

1 UNITED STATES COURT OF APPEALS
2 FOR THE SECOND CIRCUIT

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4
5 August Term, 2002

6
7 (Argued: August 7, 2003

8 Decided: August 11, 2004)

9 Docket No. 02-7913
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13 PATRICIA A. WILLS, individually and as personal representative of the Estate of RICKY LEE
14 WILLS, deceased, on behalf of Ricky Lee Wills and those persons similarly situated,

15
16 *Plaintiff-Appellant,*

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18 – v. –

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20 AMERADA HESS CORP., SPENTONBUSH/RED STAR COMPANIES, INC., SHERIDAN
21 TRANSPORTATION CORP. and HYGRADE OPERATORS INC.,

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23 *Defendants-Appellees.*
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26 Before:

27 JACOBS and SOTOMAYOR, *Circuit Judges.**
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31 Appeal from a judgment of the United States District Court for the Southern District of
32 New York (Patterson, J.) entered on July 15, 2002, granting defendants-appellees' motion for
33 summary judgment. Plaintiff-appellant Patricia A. Wills, individually and as personal
34 representative of her husband's estate, filed an action under the Jones Act, 46 App. U.S.C. § 688,
35 general maritime law, and New York state law alleging that her husband's illness and death were
36 caused by exposure to toxic emissions aboard vessels owned, operated and managed by

* The Honorable Fred I. Parker, who was a member of the panel, died following argument. This appeal is being decided by the remaining two members of the panel, who are in agreement. *See* 2d Cir. R. § 0.14(b).

1 defendants-appellees. After staying discovery, excluding the opinions of plaintiff-appellant’s
2 proposed experts, and declining to apply the burden-shifting rule of *The Pennsylvania*, 86 U.S.
3 (19 Wall.) 125 (1873), the district court held that plaintiff-appellant failed to satisfy her burden of
4 establishing a causal link between the vessels’ alleged toxic emissions and her husband’s illness
5 and death.

6 AFFIRMED.

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9 KENNETH HELLER, Kenneth Heller P.C., New York,
10 NEW YORK, *for Plaintiff-Appellant*.

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12 ROBERT J. KELLY, Wilson, Elser, Moskowitz, Edelman
13 & Dicker, LLP, Newark, NJ, (James M. Hazen, Hill, Betts
14 & Nash LLP, New York, NEW YORK, *of counsel*), *for*
15 *Defendants-Appellees*.

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18 SOTOMAYOR, *Circuit Judge*:

19 Plaintiff-appellant Patricia A. Wills (“Wills” or “plaintiff”) seeks damages under
20 the Jones Act, 46 U.S.C. § 688(a), general maritime law, and New York state law for losses
21 related to the 1996 death of her husband, Ricky Lee Wills (“decedent”), from cancer
22 complications. Wills alleges that decedent’s illness and death are attributable to his exposure to
23 hazardous chemicals while working aboard ships owned and operated by defendants-appellees
24 Amerada Hess Corporation, SpentonBush/Red Star Companies, Inc., Sheridan Transportation
25 Corporation, and Hygrade Operators, Inc. (collectively “defendants”). The district court granted
26 summary judgment in favor of defendants upon concluding that Wills failed to proffer sufficient
27 admissible evidence of causation. *See Wills v. Amerada Hess Corp.*, No. 98 CIV. 7126 (RPP),
28 2002 WL 140542, at *17 (S.D.N.Y. Jan. 31, 2002).

1 and negligence and wrongful death under the Jones Act.² Pursuant to a schedule set by the
2 district court, discovery was to be completed by August 31, 1999, and trial was to begin in
3 September of that year.

4 For purposes of this appeal, we summarize only those aspects of the protracted
5 discovery process that relate to Wills's proposed experts. Defendants first sought to identify
6 Wills's experts and the nature of the experts' anticipated testimony through interrogatories,
7 propounded on April 21, 1999. Wills moved to strike the interrogatories. The district court
8 denied her motion and ordered Wills to respond by May 25, 1999. In late August 1999, Wills
9 disclosed the names of three proposed expert witnesses: Jesse H. Bidanset, Ph.D., a forensic
10 toxicologist; Cynthia W. Duffield, a civil engineer; and Richard C. Rodi, an engineer and basic
11 ship design manager. Instead of scientific reports describing the nature of the experts' research
12 and detailed descriptions of their anticipated testimony, Wills provided defendants with only
13 superficial descriptions of the experts' intended testimony. The district court ordered Wills to
14 produce more detailed expert reports by November 1, 1999.

15 At a November 4, 1999 hearing, the district court, in response to defendants'
16 assertion that there was no proven link between benzene exposure and squamous cell carcinoma,
17 ordered Wills to provide, within two weeks, a scientific report establishing such a causal link.
18 On November 19, 1999, Wills produced a "preliminary report" authored by Dr. Bidanset (the

² Wills's complaint also asserted a products liability claim and claims on behalf of a putative class of seamen who developed cancer after being exposed to toxins aboard defendants' vessels. The district court dismissed Wills's products liability claim with prejudice after Wills expressly waived it. (Order of June 14, 1999). The district court also dismissed Wills's class allegations after she failed to comply with a court order to submit a class action affidavit as required by Fed. R. Civ. P. 23. *See Wills v. Amerada Hess Corp.*, No. 98 Civ. 7126 (RPP), 1999 WL 500142, at *2 (S.D.N.Y. July 15, 1999). Neither of these orders is before us on appeal.

