual on Scientific Evidence (2d ed. 2000) is available online at the Federal Judicial Center's website. <http://www.fjc.gov>. The manual includes within it a Reference Guide on Epidemiology and Reference Guide on Toxicology. The manual and its reference guides are referred to in this brief as "Reference Manual."

²On April 9, 2003, plaintiffs filed in the district court Dr. Dahlgren's initial report and supporting scientific articles contained in 38 binders. With permission, plaintiffs have submitted these binders to this Court. The scientific articles on benzene are contained in Binders 2-11; the articles on mercury are contained in Binders 12-15; the articles on pristane are contained in Binder 17; the articles on

Dr. Dahlgren ultimately concluded that the plaintiffs' exposure to toxic chemicals from Shell's oil and gas operations was a significant contributing factor to their systemic lupus erythematosus (SLE or lupus) and other immune conditions. Specifically, Dr. Dahlgren concluded that the plaintiffs' immune symptoms were either caused or aggravated by exposure to a mixture of three chemicals found in crude oil which are capable of causing or contributing to lupus and other immune diseases: pristane, benzene, and mercury. 51 RP 16484; 53 RP 17131-17132; 65 RP 20663-20664, 20671-20675, 20699-20701.

Dr. Dahlgren first studied all 244 of the Westgate plaintiffs by means of a questionnaire and medical record review. For 112 of these plaintiffs, he and his team conducted a detailed history, physical examinations, and medical testing, including blood testing. For another randomly chosen subset of 43 plaintiffs, Dr. Dahlgren's team conducted lymphocyte studies. Dr. Dahlgren compared these results to an unexposed control/comparison group of 129 volunteers from Tehachapi, California, a town similar to Hobbs for all major variables except chemical exposures. 65 RP 20666; 63 RP 20293.

Dr. Dahlgren concluded that there was a "super excess" of lupus in the Westgate population. 65 RP 20689. There were 13 cases of lupus out of the 244

mixtures are contained in Binders 22-23; and the articles on crude oil are contained in Binder 25. The articles are arranged by alphabetical order within each subject.

plaintiffs. All 13 were residents of a two-block area near the Tasker pit. Lupus was 10 times more prevalent in the Westgate population than in the control group, as was rheumatic disease, another autoimmune disease. 65 RP 20733-20734.

In overall U.S. population studies, the prevalence of lupus varies from 14.6 to 50.8 cases per 100,000 population. 61 RP 19593; 63 RP 20298. Based on a total estimated population of 1490 residents, the prevalence of lupus in the Westgate subdivision was 872 per 100,000. 65 RP 20555, 20733. The Westgate plaintiffs also suffered from a higher incidence of other immune diseases and symptoms, including rheumatoid arthritis, Raynaud's phenomenon, inflammatory bowel disease, undifferentiated connective tissue disease, and mixed connective tissue disease. 65 RP 20664, 20733.

The lymphocyte testing of the Westgate population's immune system showed significant abnormalities as compared to the control group. The Westgate population had a significantly lower level of Natural Killer Cells (NKC) and significantly higher B-lymphocytes. 63 RP 20298. NKC lymphocytes are critical to a normally functioning immune system. 65 RP 20679-20680. A deficit of NKC is part of the pathogenesis of lupus in humans and mice. 65 RP 20680.

There was also a much higher prevalence of antinuclear antibodies ("ANA") in the Westgate group than in the control group. ANA is a screening test used for lupus. The elevated ANA results were indicative of an increased prevalence of

autoimmune disorder in the Westgate population. 53 RP 17353-17356; Tr. 8/24/04 pp. 252, 272-273. The fact that the Westgate residents had elevated ANA, reduced NKC lymphocytes, and increased B cells compared to the control group meant that their immune systems had been challenged and altered. 65 RP 20687-20688.

In December 2006, Dr. Gary R. Feldman, a rheumatologist, examined and evaluated the first group of nine trial plaintiffs. 64 RP 20406-20487. He found that they all demonstrated positive ANA, including those selected by Shell. The incidence of positive ANA in the general population is approximately 15-20 percent. The likelihood that all nine of these plaintiffs would demonstrate positive ANA as a random occurrence was infinitesimal. Dr. Feldman concluded that there must have been a common cause for all of these plaintiffs to demonstrate a positive ANA, presumably environmental exposure. 65 RP 20766-20768.

Dr. Feldman also concluded that four of the nine plaintiffs had lupus (Loretta Kautz, Sabrina Hudson, Franklin Volz, and Estella Acosta), a fifth had probable lupus (Judy Thompson), and a sixth had early symptoms of lupus diagnosed as undifferentiated connective tissue disease (Priscilla Melendez). The plaintiffs with immune diseases included several of those selected by Shell for inclusion in the first trial group. 64 RP 20406-20487; 65 RP 20689-20692.

The residents of Westgate were exposed to toxic contaminants from Shell's

oil and gas activities by inhaling them, ingesting them, and absorbing them through their skin. 65 RP 20678. All of the plaintiffs had long-term exposure to the contaminants as residents of Westgate. 65 RP 20676. All of the plaintiffs were exposed before their respiratory, neurological, and immunological symptoms developed or worsened. 65 RP 20694, 20739. In their interviews with Dr. Dahlgren, the plaintiffs reported that they had seen oil oozing out of their backyards and they smelled chemical odors frequently. 65 RP 20676, 20739; *see also* Tr. 11/16/07 p. 18; Tr. 11/26/07 p. 34; Tr. 11/26/07 p. 79; Tr 11/26/07 pp. 212-213.

Almost all of the plaintiffs reported improvement of their symptoms upon removal from the exposure or moving away from Hobbs. Tr. 11/27/07 pp. 180-181. Several experienced substantial improvement or disappearance of their lupus symptoms when they moved away. 64 RP 20436; 65 RP 20675-20676, 20690, 20694.

A number of scientific studies have reported cases of environmentally caused clusters of autoimmune disease. 65 RP 20686. A study by Kardestuncer found an elevated incidence of lupus among residents of a neighborhood in Gainesville, Georgia located near several industrial plants and built on a former landfill. The study found “that long-standing exposure to industrial emissions may be associated with an increased risk of lupus.” 61 RP 19591. The authors stated:

“The hypothesis that environmental toxins may induce lupus is consistent with the known ability of certain medications to do the same. There exists a plausible biological basis for such an association.” 61 RP 19594.

A 1992 study by Kilburn reported an excess of ANA and lupus in a group of people exposed environmentally to a mixture of solvents and heavy materials. This study demonstrated that autoimmune disease can occur from exposure to a relatively low level of environmental contaminants. 65 RP 20686. The Beyers study reported altered immune system function in a group of people exposed to a mixture of solvents and metal in a neighborhood in Massachusetts. 65 RP 20686. The chemical mixtures in these studies included chemicals very similar in their mode of action on the immune system to the chemicals in this case, namely they alter the T and B lymphocytes and disrupt the normal balance in the immune system. 65 RP 20687.