1 “First Report”), which concluded “with reasonable scientific certainty that [decedent’s]
2 occupational exposure to various petroleum products was the most probable cause of his
3 squamous cell carcinoma.” The brevity of the First Report, and, *inter alia*, its failure to cite
4 sufficient scientific evidence to support its conclusion, prompted the district court to continue its
5 December 6, 1999 order staying further discovery until Dr. Bidanset could be deposed and the
6 admissibility of his testimony determined. *Wills v. Amerada Hess Corp.*, No. 98 CIV. 7126
7 (RPP), 2000 WL 42201, at *3 (S.D.N.Y. Jan. 19, 2000).³

8 On April 28, 2000, Wills provided defendants with another report from Dr.
9 Bidanset (the “Second Report”), and Dr. Bidanset’s deposition was taken later that year. In the
10 Second Report, Dr. Bidanset also advanced the “oncogene theory” of causation – a theory which,
11 by his own admission, is “controversial.” *Wills*, 2002 WL 140542, at *14. The more widely-
12 accepted scientific theory of causation – the so-called “dose-response” theory – suggests that
13 toxins are only carcinogenic when a person is exposed to concentrations over and above a
14 specified threshold level. Below the specified threshold level, the effects of the toxins are
15 thought to be benign. In contrast, Dr. Bidanset’s oncogene theory suggests that for some toxins
16 there is no safe level of exposure because the cancer can be triggered by the interaction of a
17 single molecule of the toxin with a single human cell. Dr. Bidanset surmised that decedent’s
18 cancer had developed in the manner predicted by the oncogene theory.

19 On January 2, 2001, appellees moved to exclude Dr. Bidanset’s testimony, and for

³ On January 14, 2000, the court lifted the stay in order to compel defendants to comply with an earlier discovery order and to provide plaintiff with defendants’ records of emissions monitoring. *Wills v. Amerada Hess Corp.*, No. 98 CIV. 7126 (RPP), 2002 WL 1482624, at *3 (S.D.N.Y. July 9, 2002).

1 summary judgment on all claims. In response, Wills moved to apply *The Pennsylvania* Rule to
2 her claims, thereby shifting the burden of proof on the issue of causation to appellees. Further,
3 Wills submitted two additional expert reports – from Dr. Alfred Neugut, an oncologist and
4 epidemiologist, and Paul Haas, an industrial hygienist – with her response papers. The district
5 court refused to consider these additional expert reports, excluding them as untimely. (Order of
6 Feb. 26, 2001).

7 In an opinion and order dated January 31, 2002, the district court granted
8 defendants’ motion to exclude the proposed testimony and reports of Dr. Bidanset, finding them
9 to be without sufficient indicia of reliability as required for admissibility under Rule 702 of the
10 Federal Rules of Evidence (“Rule 702”). *Wills*, 2002 WL 140542, at *13-15. First, the district
11 court rejected Wills’s contention that the standards for admissibility under *Daubert* are relaxed in
12 cases brought under the Jones Act. *Id.* at *9. Second, applying *Daubert*’s non-exhaustive list of
13 factors to be considered when admitting evidence under Rule 702, the district court found Dr.
14 Bidanset’s opinions insufficiently reliable to be admissible under Rule 702. *Id.* at *15.
15 Specifically, the district court found that Dr. Bidanset’s First Report – which the district court
16 deemed devoid of scientific evidence linking squamous cell carcinoma to exposure to benzene
17 and PAHs, the toxins to which decedent allegedly was exposed – “demonstrate[d] that Dr.
18 Bidanset was ready to form a conclusion first, without any basis, and then try to justify it.” *Id.* at
19 *10. Further, the district court noted that Dr. Bidanset conceded in his deposition that he was
20 unaware of any scientific studies that would support his contention, made in the First Report, that
21 the “aggressiveness” of decedent’s cancer demonstrates that he was “intensely exposed to . . .
22 carcinogenic hydrocarbons.” *Id.*

1 With regard to the Second Report, the district court was skeptical of Dr.
2 Bidanset’s assumption that decedent was exposed to benzene, PAHs, and diesel exhaust
3 emissions – an assumption that Dr. Bidanset based largely on the fact that the vessels on which
4 decedent worked were powered by diesel engines and carried petroleum products. Although Dr.
5 Bidanset was able to document that, on at least some of the defendants’ vessels, benzene
6 emissions occasionally exceeded levels permitted by the Occupational Safety and Health
7 Administration (“OSHA”), the district court found no evidence that decedent worked on any of
8 those particular vessels at the times when such high levels were recorded. *Id.* at *10. Dr.
9 Bidanset also relied on the affidavit of another seaman, Mark Miller, who, for a period of five
10 months, intermittently worked with decedent aboard defendants’ ships. Miller averred that both
11 he and decedent were exposed to noxious odors, but the district court discounted the value of
12 such statements on the ground that Miller lacked the expertise necessary to determine the toxicity
13 of the fumes. *Id.* at *11.

14 Next, the district court considered the scientific studies upon which Dr. Bidanset
15 relied, all of which involved animal, rather than human subjects. The district court noted that Dr.
16 Bidanset failed to establish a link between benzene and PAH exposure and squamous cell
17 carcinoma. *Id.* at *11-12. The court further noted that, by Dr. Bidanset’s own admission, the
18 cancer most linked to benzene exposure is leukemia. *Id.* at *12. The district court observed that,
19 in failing to establish a nexus between benzene and PAH exposure and decedent’s cancer, Dr.
20 Bidanset indicated that “he is not even sure whether benzene is capable of causing Decedent’s
21 [squamous cell carcinoma].” *Id.* at *12.