Benzene is a fundamental building block of petrochemicals. It is one of the most toxic chemicals known to man. Tr. 11/27/07 pp. 157-158; 65 RP 20695. Benzene is a component of BTEX, a hazardous substance found at levels above human health standards in the soil and groundwater at or near the Grimes tank battery and Tasker pit. Tr. 11/13/07 pp. 31-32, 101-103, 106, 125-127, 151-152. At the Grimes tank battery, there was BTEX contamination in the soil extending all the way down and into the aquifer 65 feet below the surface. Tr. 11/13/07 pp.

124-125; Tr. 11/27/07 p. 200; Tr. 11/28/07 pp. 158-159. Ambient air samples taken by plaintiffs' experts also indicated the presence of BTEX compounds. Tr. 11/15/07 p. 108, 112-113.

Scientific studies have conclusively shown that benzene causes harmful changes to the immune system. Dr. Dahlgren cited numerous animal and human studies supporting his opinion that exposure to benzene is detrimental to the immune system. 65 RP 20695-20696, 20705-20719, 20749-20750.

The Toxicological Profile for Benzene published by the Agency for Toxic Substances and Disease Registry ("ATSDR") states: "Based on information found in the literature, it is reasonable to expect that adverse immunological effects might occur in humans after inhalation, oral, or dermal exposure, since absorption of benzene through any route of exposure would increase the risk of damage to the immunological system. Studies show that the immunological system is susceptible to chronic exposure at low levels, so people living in and around hazardous waste sites who may be exposed to contaminated air, drinking water, soil, or food may be at an increased risk for adverse immunological effects." Shell Ex. 200 at 19.

Mercury is also present in crude oil. 63 RP 20301; 65 RP 20682. There were elevated levels of mercury in the ambient air at the Westgate subdivision. 63 RP 20296-20297, 20299; 65 RP 20682; Tr. 11/27/07 pp. 201-202.

Mercury is an established cause of autoimmunity in both humans and laboratory animals. 65 RP 20671. Dr. Dahlgren cited a textbook on lupus and numerous animal and human studies supporting his opinion that exposure to mercury can lead to immune system dysfunction and induce autoimmunity. 65 RP 20671 n.2 & 20683-20685 & 20705-20719. In particular, studies by Yoshida found that low-level chronic exposure to mercury is associated with lupus. In one study, Yoshida wrote: “In humans, mercury promotes a systemic lupus erythematosus-like syndrome” 65 RP 20684-20685.

Pristane is also a constituent of crude oil. In air monitoring tests conducted by Shell before the remediation, there were elevated levels of pristane found in the air in Hobbs. Tr. 11/15/07 pp. 27-30; Tr. 11/27/07 p. 175; 53 RP 17364-17376. Plaintiffs’ experts also found elevated levels of pristane in house dust samples collected from homes in the Westgate subdivision. 52 RP 16968; 62 RP 20255; Tr. 11/15/07 pp. 32-33, 33-38. Pristane is a component of TPH, a mixture of hydrocarbons that was found in the contaminated soil and soil vapor.³ 65 RP

³In an earlier ruling not at issue in this appeal, the trial court excluded evidence that pristane was found in the plaintiffs’ blood samples at a much higher rate than the control group. 56 RP 18339-18340. However, this ruling did not affect Dr. Dahlgren’s causation opinions because there was other evidence of pristane exposure. 65 RP 20672, 20761. In the same ruling, the trial court also excluded Dr. Dahlgren’s calculations of minimum risk levels for hydrogen sulfide and benzene and his cumulative exposure assessments for each plaintiff. 56 RP 18335-18339. However, this did not affect the summary judgment ruling on lupus and other autoimmune diseases, because the court ultimately rejected Shell’s

20681; Tr. 11/13/07 pp. 89, 115-128, 164-165.

Pristane is capable of damaging the immune system. 65 RP 20697.

In a number of published mouse studies, scientists have shown that injecting pristane into mice intraperitoneally induces autoantibodies uniquely characteristic of human lupus. 61 RP 19618, 19627, 19632; 65 RP 20697. A study by Yang also demonstrated that disruption of the NKC was part of the mechanism causing susceptible mice to develop lupus. The study stated: “Humans and mice with SLE have reduced numbers of CD1d-restricted NK T cells, suggesting a role for these cells in the regulation of SLE.” 65 RP 20680.

Scientific studies have shown that the mouse is a good model for studying human lupus. The response of the mouse to pristane and mercury closely parallels the immune reactions in humans. Studies by Yang and others demonstrate that scientists can extrapolate from mice to humans for mechanisms of lupus induction. The mouse is a widely accepted model for studying human lupus induction. 65 RP 20680-20681. A study by Rudofsky stated that the mouse model may be used to

argument that a causation expert must be able to determine the precise dose the plaintiffs were exposed to in order to render a causation opinion. 66 RP 21186 (“The Court does not make it’s [sic] decision based on Shell’s dose argument”); 67 RP 21264-21266 (finding New Mexico law does not require proof of precise level of exposure); *see also Clausen v. M/V NEW CARISSA*, 339 F.3d 1049, 1060 (9th Cir. 2003); *Hardyman v. Norfolk & Western Railway Co.*, 243 F.3d 255, 265-66 (6th Cir. 2001); *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 264 (4th Cir. 1999).

assess the role of environmental chemicals in causing lupus. 65 RP 20672.

Another autoimmune disease very similar in causation to lupus is called scleroderma or systemic sclerosis (SS). A number of studies have shown elevated levels of SS in individuals who have been exposed to organic solvents, benzene, and paint thinners. 65 RP 20698-20699.

Dr. Dahlgren emphasized that his causation opinions on immune diseases were based on plaintiffs' exposure to a *mixture* of immunotoxic chemicals. 65 RP 20699. There is an additive or synergistic effect when someone is exposed to multiple immunotoxic chemicals at the same time. 65 RP 20699-20701. Multiple chemicals interacting with each other will usually increase their toxicity. When the chemicals are toxic to the same organ system, they will exert an effect at a lower dose. 65 RP 20702. Dr. Dahlgren relied on an EPA guideline and three scientific studies to illustrate his opinion on the additive or synergistic effect. 65 RP 20699-20704.

In February 2007, Dr. Dahlgren published the results of his own study of the Westgate plaintiffs in a peer-reviewed journal called Environmental Health. The top environmental epidemiologists and toxicologists in the world edit this journal. They accepted the paper for publication after a rigorous review process. 65 RP 20664, 20669, 20688.

As published, Dr. Dahlgren's paper reported on the increased incidence of

lupus, rheumatic disease, and other immune symptoms in the Westgate plaintiffs, and it described their exposure to benzene, mercury, pristane, and other chemicals from the oil and gas operations. 63 RP 20296-20300. The paper discussed the existing scientific evidence on the association between immune diseases and exposure to these chemicals. 63 RP 20300-20302. It concluded: “Despite some possible limitations, the findings in this study are compelling. The hypothesis that environmental toxins may induce lupus is consistent with the known ability of certain medications to cause SLE. There exists a plausible biological basis for such an association.... This study adds to the evidence implicating pristane and mercury in the development of lupus and generates questions as to the possible synergistic effects of organic solvents including pristane and phytane, mercury and other exposures. Further research is needed to determine the mechanism of effect for each of the suspected causal exposures and to assess possible synergy between exposures.” 63 RP 20303.

3. Juror Bias and Misconduct

At the beginning of trial, the court instructed the jury with UJI 13-110, NMRA, which allows jurors to discuss the evidence among themselves during trial, but only in the jury room when all of the jurors are present. Tr. 11/7/07, p. 167:19-24. This instruction states in relevant part: “The kinds of things you may discuss include the witnesses, their testimony, and exhibits. Be careful, however,

not to make up your minds or try to convince others about the final outcome of the case until you have heard everything - all the evidence, the final instructions of law, and the attorneys' closing arguments. It would be unfair to the parties if you attempt to decide the outcome of the case before you begin final deliberations.... It is important that you keep an open mind and not decide any part of the case until the entire case has been completed and submitted to you." UJI 13-110, NMRA.

During trial, the court repeatedly admonished the jury to keep an open mind, not to decide the outcome of the case before final deliberations, and not to form any fixed opinions about the case until it was finally submitted to them after all the evidence was presented and the closing arguments were finished. Tr. 11/8/07, pp. 6:16-20, 105:4-9; Tr. 11/14/07, p. 104:18-20; Tr. 11/15/07, pp. 120:5-7, 210:7-9; Tr. 11/16/07, p. 83:1-6; Tr 11/28/07, p. 316:11-13.

The jurors wasted no time violating these admonitions. On the very first day of trial, juror Christine Fresso said to the other jurors, "Why are we here? This is a waste of our time." 68 RP 21779 ¶5, 21818 ¶5, 21821 ¶5, 21825 ¶4. Several of the other jurors said the same thing. 68 RP 21821 ¶5. On the third day, Fresso told the others "that the Court should put us into deliberation because 'we know what the outcome is.'" 68 RP 21779 ¶6, 21818 ¶6.

At every single break in the trial, Fresso and another juror, Terri Chrisman, would lead a discussion in which they would criticize and refute the plaintiffs'

evidence and reinforce and exaggerate the themes asserted by the defense. 68 RP 21779 ¶7, 21818 ¶7, 21821 ¶6. Some of these discussions took place when other jurors were out of the jury room. 68 RP 21779 ¶7, 21818 ¶7. Fresso said she had worked around lawyers and the rest of the jurors should listen to her. 68 RP 21779 ¶4, 21818 ¶4, 21821 ¶4. Chrisman was a nurse who told the others she knew about doctors and they should listen to her regarding their testimony. 68 RP 21779 ¶8, 21818 ¶8, 21822 ¶7. Fresso and Chrisman complained that they were tired of hearing the same evidence and they just wanted to go home. 68 RP 21780 ¶16, 21819 ¶16, 21823 ¶12, 21826 ¶11, 21829 ¶7.

Chrisman repeatedly attempted to persuade the other jurors that the plaintiffs had no case and Shell should win. She told the other jurors that all of the plaintiffs' symptoms were the result of side effects of medication. 68 RP 21780 ¶14, 21819 ¶14, 21822 ¶10, 21826 ¶9. She said that plaintiff Socorro Telles was *not* suffering from illnesses caused by the contamination as identified by the doctors. She claimed she knew from past experience that Telles was suffering from some other illness and just needed some medication. 68 RP 21780 ¶10, 21819 ¶10, 21825 ¶6, 21828 ¶4. She said she also knew from her past experience that the only reason the health department went out to the neighborhood was because of tuberculosis, and that tuberculosis explained the plaintiffs' symptoms. 68 RP 21780 ¶12, 21819 ¶12, 21822 ¶9, 21826 ¶8. Chrisman told the other jurors

that if they made a decision against a major oil company, other oil companies would pull out. 68 RP 21780 ¶13, 21819 ¶13.

Other statements made by jurors Fresso and Chrisman during the trial include the following:

Plaintiff Sabrina Hudson was considered to be of loose morals because she had to move back in with her parents when she became pregnant out of wedlock. 68 RP 21780 ¶9, 21819 ¶9, 21825 ¶5.

Plaintiff Frank Volz was said to be gay. 68 RP 21780 ¶9, 21819 ¶9, 21822 ¶8, 21825 ¶5.

After testimony concerning Dr. Getta Lele was presented, one juror stated that people went to Dr. Lele because she would say anything, and that this juror knew of two other persons who went to Dr. Lele with false symptoms. 68 RP 21780 ¶11, 21819 ¶11, 21826 ¶7, 21828-29 ¶5.

Chrisman told the other jurors that Plaintiffs' doctor, Dr. Lieber, was lying and the only way to diagnose asthma and bronchitis was with a chest x-ray. 68 RP 21780 ¶17, 21819 ¶17, 21823 ¶13, 21826 ¶12.

Chrisman told the other jurors that Shell gave the city Shell Park and that she knew Shell had the practice of donating land. 68 RP 21781 ¶18, 21820 ¶18.

Fresso told the other jurors that a witness, Evelyn Rising, was lying. Fresso stated that, contrary to Rising's testimony, Rising told her stepson to remove a carpet from her home, which was vacated and destroyed in Shell's remediation. 68 RP 21781 ¶19, 21820 ¶19, 21823 ¶14, 21826 ¶13.

There was a picture of one of the plaintiff's homes with a red Cadillac out front. Even though plaintiff testified it was not her car, and that her car was in the garage, Fresso stated that in fact, it was the plaintiff's car and plaintiffs obviously had more money than they let on. 68 RP 21781 ¶20, 21820 ¶20, 21823 ¶15, 21826 ¶14.

Following a month-long trial with hundreds of exhibits and extraordinarily complex scientific issues, the jury returned a defense verdict after only one and a half hours of deliberations. Tr. 12/6/07 p. 187:20-23; Tr. 12/7/07 p. 4:22-7:20; 69 RP 22065. Chrisman was the foreperson. 68 RP 21740.