22 Observing that courts should be cautious in presuming that findings derived from

1 animal studies are applicable to humans, the district court nevertheless scrutinized the animal
2 studies which purportedly established a link between benzene and squamous cell carcinoma. The
3 district court observed that in studies in which mice inhaled the toxin, the causal link between
4 benzene and squamous cell carcinoma was only tenuous. *Id.* Although such a link was stronger
5 in studies in which rats ingested large quantities of benzene, the district court doubted the
6 pertinence of those studies because there was no suggestion that decedent ingested benzene, let
7 alone at such high doses or for comparable durations. *Id.*

8 The district court also expressed dissatisfaction with Dr. Bidanset's failure to
9 account adequately for the possibility that decedent's cigarette smoking and alcohol consumption
10 caused his squamous cell carcinoma. *Id.* Although Dr. Bidanset conceded that smoking is the
11 most frequent cause of squamous cell carcinoma, the Second Report summarily discounted the
12 fact that decedent smoked between one and two packs per day for over twenty years. According
13 to Dr. Bidanset, smoking was not likely the cause of decedent's cancer, because it usually takes
14 decades for cigarette smoking to cause squamous cell carcinoma, and the cancer is then usually
15 found in the lungs rather than the head and neck. The district court, however, found that this
16 statement contradicted a study that Dr. Bidanset relied upon in the First Report, which concluded
17 that smoking is a major risk factor for squamous cell carcinoma of the head and neck. *Id.* The
18 study further concluded that the latency period for developing squamous cell carcinoma was
19 eight years, rather than decades, as Dr. Bidanset contended. *Id.* The district court also faulted
20 the Second Report for not accounting for the possibility that decedent's heavy drinking may have
21 caused his squamous cell carcinoma, even though the First Report specifically stated that alcohol
22 is a major risk factor for squamous cell carcinoma. *Id.*

1 Regarding the Second Report, the district court held that Dr. Bidanset’s oncogene
2 theory failed all of the *Daubert* factors, as it had not been tested or subjected to peer review, and
3 consequently, there was no known potential error rate. *Id.* at *13-16. Further, the district court
4 found that Dr. Bidanset’s reasons for departing from the mainstream understanding of causation
5 to embrace the oncogene theory were wholly unsatisfactory. *Id.* at *14-16. Dr. Bidanset could
6 cite to no epidemiological studies pointing to an increased risk of squamous cell carcinoma in
7 those exposed to benzene or PAHs, and he conceded in his deposition that he was unsure
8 whether PAHs conform to the oncogene theory at all. The district court also determined that Dr.
9 Bidanset’s conclusion that exposure to diesel fuel contributed to decedent’s cancer was made
10 without any basis. *Id.* at *15.

11 On the basis of these deficiencies, the district court granted defendants’ motion to
12 exclude Dr. Bidanset’s expert testimony and opinions. *Id.* Wills nonetheless argued that, even if
13 such evidence were excluded, the defendants’ motion for summary judgment should be denied
14 because, under *The Pennsylvania* Rule, defendants bore the burden of proof on the issue of
15 causation. The district court declined to apply *The Pennsylvania* Rule and refused to shift the
16 burden of proof to defendants. *Id.* at *16-17. Relying chiefly on this Court’s decision in *Wilkins*
17 *v. American Export Isbrandsten Lines, Inc.*, 446 F.2d 480 (2d Cir. 1971), in which we declined to
18 invoke the Rule where a seaman died from a heart attack after working more hours than
19 statutorily allowed, the district court held that *The Pennsylvania* Rule “should not be extended
20 ‘beyond the chosen area of ship collisions to embrace Jones Act cases.’” *Wills*, 2002 WL
21 140542, at *16 (quoting *Wilkins*, 446 F.2d at 486).

22 On Wills’s claim for maintenance and cure, the district court found that, in

1 addition to a failure of proof on the issue of causation, Wills had proffered insufficient evidence
2 to establish that decedent’s illness manifested itself during his employment with defendants. *Id.*
3 at *17.

4 Finding Wills without evidence on the issue of causation, an issue that the district
5 court regarded as essential for her to prevail, the district court provisionally granted summary
6 judgment in favor of defendants. *Id.* Sensitive to Wills’s claim that her case had been stymied
7 by her inability to obtain full discovery, the district court permitted Wills an additional twenty
8 days to submit an affidavit detailing the evidence sought through further discovery and the
9 manner in which such evidence would assist her in proving causation. *Id.* In response, Wills
10 requested an opportunity to depose all of defendants’ operating personnel and review a host of
11 documents pertaining to the design and cargo of defendants’ vessels. She also requested
12 permission to conduct environmental and air quality tests aboard defendants’ vessels.

13 After considering Wills’s request, the district court declined to re-open discovery.
14 *Wills*, 2002 WL 1482624, at *4. According to the district court, Wills did not explain how an
15 opportunity to depose all of defendants’ employees would allow her to remedy the deficiencies
16 identified in Dr. Bidanset’s testimony. *Id.* at *1. As to the documentary evidence sought, the
17 district court concluded that defendants either had complied with Wills’s requests for such
18 materials or that Wills previously had been given sufficient access to such records. *Id.* at *4.
19 The district court was also unpersuaded by Wills’s requests to conduct air quality tests on
20 defendants’ vessels, because it doubted that the results of such tests – conducted more than seven
21 years after decedent’s death – would be probative on the issue of his exposure to toxins. *Id.* For
22 the reasons stated in its prior order and opinion, the district court granted summary judgment to

1 defendants on all claims.

2 Wills timely filed this appeal.

3 DISCUSSION

4 We must first determine whether the district court correctly held that Wills bears
5 the burden of proof on the issue of causation and that *The Pennsylvania* Rule was inapplicable to
6 her claims. Because we answer those questions affirmatively, we then determine whether the
7 court was correct in finding that Wills did not satisfy her burden to prove causation and in
8 granting summary judgment to defendants on that basis. We also answer those questions
9 affirmatively and hold that: (1) expert testimony on the issue of causation is necessary in Jones
10 Act cases where a lay juror could not be expected to intuit the causal relationship between the
11 acts in question and the injury; (2) such expert testimony must satisfy the *Daubert* standards of
12 reliability to be admissible under Rule 702; (3) the district court did not abuse its discretion in
13 concluding that Wills’s proffered expert testimony either did not meet those standards or was
14 untimely; and (4) the district court’s stay of discovery pending a determination of the
15 admissibility of Wills’s expert’s testimony was not an abuse of discretion.

16 Lastly, because Wills has not established that decedent’s illness manifested itself
17 while he was in defendants’ employ, or that decedent’s illness was causally related to exposure to
18 toxic emissions while aboard defendants’ ships, her claim for maintenance and cure also fails.

19 I. Standards of Review

20 We review the district court’s grant of summary judgment *de novo*. See *Lombard*
21 *v. Booz-Allen & Hamilton, Inc.*, 280 F.3d 209, 214 (2d Cir. 2002). Summary judgment is
22 appropriate where there are no genuine issues of material fact and the moving party is entitled to

1 judgment as a matter of law. Fed. R. Civ. P. 56; *Oneida Indian Nation v. City of Sherrill*, 337
2 F.3d 139, 152-53 (2d Cir. 2003). When there are no disputed issues of material fact, “our task is
3 to determine whether the district court correctly applied the law.” *Mario v. P & C Food Mkts.,*
4 *Inc.*, 313 F.3d 758, 763 (2d Cir. 2002) (internal quotation marks omitted).

5 We review a district court’s decision to exclude expert testimony for abuse of
6 discretion. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999). The exclusion of a
7 proposed expert witness will not constitute an abuse of discretion unless it is “manifestly
8 erroneous.” *Amorgianos v. Nat’l R.R. Passenger Corp.*, 303 F.3d 256, 265 (2d Cir. 2002)
9 (internal quotation marks omitted). We have held that “the abuse of discretion standard applies
10 as much to the trial court’s decisions about *how to determine reliability* as to its ultimate
11 conclusion.” *Id.* (emphasis in original) (internal quotation marks omitted). Accordingly, “the
12 district court has broad discretion in determining what method is appropriate for evaluating [the]
13 reliability [of proposed expert evidence] under the circumstances of each case.” *Id.*

14 Recognizing the district court’s broad discretion to direct and manage the pre-trial
15 discovery process, we also review a district court’s discovery rulings for abuse of discretion. *In*
16 *re Fitch, Inc.*, 330 F.3d 104, 108 (2d Cir. 2003).

17 **II. Application of *The Pennsylvania Rule***

18 “[B]ecause of their status as wards of the admiralty, [seamen] are by the
19 peculiarity of their lives liable to sudden sickness from change of climate, exposure to perils, and
20 exhausting labour.” *O’Hara v. Weeks Marine, Inc.*, 294 F.3d 55, 62 (2d Cir. 2002) (internal
21 quotation marks omitted); see *Chandris, Inc. v. Latsis*, 515 U.S. 347, 354-55 (1995). The Jones
22 Act, 46 App. U.S.C. § 688, provides seamen with special statutory protections in the area of

1 personal injury suits: “Any seaman who shall suffer personal injury in the course of his
2 employment may” bring a cause of action against his employer. *Id.* at § 688(a). The Act
3 therefore “places a . . . duty on the [shipowner] to provide a reasonably safe workplace.” *Oxley*
4 *v. City of New York*, 923 F.2d 22, 25 (2d Cir. 1991). Wills argues that defendants breached this
5 duty by exposing her husband to carcinogenic chemicals.⁴

6 Wills contends that defendants’ motion for summary judgment was improperly
7 granted because, upon showing that defendants breached their regulatory obligation to protect
8 decedent from exposure to toxins, *The Pennsylvania* Rule applies and relieves her of the burden
9 of proving causation altogether. *The Pennsylvania* Rule, an oddity of admiralty law, shifts the
10 burden of proving causation from plaintiffs to defendants to “show[] not merely that [their] fault
11 might not have been one of the causes [of the injury], or that it probably was not, but that it could
12 not have been.” *The Pennsylvania*, 86 U.S. (19 Wall.) at 136. Wills asserts that she can prove
13 that defendants violated various coast guard regulations requiring shipowners to monitor benzene
14 emissions, *see* 46 C.F.R. §§ 197.505, 197.515, 197.540,⁵ and that proof of such violations
15 warrants application of *The Pennsylvania* Rule’s presumption that these violations caused her

⁴ In her complaint, Wills alleged that defendants breached their duty to exercise due care and diligence by failing to provide decedent a reasonably safe place to work. For purposes of this appeal, we assume these issues but do not reach them in determining the case.

⁵ Wills also argues that she is entitled to imposition of *The Pennsylvania* Rule because the defendants violated OSHA regulations governing the permissible levels of toxic emissions aboard their vessels. *See* 24 C.F.R. §§ 1910.1000, 1910.1025, 1926.55. As Wills’s counsel acknowledged at oral argument, however, we have previously held that a shipowner’s violation of OSHA regulations is insufficient to trigger application of *The Pennsylvania* Rule. *See Jones v. Spentonbush-Red Star Co.*, 155 F.3d 587, 594-96 (2d Cir. 1998) (finding absence of congressional intent in enacting the Occupational Safety and Health Act to shift the burden of proof to shipowner found to be in violation of OSHA regulation).