Later the same day, alternate juror Danny Rawlinson (who did not participate in the final deliberations) contacted plaintiffs' counsel and informed them of the jury's conduct during trial. 68 RP 21762 ¶5; Tr. 2/15/08 p. 39:13-40:7. Shortly thereafter, plaintiffs filed a motion for new trial. 68 RP 21761-78. The motion was supported by Rawlinson's affidavit and later supplemented by the affidavits of three regular jurors (Hendricks, Enriquez, and Betty Lozoya)⁴. 68 RP 21779-81, 21818-30. The motion argued that a new trial should be granted due to juror bias and juror misconduct, including prejudgment of the case, violations of the jury instructions, premature deliberations on the outcome, and injection of extraneous information. 68 RP 21761-62, 21774-76, 21809-10.

⁴The affidavits of jurors Enriquez and Hendricks also described additional matters that occurred during formal deliberations at the end of trial. Paragraph 15 of the Enriquez affidavit stated that Fresso and Chrisman bullied her into voting for the defense. 68 RP 21827 ¶15. Paragraph 16 of the Hendricks affidavit stated that he wanted to review the evidence during the final deliberations, but Fresso told him, "No, we have already decided." Fresso said "we have already decided in this trial and that is that." 68 RP 21823 ¶16. Plaintiffs do not rely on these portions of the affidavits in this appeal, except to the extent that paragraph 15 of the Enriquez affidavit describes bullying that occurred during trial before the final deliberations.

Shell contacted jurors Fresso and Chrisman and spoke to them about the allegations of misconduct. 68 RP 21786. However, Shell presented no affidavits from Fresso or Chrisman or anyone else in opposition to the motion for new trial. 68 RP 21785-99; 69 RP 22038-52.

On March 19, 2009, the district court issued a written decision denying the motion for new trial. 69 RP 22064-95.

ARGUMENT

POINT I

THE DISTRICT COURT ERRED BY EXCLUDING DR. DAHLGREN'S CAUSATION OPINIONS AND EPIDEMIOLOGICAL STUDY ON LUPUS AND OTHER IMMUNE CONDITIONS AND BY GRANTING SUMMARY JUDGMENT ON THESE CLAIMS

A. Standard of Review

A trial court's decision to exclude scientific testimony under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993) is reviewed for abuse of discretion. *State v. Alberico*, 116 N.M. 156, 169, 861 P.2d 192 (1993). This standard "is not tantamount to rubber-stamping the trial judge's decision" and requires "meaningful analysis of the ... scientific testimony to ensure that the trial judge's decision was in accordance with the Rules of Evidence and the evidence in the case." *Id.* at 170. "Given the capabilities of jurors and the liberal thrust of the rules of evidence, ... any doubt regarding the admissibility of scientific evidence

should be resolved in favor of admission, rather than exclusion.” *Lee v. Martinez*, 2004-NMSC-027, ¶16, 136 N.M. 166, 172, 96 P.3d 291, 297.

A summary judgment ruling is subject to de novo review. *Beggs v. City of Portales*, 2009-NMSC-023, ¶10, 146 N.M. 372, 210 P.3d 798.

B. Preservation of Error

Plaintiffs preserved these issues for appellate review. 62 RP 19935-19954; 63 RP 20119-20176; 66 RP 21166-21179.

C. Dr. Dahlgren’s Causation Opinions and Epidemiological Study Were Based on a Scientifically Reliable Foundation and Methodology

In *State v. Alberico*, the New Mexico Supreme Court adopted the *Daubert* standard for admissibility of scientific testimony and rejected the more restrictive test of “general acceptance” in the scientific community under *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). *State v. Alberico*, 116 N.M. at 165-67. The *Daubert* standard requires the trial judge to make “a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592-93.

“[T]he pertinent inquiry must focus on the proof of reliability of the scientific technique or method upon which the expert testimony is premised.” *State v. Alberico*, at 168. “The focus ... must be solely on principles and

methodology, not on the conclusions they generate.” *State v. Torres*, 1999-NMSC-010, ¶15, 127 N.M. 20, 976 P.2d 20. “[T]he test under *Daubert* is not the correctness of the expert’s conclusions but the soundness of his methodology.” *Primiano v. Cook*, ___ F.3d ___, 2010 WL 788906, at *4 (9th Cir. 2010) (citation omitted).

One aspect of the *Daubert* analysis “is whether expert testimony proffered in the case is sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute.” *State v. Downey*, 2008-NMSC-061, ¶30, 145 N.M. 232, 195 P.3d 1244 (citation omitted). “As the United States Supreme Court observed in *Daubert*, this requirement ‘has aptly been described by Judge Becker as one of ‘fit.’ 509 U.S. at 591, 113 S.Ct. 2786. The primary inquiry is whether the scientific methodology ‘fits’ the facts of the case and thereby proves what it purports to prove.” *Id.*

“[N]othing in ... *Daubert*, or its progeny requires ‘that an expert resolve an ultimate issue of fact to a scientific absolute in order to be admissible.” *Kudabeck v. Kroger Co.*, 338 F.3d 856, 862 (8th Cir. 2003) (quoting *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 156 (3d Cir. 1999)). “[I]t would be unreasonable to conclude that the subject of scientific testimony must be ‘known’ to a certainty; arguably, there are no certainties in science.” *Daubert*, 509 U.S. at 590. “The only question relevant to the admissibility of scientific evidence is whether it is sufficiently

reliable and relevant to assist the jury's determination of a disputed issue."

Bonner v. ISP Technologies, Inc., 259 F.3d 924, 929 (8th Cir. 2001). "Although it is common that medical experts often disagree on diagnosis and causation, questions of conflicting evidence must be left for the jury's determination." *Hose v. Chicago Northwestern Transp. Co.*, 70 F.3d 968, 974 (8th Cir. 1996).

A trial court may "not exclude [expert] testimony simply because the conclusion was 'novel' if the methodology and the application of the methodology were reliable." *Heller*, 167 F.3d at 153. "Where an expert otherwise reliably uses scientific methods to reach a conclusion, lack of textual support may 'go to the weight, not the admissibility' of the expert's testimony." *Knight v. Kirby Inland Marine, Inc.*, 482 F.3d 347, 354 (5th Cir. 2007). "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert*, 509 U.S. at 596.

Applying these principles, the district court abused its discretion by excluding Dr. Dahlgren's causation opinions and his epidemiological study on lupus and other immune diseases. Dr. Dahlgren followed the standard methodology for determining general and specific causation as set forth in the Reference Manual. 62 RP 19870-19901; 65 RP 20669-20704. Shell has never disputed that this is a reliable scientific method for determining causation. Dr.

Dahlgren's use of this methodology "fit" because it was "sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute." *State v. Downey*, at ¶30.

Nor was there "too great an analytical gap between the data and the opinion proffered." *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1997). Dr.

Dahlgren relied on a vast body of evidence to support his causation opinions. As described above, this evidence included: (1) published animal and human studies and medical textbooks on the link between benzene, mercury, and pristane and immune diseases including lupus; (2) other studies on the association between similar types of environmental toxins and lupus and other immune diseases; (3) the biological plausibility of a causal link; (4) the temporal relationship between plaintiffs' exposure and their immune diseases, and the cessation or improvement of their immune conditions upon removal from the exposure; and (5) the absence of any other logical explanation for the highly unusual cluster of lupus and other abnormal immune findings in the Westgate population. 65 RP 20663-20762.