1 husband's cancer.

2 By shifting the burden of proof to establish causation, *The Pennsylvania* Rule
3 creates a “drastic and unusual presumption” – albeit a rebuttable one – against the shipowner
4 who has violated his or her legal duties. *Dir. Gen. of India Supply Mission v. S.S. Maru*, 459
5 F.2d 1370, 1375 (2d Cir. 1972) (quoting G. Gilmore & C. Black, *The Law of Admiralty* § 7-5, at
6 404 (1957)). Nevertheless, such a presumption is appropriate in cases where, in light of “wide
7 experience in maritime navigation,” “[t]he logical probability” is “that [the] fault of the ship is
8 the cause” of the disaster. *Wilkins v. Am. Exp. Isbrandtsen Lines, Inc.*, 446 F.2d 480, 485 (2d
9 Cir. 1971).

10 Collision cases, such as the case that gave the Rule its moniker, most clearly
11 illustrate this principle. Because a collision “is rare in which there is not at least some arguable
12 reason for regarding both vessels at fault,” *id.* (internal quotations marks and citation omitted), it
13 is logical to attribute fault to “a ship [that] at the time of a collision is in actual violation of a
14 statutory rule intended to prevent collisions.”⁶ *The Pennsylvania*, 86 U.S. (19 Wall.) at 136
15 (imposing presumption against sailboat, which, lacking a required foghorn, collided with a
16 speeding steamer). Thus under the Rule, proof that a maritime safety rule was violated creates a
17 presumption that the violation led to the collision, such that the complaining party is relieved of
18 its obligation to show causation, unless the derelict shipowner can prove that the violation was
19 not the cause of the collision.

⁶ See also *Pierro v. Carnegie-Illinois Steel Corp.*, 186 F.2d 75, 78 (3rd Cir. 1950) (describing *The Pennsylvania* Rule as the “product of a philosophy peculiar to United States admiralty law, that disasters are likely to occur when statutes passed for the express purpose of promoting safety in navigation are violated”).

1 Wills correctly notes that application of *The Pennsylvania* Rule has not been
2 limited to cases involving collisions. *See, e.g., Complaint of Tug Hellen B. Moran, Inc.*, 560
3 F.2d 527, 529 (2d Cir. 1977) (applying the Rule in the context of allision⁷); *The Aakre*, 122 F.2d
4 469, 474-75 (2d Cir. 1941) (applying the Rule in the context of ship stranding). Nevertheless, we
5 have been cautious not to extend the Rule’s application in ways that would unmoor it from its
6 animating principles. Thus, for example, we have held that application of *The Pennsylvania*
7 Rule is “limited to the violation of a statute intended to prevent the catastrophe which actually
8 transpired.” *India Supply Mission*, 459 F.2d at 1375. Accordingly, we have applied the Rule
9 against a ship overloaded in violation of the Load Line Act, 46 App. U.S.C. §§ 85(b) and (c), that
10 sank at sea. *See Petition of Long*, 439 F.2d 109, 113 (2d Cir. 1971). We declined, however, to
11 apply the Rule against an unlawfully overloaded ship that became stranded in shallow water.
12 *India Supply Mission*, 459 F.2d at 1374-75. In distinguishing the two scenarios, we noted that
13 Congress’s “prime motivation” in enacting the Load Line Act was to prevent loss of life due to
14 overloaded vessels sinking. *Id.* at 1375-76. Absent such a limiting principle, “every violation of
15 every statute would call into play the *Pennsylvania* rule irrespective of the purpose of the statute
16 and the danger which it was intended to prevent.” *Id.* at 1376.

17 Wills argues that this limitation is satisfied here, because defendants are alleged to
18 have violated coast guard regulations that were enacted for the express purpose of preventing
19 seamen from developing cancer from exposure to toxic emissions while at sea. *See* 56 Fed.
20 Regulation. 52122-01 (Oct. 17, 1991) (stating that coast guard regulation, 46 C.F.R. § 197,

⁷ In the maritime context, “allision” refers to the running of one ship upon another ship that is stationary. *See Webster’s Third New International Dictionary* 56 (1986).

1 “incorporate[d] the lower benzene exposure levels adopted by [OSHA]” which is “expected to
2 result in a 90% lowering of leukemia deaths associated with the inhalation of benzene vapors”).

3 Even assuming *arguendo* that Wills is correct that her husband’s cancer was within the scope of
4 harms that these coast guard regulations were intended to prevent, we agree with the district court
5 that the circumstances of this case do not warrant application of *The Pennsylvania* Rule.

6 In addition to requiring a nexus between the injury and the purpose of the legal
7 obligation that was breached, our cases hold that *The Pennsylvania* Rule will not create a
8 presumption that the law’s violation caused a calamity unless common sense or the realities of
9 admiralty prompt that conclusion. In *The Mabel*, 35 F.2d 731 (2d Cir. 1929) (per curiam), for
10 example, we refused to impose *The Pennsylvania* Rule against an anchored ship that was struck
11 by a barge at night, despite the barge owner’s argument that the collision could have been
12 avoided had the anchored ship complied with its legal obligation to hang cautionary lights at a
13 sufficient distance from one another. *Id.* at 732. While “[a]ll things are indeed possible,” we
14 observed that “in applying [*The Pennsylvania* Rule] we are limited to the reasonable
15 probabilities.” *Id.* Finding it improbable that the anchored ship’s failure to comply with the
16 regulation was the cause of the collision, the bargeowner’s application to invoke *The*
17 *Pennsylvania* Rule was denied.

18 Over fifty years later, in *Wilkins*, similar reasoning led us to reject application of
19 *The Pennsylvania* Rule in a Jones Act case. There, a seaman suffered a fatal heart attack after
20 being required to work strenuous amounts of overtime. The seaman’s estate sued the seaman’s
21 employer under the Jones Act, arguing that by forcing the seaman to work so hard, the employer
22 was responsible for the seaman’s death. *Id.* at 481. The estate claimed that *The Pennsylvania*

1 Rule was applicable because the employer violated a safety statute that limited seaman overtime.
2 *Id.* at 485. While recognizing that the seaman’s overtime work “was not so devoid of probative
3 value as to forbid an inference that it caused his heart attack,” we also found that the nexus
4 between the violation of the statute and the seaman’s heart attack was not so self-evident as to
5 warrant the presumption that violation of the overtime statute resulted in the seaman’s death. *Id.*
6 at 484-85. Accordingly, we held that *The Pennsylvania* Rule does not apply where proof that the
7 legal obligation was breached does not lead “naturally and logically” to the conclusion that the
8 breach caused the injury. *Id.* at 485.

9 Wills contends that it is entirely possible that decedent would not have developed
10 squamous cell carcinoma if defendants had complied with their obligations to monitor benzene.
11 We cannot say, however, that it is reasonably probable that defendants’ non-compliance and
12 decedent’s cancer were causally related. *See The Mabel*, 35 F.2d at 732. No reference to our
13 “common experience” in admiralty, or to authorities with “wide experience in maritime
14 navigation,” supports the conclusion that the failure to monitor benzene levels led “naturally and
15 logically” to decedent’s fatal cancer. *See Wilkins*, 446 F.2d at 485. In this regard, we agree with
16 the Third Circuit that *The Pennsylvania* Rule “was [not] intended to increase the likelihood of
17 liability no matter how remote and unrelated an injury to a statutory [or regulatory] violation.” *In*
18 *re Complaint of Nautilus Motor Tanker Co.*, 85 F.3d 105, 114 (3d Cir. 1996).

19 Although Wills relies heavily on our decision in *In re Seaboard Shipping Corp.*,
20 449 F.2d 132, 136 (2d Cir. 1971), our decision to apply *The Pennsylvania* Rule in that case does
21 not prompt us to apply the Rule here. *In re Seaboard* involved a controversy between a barge
22 owner and a tugboat owner that arose after two bargemen drowned when the tugboat and the

1 barge it was hauling were caught in a violent storm. *Id.* at 133. Together, the owners of the
2 tugboat and the barge advanced the money to settle claims brought by the bargemen’s survivors;
3 thereafter, they sued one another for exoneration. *Id.* Although the barge suffered from an
4 inoperative radio and a leaky lifeboat, the barge owner nonetheless argued that he was not
5 partially liable because the tugboat, which negligently steered both vessels into the path of the
6 storm, had not proven that the absence of the barge’s required safety features caused the
7 bargemen to drown. *Id.* at 136. In applying *The Pennsylvania* Rule, we held that the lack of
8 proof disadvantaged the barge and the parties were jointly liable. *Id.* at 139. The factual
9 circumstances of that case, however, are wholly distinguishable from the instant case. In *In re*
10 *Seaboard*, the facts suggested that the “tragedy would not have occurred” absent the barge’s
11 statutory violations which left it “mute and helpless.” *Id.* at 136, 138. Here, there is no
12 indication that decedent’s cancer would not have occurred if defendants had complied with coast
13 guard regulations.

14 Wills, however, argues that application of *The Pennsylvania* Rule in this case is
15 necessary to give effect to the purposes of the Jones Act to compel defendants’ compliance with
16 safety obligations. The plaintiff in *Wilkins* raised a similar argument. Nevertheless, we were
17 “not persuaded that there are broad considerations of policy which require that we extend the
18 admiralty rule of *The Pennsylvania* . . . to embrace Jones Act cases.” *Wilkins*, 446 F.2d at 486;
19 *see also* *Pierro v. Carnegie-Illinois Steel Corp.*, 186 F.2d 75, 78 (3d Cir. 1950) (finding
20 application of *The Pennsylvania* Rule inappropriate in Jones Act claim for death of overworked
21 seaman). We are aware that in the years since we decided *Wilkins*, some courts have applied *The*
22 *Pennsylvania* Rule in Jones Act cases. *See Reyes v. Vantage S.S. Co.*, 609 F.2d 140, 145-46 (5th

1 Cir. 1980); *Marine Solution Servs., Inc. v. Horton*, 70 P.3d 393, 407 (Alaska 2003). The facts of
2 the instant case, however, present no compelling reason to depart from our prior precedents.
3 Even if we were persuaded that *The Pennsylvania Rule* should be applied in some Jones Act
4 cases, we would still decline to apply the rule in cases where, as here, it cannot be said with
5 confidence that the plaintiff's injury resulted from defendants' actions.

6 **III. Wills's Jones Act Claims**

7 Having determined that Wills, rather than defendants, bears the burden of proving
8 causation, we turn to whether the district court was correct in holding that Wills failed to carry
9 her burden and that summary judgment in favor of defendants was warranted. In considering
10 defendants' motion for summary judgment, the district court first determined that Wills was
11 required to proffer expert testimony on the issue of causation. After ruling that Wills's proffered
12 expert testimony on the issue of causation was inadmissible, the district court granted
13 defendants' motion for summary judgment because Wills had not proffered evidence from which
14 a reasonable jury could conclude that decedent's cancer was even partially caused by his alleged
15 exposure to toxins while aboard defendants' ships. *Wills*, 2002 WL 140542, at *17.