Taken in its totality, this evidence was easily enough to support Dr. Dahlgren's causation opinions. Even in the absence of precise exposure data, "a temporal relationship between exposure to a substance and the onset of a disease or a worsening of symptoms can provide compelling evidence of causation." *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 265 (4th Cir. 1999). Likewise,

the Reference Manual states that when “eliminating exposure reduces the incidence of disease, this factor strongly supports a causal relationship.” 60 RP 19368. Furthermore, even when there is no “scientific certainty” as to the precise causal mechanism, “the existence of a biologically plausible mechanism bolsters the reliability of the proffered opinions on causation.” *In re Fosamax Products Liability Litigation*, 645 F. Supp. 2d 164, 183 (S.D.N.Y. 2009).

The absence of any other rational explanation for the plaintiffs’ excessively high incidence of immune diseases and abnormal immune symptoms is also probative. The only relevant thing these plaintiffs had in common was their residence in Westgate and their exposure to toxic chemicals from the nearby oil and gas operations. Shell offered no other reason why the residents of Westgate would have suffered such a disproportionately high incidence of lupus and other immune diseases and symptoms, or why their symptoms would suddenly diminish upon moving away from the neighborhood.

The district court’s criticisms of Dr. Dahlgren went to the weight of his testimony, not its admissibility. First, the district court found that Dr. Dahlgren’s published study had only “limited value as a basis for a causal connection opinion” because it was merely a “cross-sectional study.” 66 RP 21185. The court cited a sentence in the Reference Manual stating that “[c]ross-sectional studies are infrequently used when the exposure of interest is an environmental

toxic agent.” 60 RP 19362, 66 RP 21186. As defined in the Reference Manual, a “cross-sectional study” is one in which “individuals are interviewed or examined, and the presence of both the exposure of interest and the disease of interest is determined in each individual at a single point in time.” 60 RP 19362. The usual problem with such a study for determining causation is that “it is not possible to establish the temporal relation between exposure and disease—that is, that the exposure preceded the disease, which would be necessary for drawing any causal inference.” 60 RP 19362.

In this case, however, Dr. Dahlgren *was* able to determine that the exposure preceded the diseases through his interviews of the plaintiffs, their residence histories, and reviews of their medical records. Dr. Dahlgren specifically concluded that all of the plaintiffs were exposed *before* their illnesses. 65 RP 20694 ¶38; 65 RP 20739 ¶16. Thus, Dr. Dahlgren’s analysis did not suffer from the usual limitation of a cross-sectional study.

Furthermore, Dr. Dahlgren’s study *was not* just a cross-sectional study. In addition to interviewing the plaintiffs and conducting medical examinations and diagnostic testing, Dr. Dahlgren compared the results to an unexposed control group. 65 RP 20738 ¶14. Although the exact label is unimportant, this is best characterized as a retrospective cohort study. The Reference Manual defines a “cohort study” as a comparison of disease rates between an exposed group and an

unexposed group. 60 RP 19359. It goes on to state: “Sometimes retrospective cohort studies are conducted, in which the researcher gathers historical data about exposure and disease outcome of the exposed cohort.” 60 RP 19359 n.19; *see also* 60 RP 19299 (Dr. Dahlgren acknowledges “you could call our study a retrospective cohort study”); 61 RP 19591 (similar type of study referred to in a published scientific article as “both a retrospective cohort study and a cross-sectional study”).

There is nothing scientifically unreliable about using this type of study to determine causation. The critical point is that, unlike a pure cross-sectional study, there *was* a control group for comparison. *See* Reference Manual at 95 (“Was there a control group? If not, the study has little to say about causation.”). The trial court itself acknowledged: “The study shows a difference in lupus diagnosis in two different populations, one exposed, one not exposed.” 66 RP 21187. Thus, the study was relevant to support Dr. Dahlgren’s causation opinions. The fact that the study was published and subject to peer review further indicates that it is a reliable basis for determining causation. *Daubert*, 509 U.S. at 593-94.

The district court also criticized Dr. Dahlgren for relying on mouse studies on the effects of pristane. 66 RP 21185. However, the trial court’s criticism ignores the fact that Dr. Dahlgren also relied on *human* studies involving the immunological effects of benzene and mercury. 65 RP 20671 n.2, 20683-20685,

20695-20696, 20705-20719, 20749-20750. Dr. Dahlgren's causation opinions were based on plaintiffs' exposure to the *mixture* of these immunotoxic chemicals, not just pristane in isolation. 65 RP 20699-20704.

Furthermore, Dr. Dahlgren explained in detail (with citations to scientific articles) why the mouse studies were a scientifically valid model for human lupus despite the high dosages of pristane injected into the mice. 65 RP 20672, 20680-20681. Notably, the authors of the mouse studies themselves suggested that their results were "relevant to the pathogenesis of autoantibody production in humans" and they concluded "that environmental exposure to pristane could be involved in the pathogenesis of some cases of human SLE." 61 RP 19632.

Because these mouse studies were published and peer-reviewed, they were a reliable foundation for Dr. Dahlgren's opinions, even if they did not conclusively prove causation standing on their own. "[T]oxicology models based on animal studies (in vivo) may be used to determine toxicity in humans." Reference Manual at 345. "[B]ecause it is often unethical to experiment on humans by exposing them to known doses of chemical agents, animal toxicological evidence often provides the best scientific information about the risk of disease from a chemical exposure." *Id.* at 405.

In *Metabolife Intern., Inc. v. Wornick*, 264 F.3d 832 (9th Cir. 2001), the Ninth Circuit found that the district court had abused its discretion by excluding

animal studies solely due to its concerns about extrapolating from the effects of high-dose exposure of mice and rats to low-dose usage by humans. *Id.* at 842-43. The Ninth Circuit ruled that “animal studies are not per se inadmissible and should be subjected to substantive analysis, just like other scientific evidence.” *Id.* at 842. “Difficulties with extrapolation *might* render the animal studies unreliable under *Daubert*; however, such a determination must be made on problems inherent to the studies themselves, *not a general apprehension at inter-species and inter-dosage extrapolation.*” *Id.* at 843 (emphasis added). Here, as in *Metabolife*, the district court improperly rejected Dr. Dahlgren’s reliance on mouse studies based solely on its general apprehension about inter-species and inter-dosage extrapolation.