16 On appeal, Wills reminds us that as a Jones Act plaintiff, she "shoulders a lighter
17 burden [for establishing negligence] than [her] counterpart on land would carry." *McMillan v.*
18 *Marine Sulphur Shipping Corp.*, 607 F.2d 1034, 1039 (1979) (internal quotation marks and
19 citation omitted). She argues that the district court, in excluding her proposed expert testimony
20 on the issue of causation, failed to appreciate her reduced burden to prove causation. Wills
21 claims that, by granting summary judgment in favor of defendants on the ground that she failed
22 to proffer admissible evidence on the issue of causation, the district court's undermined "the

1 right of the jury to pass upon the question of fault and causation,” a right that in Jones Act cases
2 “must be most liberally viewed.” *Oxley*, 923 F.2d at 25 (internal quotation marks omitted). In
3 reviewing Wills’s claims, we consider whether: (1) expert testimony was required to prove
4 causation; (2) under the Jones Act, the standards for the admissibility of expert testimony apply
5 in full force; (3) the district court abused its discretion in excluding Wills’s proposed expert
6 testimony; and (4) in the absence of admissible evidence on the issue of causation, summary
7 judgment was properly granted to defendants. Answering these questions affirmatively, we agree
8 with the district court’s conclusion that Wills failed to satisfy her burden to prove causation and
9 that summary judgment in favor of defendants was warranted.

10 A. Expert Testimony Necessary to Prove Causation

11 Wills argues that summary judgment was improperly granted because expert
12 testimony was not necessary to satisfy her burden to prove causation. It is well settled that expert
13 testimony is unnecessary in cases where jurors “are as capable of comprehending the primary
14 facts and of drawing correct conclusions from them as are witnesses possessed of special or
15 peculiar training.” *Salem v. United States Lines Co.*, 370 U.S. 31, 35 (1962) (internal quotation
16 marks omitted). Where, however, the nexus between the injury and the alleged cause would not
17 be obvious to the lay juror, “[e]xpert evidence is often required to establish the causal connection
18 between the accident and some item of physical or mental injury.” *Moody v. Maine Cent. R.R.*
19 *Co.*, 823 F.2d 693, 695 (1st Cir. 1987). In a case such as this, where an injury has multiple
20 potential etiologies, expert testimony is necessary to establish causation, even in view of
21 plaintiff’s reduced burden to prove causation. *See Claar v. Burlington N. R.R. Co.*, 29 F.3d 499,
22 503-04 (9th Cir. 1994) (affirming district court’s grant of summary judgment following

1 plaintiff's failure to proffer admissible expert testimony on the issue of causation in a case
2 brought under the Federal Employers' Liability Act); *Moody*, 823 F.2d at 695 (affirming the
3 district court's grant of summary judgment to defendants when plaintiff failed to proffer
4 admissible expert testimony linking workplace harassment to emotional trauma). Indeed, this
5 court has never held that a Jones Act plaintiff can survive summary judgment in a toxic tort case
6 without admissible expert testimony on the issue of causation.

7 Wills argues, however, that our holding in *Ulfik v. Metro-North Commuter R.R.*,
8 77 F.3d 54 (2d Cir. 1996) stands for the proposition that a Jones Act or FELA plaintiff may
9 survive summary judgment, even in the absence of expert testimony on the issue of causation.
10 In *Ulfik*, the plaintiff brought a FELA action against defendants for an injury suffered as a result
11 of a fall following plaintiff's exposure to paint fumes. *Id.* at 56-57. We concluded that summary
12 judgment was not warranted because no expert testimony was necessary to establish the causal
13 nexus between inhaling paint fumes and the dizziness that allegedly led to plaintiff's fall. *Id.* at
14 59-60. This case is wholly distinguishable from *Ulfik* in that, here, we cannot rely on
15 circumstantial, lay evidence alone to create a genuine issue of material fact as to whether toxins
16 emitted from defendants' vessels caused decedent's cancer. As we have noted, the causal link
17 between exposure to toxins and other behavior and squamous cell carcinoma is sufficiently
18 beyond the knowledge of the lay juror that expert testimony is required to establish causation.
19 *See Claar*, 29 F.3d at 504 (finding that expert testimony was required to establish the causal
20 nexus between plaintiffs' injuries and their exposure to harmful chemicals). Accordingly, we
21 agree with the district court that Wills was required to proffer expert testimony on the issue of
22 causation, and, in the absence of such testimony, that the district court properly granted

1 defendants' motion for summary judgment.

2 B. Daubert's Standards Apply in the Context of the Jones Act

3
4 Wills also contends that even if expert testimony on the issue of causation is
5 required to survive summary judgment, she proffered admissible expert testimony, which the
6 district court improperly excluded. Specifically, Wills maintains that because her burden of
7 proof on the issue of causation is relaxed under the Jones Act, the standards of reliability and
8 credibility used to determine admissibility of expert testimony under Rule 702 and *Daubert* are
9 also relaxed. To support this contention, Wills relies on *Hines v. Consolidated Rail Corp.*, 926
10 F.2d 262 (3d Cir. 1991). In *Hines*, the plaintiff brought suit against his employer under the
11 Federal Employers' Liability Act ("FELA"), 45 U.S.C. §§ 51-60, a statute, which, like the Jones
12 Act, provides plaintiffs with a reduced burden of proof to establish causation.⁸ In deciding
13 plaintiff's claims, the Third Circuit, in a decision that predates *Daubert*, stated that "the standard
14 [of proof] under FELA can significantly influence a determination of the admissibility of [expert]
15 testimony." *Hines*, 926 F.2d at 269. For the reasons discussed, we find this argument unavailing
16 and hold that *Daubert's* standards for determining the admissibility of expert testimony apply
17 regardless of whether the plaintiff's burden to prove causation is reduced.