Most fundamentally, the district court abused its discretion by ruling that Dr. Dahlgren could not render a causation opinion without pointing to conclusive evidence of general causation in the published literature. 66 RP 21184-21188. For example, the court ruled that Dr. Dahlgren’s study was “relevant only if other reliable scientific evidence exists to show that there is general causation between the mixture of identified chemicals and Lupus.” 66 RP 21185. The court also criticized the study itself because it did not actually establish “general causation.” 66 RP 21187. However, the scientific evidence need not independently establish general causation for a qualified expert to render a relevant and scientifically reliable opinion on the subject. *Heller*, 167 F.3d at 154-156.

In fact, there is no requirement that a causation expert must even rely on published studies or epidemiology to opine that a particular agent caused a particular illness. *Kudabeck*, 338 F.3d at 862; *Amorgianos v. National R.R. Passenger Corp.*, 303 F.3d 256, 266-67 (2d Cir. 2002); *Rider v. Sandoz Pharmaceuticals Corp.*, 295 F.3d 1194, 1198-99 (11th Cir. 2002); *Bonner*, 259 F.3d at 929. “To so hold would doom from the outset all cases in which the state of research on the specific ailment or on the alleged causal agent was in its early stages” *Heller*, 167 F.3d at 155. “[I]n some instances well-grounded but innovative theories will not have been published Some propositions, moreover, are too particular, too new, or of too limited interest to be published.” *Daubert*, 509 U.S. at 593; *accord Primiano*, 2010 WL 788906, at *4..

In sum, Dr. Dahlgren’s causation opinions and his published study on lupus and other immune diseases were based on a scientifically reliable methodology and foundation and were relevant and admissible. The district court abused its discretion by excluding this evidence.

D. The Partial Summary Judgment Order Must Be Reversed

The district court’s partial summary judgment ruling on lupus and other autoimmune diseases was based solely on its erroneous exclusion of Dr. Dahlgren’s causation opinions and his published study on these diseases. 67 RP 21260-21267. Because Dr. Dahlgren’s opinions and study were admissible, there

was a genuine issue of fact precluding summary judgment as to causation of lupus and other autoimmune diseases. Accordingly, the judgment must be reversed as to plaintiffs Loretta Kautz, Sabrina Hudson, Franklin Volz, Estella Acosta, Judy Thompson, and Priscilla Melendez, the plaintiffs in the first trial group who were diagnosed with autoimmune diseases and erroneously prevented from presenting these claims to the jury.⁵ See, e.g., *McNeill v. Rice Engineering and Operating, Inc.*, 2003-NMCA-078, ¶¶1, 9-10, 42, 133 N.M. 804, 70 P.3d 794 (reversing grant of partial summary judgment after a trial on other claims and remanding for further proceedings on the reversed claims).

POINT II

THE DISTRICT COURT ABUSED ITS DISCRETION BY DENYING THE MOTION FOR NEW TRIAL AS TO ALL PLAINTIFFS

A. Standard of Review

The denial of a motion for new trial based on jury misconduct is reviewed under the abuse of discretion standard. *State v. Mann*, 2002-NMSC-001, ¶17, 131 N.M. 459. However, the proper interpretation of Rule 11-606(B), NMRA, the rule governing admissibility of juror testimony, is subject to de novo review. *Shadoan v. Cities of Gold Casino*, 2010-NMCA-002, ¶6.

⁵On April 22, 2010, appellants filed an unopposed motion to substitute plaintiff Estella Acosta as a party-appellant in lieu of plaintiff Josie Alvarez, who was mistakenly named as one of the appellants in the notice of appeal.

B. Preservation of Error

Plaintiffs have preserved this issue for appellate review. 68 RP 21761-21781, 21803-21830.

C. The Juror Affidavits Were Admissible

In the district court, Shell argued that the juror affidavits were inadmissible under Rule 11-606(B), NMRA, which provides: “Upon an inquiry into the validity of a verdict ..., a juror may not testify as to any matter or statement occurring during the course of the jury's deliberations or to the effect of anything upon that or any other juror's mind or emotions as influencing the juror to assent to or dissent from the verdict ... or concerning the juror's mental processes in connection therewith, except that a juror may testify on the question whether extraneous prejudicial information was improperly brought to the jury's attention or whether any outside influence was improperly brought to bear upon any juror.”

By its plain language, however, Rule 11-606(B) applies only to statements “occurring during the course of the jury’s deliberations ...” *Ibid.* Thus, the rule does *not* bar evidence of discussions between jurors that take place during the trial prior to the jury’s formal deliberations. *Goodloe v. Bookout*, 1999-NMCA-061, ¶17, 127 N.M. 327 (1999). In *Goodloe*, an alternate juror submitted an affidavit describing the jurors’ discussions of the case during trial, including statements made during breaks and recesses. *Id.* at ¶16. This Court found the affidavit

admissible under Rule 11-606(B) and held that the rule “permit[s] the reception of testimony by jurors regarding pre-deliberation discussions of the case.” *Id.* at ¶17; *see also State v. Cherry*, 20 S.W.3d 354, 357 (Ark. 2000) (holding that nearly identical Arkansas rule did not bar juror testimony regarding “discussions that occurred prior to formal deliberations”).

Although *Goodloe* was decided before the Supreme Court adopted UJI 13-110, NMRA in 2005, this instruction did not alter the scope or meaning of Rule 11-606(B). UJI 13-110 allows jurors to discuss the evidence during a civil trial, but it does not define such discussions to be part of “the jury’s deliberations” within the meaning of Rule 11-606(B). On the contrary, UJI 13-110 states that the jurors may *not* make up their minds, may *not* decide the “final outcome” of the case, may *not* “decide any part of the case,” and may *not* try to “convince others about the final outcome” until the “final deliberations” after presentation of “all the evidence, the final instructions, and the attorney’s closing arguments.” UJI 13-110, NMRA. Thus, the instruction itself distinguishes between discussions of the evidence during trial and final deliberations to decide the outcome at the conclusion of trial.

Because Rule 11-606(B) applies only to “the jury’s deliberations,” it does not bar testimony about juror discussions that occurred during the course of trial when the jury was prohibited from deliberating the outcome. *Goodloe*, ¶17; *see*

also *Golden Eagle Archery, Inc. v. Jackson*, 24 S.W.3d 362, 371 (Tex. 2000) (holding nearly identical Texas rule did not bar testimony about juror conversation during trial break because Rule 606(b) “use[s] the term ‘deliberations’ as meaning formal jury deliberations-when the jury weighs the evidence to arrive at a verdict”). The Supreme Court did not overrule *Goodloe* or alter the meaning of the word “deliberations” in Rule 11-606(B) when it adopted UJI 13-110.

Shell’s broad interpretation of Rule 11-606(B) would undermine the Supreme Court’s careful distinction between juror discussions of the evidence during trial and formal deliberations at the conclusion of trial. Numerous courts have recognized that allowing jurors to discuss the *outcome* of a case during trial poses a potential threat to the integrity of the judicial process. A juror who expresses a fixed opinion prematurely will likely be resistant to changing her mind if contradicted by subsequent evidence, and there is a risk that the juror will decide the final outcome without the benefit of all the evidence, the jury instructions, and the collective deliberations of the jury as a whole. For precisely these reasons, a number of courts in other jurisdictions have held that instructions allowing jurors to discuss a case during trial violate the right to an impartial jury. *See, e.g., People v. Flockhart*, ___ P.3d ___, 2009 WL 4981910, *3-8 (Col. App. 2009); *State v. McCleskey*, 69 P.3d 111, 113-14 (Idaho 2003); *Commonwealth v. Kerpan*, 508 Pa. 418, 421-24, 498 A.2d 829, 830-832 (Penn. 1985); *State v. Washington*, 182

Conn. 419, 438 A.2d 1144 (Ariz. 1980); *Winebrenner v. United States*, 147 F.2d 322, 327 (8th Cir. 1945).

Although these were all criminal cases, civil litigants also have the constitutional right to a fair and impartial jury. N.M. Const., Art. 2, § 12; *City of Clovis v. Ware*, 96 N.M. 479, 481, 632 P.2d 356, 358 (1981). As the facts of this case highlight, allowing jurors to discuss evidence during a *civil* trial poses an equally grave risk that the jurors will prejudge the case before hearing all of the evidence, the jury instructions, and the closing arguments. “One traditional component of fairness is that a juror remain open-minded and not form a fixed opinion on the case until the jury commences deliberations.” *State v. Rojas*, 177 Ariz. 454, 457, 868 P.2d 1037, 1040 (Ariz. App. 1993).

UJI 13-110 attempts to maintain this component of fairness by instructing that the jurors may not discuss or decide the final outcome until formal deliberations at the conclusion of trial. However, Shell’s broad interpretation of Rule 11-606(B) would effectively prevent courts from enforcing this limitation even when there has been a blatant violation by jurors who prejudged the case. By Shell’s reasoning, Rule 11-606(B) would place a jury’s premature decision on the final outcome of the case completely beyond the reach of the courts to review or remedy. There is no indication that the Supreme Court intended such a result when it adopted UJI 13-110.

D. The Jurors Committed Misconduct by Prejudging the Case, Exhibiting Bias Against the Plaintiffs, and Violating the Jury Instructions

The uncontradicted juror affidavits establish that Fresso and Chrisman led an unrelenting campaign to orchestrate a defense verdict from the very first day of trial. Within the first three days of trial, Fresso was already telling the others that the trial was “a waste of our time” and “the Court should put us into deliberation because ‘we know what the outcome is.’” 68 RP 21779 ¶¶5-6, 21818 ¶¶5-6, 21821 ¶5, 21825 ¶4. Every single day during every break in the trial, Fresso and Chrisman led a discussion in which they would criticize and refute the plaintiffs’ evidence and reinforce and exaggerate the themes asserted by the defense. 68 RP 21779 ¶7, 21818 ¶7, 21821 ¶6.

Fresso’s statements that the trial was “a waste of our time” and “the Court should put us into deliberation because ‘we know what the outcome is’” demonstrated an obvious bias, prejudgment of the case, and inability to keep an open mind. *See Oswald v. Bertrand*, 249 F. Supp. 2d 1078, 1099 (E.D. Wis. 2003) (“A juror who holds the opinion that a defendant is guilty and a trial a waste of time is biased.”). “For a juror to prejudge the case is serious misconduct.” *Clemens v. Regents of the University of California*, 20 Cal.App.3d 356, 361, 97 Cal.Rptr. 589, 592 (Cal. Ct. App. 1971). By prejudging the outcome within the first few days of trial, Fresso violated the court’s repeated admonitions to keep an

open mind and not to reach any fixed opinions until the conclusion of trial. Similarly, by attempting to persuade other jurors while the trial was underway, Fresso violated the court's instruction not to "try to convince others about the final outcome of the case" until final deliberations. UJI 13-110, NMRA. Jury misconduct includes any "activity by members of the jury which is inconsistent with the instructions by the court." *Mann*, ¶22.

Chrisman's conduct also demonstrated bias, prejudgment of the case, and inability to comply with the jury instructions. Chrisman told the other jurors during trial that "all the Plaintiffs' symptoms were the results of side effects of medication" and that "Telles was not suffering from the illnesses caused by the contamination as identified by the doctors." 68 RP pp. 21779-80 ¶¶1-2, ¶¶7-10, ¶14, pp. 21818-19 ¶¶1-2, ¶¶7-10, ¶14, p. 21822 ¶10, p. 21825 ¶6, p. 21826 ¶9, p. 21828 ¶4. Chrisman also "told the other jurors that if they made a decision against a major oil company other oil companies would pull out." 68 RP 21780 ¶13, 21819 ¶13. The only reasonable interpretation of these comments is that Chrisman had already made up her mind the plaintiffs had suffered no injury from the contamination, and she was trying to convince the other jurors to return a verdict for Shell. This was a blatant violation of UJI 13-110 and the trial court's admonitions.

Many of the other comments made by Fresso and Chrisman confirm their

bias against the plaintiffs. They accused plaintiff Sabrina Hudson of having “loose morals” and plaintiff Frank Volz of being “gay.” 68 RP 21780 ¶9, 21819 ¶9, 21825 ¶5. They also relied on extrajudicial facts not supported by any trial evidence. For example, Chrisman told the other jurors “the only reason the health department went out to the neighborhood was because of tuberculosis, and that tuberculosis explained the Plaintiffs’ symptoms.” 68 RP 21780 ¶12, 21819 ¶12, 21822 ¶9, 21826 ¶8. As the district court found, these comments were “nonsensical” and “in direct contravention to” the trial testimony. 69 RP 22091 (citing Tr. 11/28/07 pp. 223-29). Chrisman also stated that “she knew Shell had the practice of donating land” and that Dr. Lieber “was lying and the only way to diagnose asthma and bronchitis was with a chest x-ray.” 68 RP 21780 ¶17, 21781 ¶18, 21819 ¶17, 21820 ¶18, 21823 ¶13, 21826 ¶12. Once again, there was no evidence to support these assertions. In their efforts to orchestrate a defense verdict, these jurors simply fabricated facts harmful to the plaintiffs and favorable to Shell. Shell could not have done any better if it had hand-picked them to serve on the jury.

In determining impartiality of jurors, New Mexico courts “focus on the presence or absence of evidence demonstrating that they were unwilling or unable to decide the case based on the evidence adduced at trial and the instructions given by the trial court ...” *State v. Rackley*, 2000-NMCA-027, ¶11, 128 N.M. 761.

Based on the uncontradicted juror affidavits, Fresso and Chrisman were clearly unable to decide the case based solely on the evidence presented and instructions given at trial. The record reveals that they were hopelessly biased against the plaintiffs from day one. For these reasons, the record contains unrefuted evidence of serious jury misconduct and juror bias.

E. The Juror Misconduct and Juror Bias Require a New Trial

The bias of jurors Fresso and Chrisman requires a new trial, regardless of its effect or influence on the rest of the jurors. It is settled that “a lone biased juror undermines the impartiality of an entire jury.” *State v. Gardner*, 2003-NMCA-107 ¶3, 134 N.M. 294. “If a juror is biased, then the defendant, by definition, suffers prejudice. One juror’s bias, even if it does not influence other jurors, jeopardizes the defendant’s right to an impartial jury.” *Mann*, ¶25.

This rule applies to civil cases as well. “Civil litigants also have a right to trial by an impartial jury.... Material prejudice on the part of even one juror impairs that right.” *Castaneda by Correll v. Pederson*, 185 Wis.2d 199, 211, 518 N.W.2d 247, 251 (Wis. 1994). “The right to trial by jury, if it is to mean anything, must mean the right to a fair and impartial jury. [Citation] A litigant is therefore entitled to a jury composed of 12 impartial jurors; although a civil case may be decided by the vote of three-fourths of that number, a party has the right to have that decision, whether for or against him, based on the honest deliberations of 12 such

individuals.” *McNally v. Walkowski*, 85 Nev. 696, 700, 462 P.2d 1016, 1018 (Nev. 1969); *see also Parrish v. Lilly*, 883 P.2d 158, 161-62 (Okla. 1993) (holding bias of single juror required reversal without regard to effect on others even though jury was unanimous and concurrence of only nine was necessary for verdict); *Clemens v. Regents of University of California*, 20 Cal. App. 3d 356, 360 (Cal. Ct. App. 1971) (“The guarantee is to 12 impartial jurors.” Emphasis in original).

According to the uncontradicted evidence presented below, plaintiffs were deprived of their right to a jury trial by 12 impartial jurors. At least two of the jurors were irreversibly biased against the plaintiffs from the outset of trial. One of them (Chrisman) was ultimately selected to be the foreperson. In the absence of contrary affidavits from Fresso, Chrisman, or any other juror, the trial court abused its discretion by denying plaintiffs’ motion for new trial based on juror bias. A trial court abuses its discretion when its ruling is contrary to the undisputed evidence. *See, e.g., State v. Paredes*, 2004-NMSC-036, ¶15, 136 N.M. 533 (court abuses its discretion in denying motion to withdraw plea when undisputed facts establish it was not knowingly and voluntarily given).

The trial court found that plaintiffs had suffered no prejudice because the jury found against them on liability, and most of the comments by Fresso and Chrisman went to damages. 69 RP 22089-22095. However, the juror bias infects

all of the jury's findings. It would be absurd to conclude that Fresso and Chrisman were biased against the plaintiffs on damages, but were perfectly fair and impartial in deciding liability.

The trial court also abused its discretion by denying the motion for new trial based on the jury's premature deliberations in violation of the jury instructions. In *State v. Cherry*, 341 Ark. 924, 20 S.W.3d 354 (Ark. 2000), the jurors discussed the case during breaks and some jurors expressed opinions about the defendant's guilt before the formal deliberations began. On appeal, the Arkansas Supreme Court found the defendant was entitled to a new trial. The court concluded the defendant had been deprived of his right to fair trial based on the fact that some jurors had made up their minds before the case was submitted to them and "those jurors who had already made up their minds could have possibly influenced others who were undecided about Cherry's guilt." 20 S.W.3d at 359. Although the court found that the jurors' premature discussion of the facts alone would not have been enough to demonstrate prejudice, it ruled that "when this conduct is considered in light of the testimony that some jurors prematurely formed a conclusion about defendant's guilt and then discussed those conclusions with other jurors, it does support a finding of prejudice." *Id.* at 360.

The same reasoning logically applies here. Although UJI 13-110 allows jurors to discuss the evidence during trial, it expressly forbids jurors from making

up their minds, deciding the outcome, or attempting to persuade other jurors of the outcome before the final deliberations. The unrefuted evidence establishes that some jurors formed fixed opinions on the outcome of the case and engaged in a persistent crusade to persuade other jurors throughout the course of the entire trial. This evidence compels a finding of prejudice and a new trial. *Id.* at 359-60; *see also Dept. of Transportation & Development v. Moneleone*, 976 So.2d 798, 801 (La. Ct. App. 2008) (finding trial court abused discretion by denying new trial based on juror expression of fixed opinion during trial); *Isabelle v. Proctor Hospital*, 131 Vt. 1, 3, 298 A.2d 818, 819 (Vt. 1972) (same); *Cooper v. Carr*, 161 Mich. 405, 126 N.W. 468 (Mich. 1910) (same).

STATEMENT REGARDING ORAL ARGUMENT

Plaintiffs-Appellants hereby request oral argument on the grounds that the factual record is lengthy and complex and oral argument would be of substantial assistance to the Court and would provide an opportunity for counsel to answer any questions the Court may have concerning the issues presented on appeal.

CONCLUSION

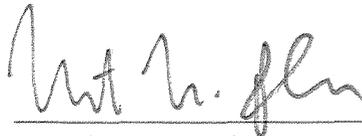
The judgment and the order denying a new trial should be reversed with directions to grant a new trial as to all plaintiffs. Whether or not a new trial is ordered for all plaintiffs, the pretrial evidentiary ruling and partial summary judgment order on lupus and other immune diseases should be reversed, and the immune disease claims of plaintiffs Loretta Kautz, Sabrina Hudson, Franklin Volz, Estella Acosta, Judy Thompson, and Priscilla Melendez should be reinstated.

Respectfully submitted,

David R. Lira
Girardi & Keese
1126 Wilshire Boulevard
Los Angeles, CA 90017
(213) 977-0211

Steven L. Tucker
Tucker Law Firm, PC
520 Agua Fria St.
Santa Fe, NM 87501
(505) 982-3467

&

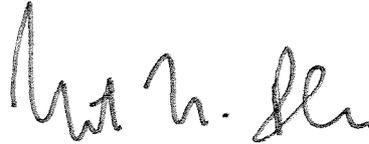


Martin N. Buchanan
Niddrie, Fish & Buchanan
750 B Street, Suite 2640
San Diego, CA 92101
(619) 238-2426

CERTIFICATE OF SERVICE

I hereby certify that on April 29, 2010, I served the foregoing **BRIEF IN CHIEF** by mailing a copy by first-class mail, postage prepaid, to the following:

Edward R. Ricco & Jocelyn Drennan Rodey Law Firm, P.A. P.O. Box 1888 Albuquerque, NM 87103-1888	Michael J. Mazzone Hayes & Boone, L.L.P. One Houston Center 1221 McKinney, Suite 2100 Houston, TX 77010
Marte Lightstone Modrall Law Firm P.O. Box 2168 Albuquerque, NM 87103	



Martin N. Buchanan