18 Although Wills correctly characterizes her burden of proof to establish causation

⁸ The Jones Act incorporates FELA by reference. Under both statutes, the plaintiff bears a reduced burden of proof with respect to causation. Accordingly, in determining this appeal, we refer to the law developed under FELA, as well as that developed under the Jones Act. *See Puthe v. Exxon Shipping Co.*, 2 F.3d 480, 482 (2d Cir. 1993) (noting that analysis of plaintiff's Jones Act claims is guided by FELA caselaw); *Johannessen v. Gulf Trading & Transp. Co.*, 633 F.2d 653, 656 (2d Cir.1980) (recognizing that the standard of liability under the Jones Act is the same as that under FELA).

1 under the Jones Act, she fails to appreciate that the standards for determining the reliability and
2 credibility of expert testimony are not altered merely because the burden of proof is relaxed. As
3 both the Sixth and Ninth Circuits observed in the context of FELA claims, “the standard of
4 causation . . . and the standards for admission of expert testimony under the Federal Rules of
5 Evidence are distinct issues and do not affect one another.” *Claar*, 29 F.3d at 503; *see also*
6 *Taylor v. Consol. Rail Corp.*, 114 F.3d 1189 (Table), 1997 WL 321142, at *6-7 (6th Cir. June 11,
7 1997) (quoting *Claar*, 29 F.3d at 503, and noting that “[i]t is well established that the
8 [admissibility of expert testimony] is controlled – even in cases aris[ing] under FELA[, which,
9 like the Jones Act, has a relaxed burden of proof to show causation] – by the Federal Rules of
10 Evidence and the seminal case of *Daubert*”) (internal citation omitted). We agree that even
11 where, as here, plaintiff faces a relaxed burden of proof with regard to causation, the district
12 court’s admission of expert testimony is nonetheless governed by the strictures of Rule 702 and
13 *Daubert*.⁹

14
15 C. The District Court’s Exclusion of Dr. Bidanset’s Testimony Was Not an
16 Abuse of Discretion
17

⁹ Although we agree with the Sixth and Ninth Circuits that *Daubert* applies in the context of the Jones Act, we recognize that *Daubert*’s relevancy inquiry may be affected by the reduced statutory burden of proof in such cases. *See Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311, 1321 (9th Cir. 1995) (noting, in the context of remand from the Supreme Court, that, where the burden of proof to establish causation was “by a preponderance of the evidence,” expert testimony that would fail to satisfy *Daubert*’s reliability inquiry might nonetheless satisfy the relevance inquiry because of the reduced burden of proof). We express no opinion on this issue of whether and how *Daubert*’s relevancy inquiry is affected by a reduced burden of proof, however, as our conclusion that Dr. Bidanset’s testimony was properly excluded rests solely on the fact that the testimony failed to satisfy any of the *Daubert* factors for assessing reliability.

1 Wills contends that the district court’s exclusion of Dr. Bidanset’s testimony was
2 an abuse of discretion. First, she maintains that the district court’s concerns that Dr. Bidanset
3 failed to establish that exposure to carcinogenic substances while aboard defendants’ ships was
4 the specific cause of decedent’s cancer were misplaced. Under the Jones Act, she claims, a
5 plaintiff need not demonstrate that defendant’s action caused the injury, but rather a plaintiff
6 need show only that defendant’s actions were one of perhaps many causes of the injury. Wills’s
7 arguments miss the point of the district court’s conclusions.

8 Rule 702 of the Federal Rules of Evidence, which governs the admissibility of
9 scientific or technical expert testimony, provides:

10 If scientific, technical, or other specialized knowledge will assist the
11 trier of fact to understand the evidence or to determine a fact in issue,
12 a witness qualified as an expert by knowledge, skill, experience, training,
13 or education, may testify thereto in the form of an opinion or otherwise, if
14 (1) the testimony is based upon sufficient facts or data, (2) the testimony is
15 the product of reliable principles and methods, and (3) the witness has applied
16 the principles and methods reliably to the facts of the case.

17
18 In *Daubert*, the Supreme Court made clear that the district court has a “gatekeeping” function
19 under Rule 702, and is charged with “the task of ensuring that an expert’s testimony both rests on
20 a reliable foundation and is relevant to the task at hand.” 509 U.S. at 597. In fulfilling this role,
21 the district court must consider both the reliability and relevance of the proffered testimony. In
22 gauging reliability, the district court should consider the indicia of reliability identified in Rule
23 702, namely, (1) that the testimony is grounded on “sufficient facts or data;” (2) that the
24 testimony “is the product of reliable principles and methods;” and (3) that “the witness has
25 applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702. In so
26 doing, the district court must “make certain that an expert, whether basing testimony upon

1 professional studies or personal experience, employs in the courtroom the same level of
2 intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho Tire*
3 *Co.*, 526 U.S. at 152.

4 Although Rule 702 sets forth specific criteria for the district court’s consideration,
5 these criteria are not exhaustive. The district court may consider a number of other factors in
6 determining the reliability of the proffered testimony, including: (1) whether a theory or
7 technique has been or can be tested; (2) “whether the theory or technique has been subjected to
8 peer review and publication;” (3) “the technique’s known or potential rate of error” and “the
9 existence and maintenance of standards controlling the technique’s operation;” and (4) whether a
10 particular technique or theory has gained general acceptance in the relevant scientific community.
11 *See Daubert*, 509 U.S. at 593-94. In the instant case, the district court rejected Dr. Bidanset’s
12 testimony on the grounds that it failed to comport with any of the relevant *Daubert* factors for
13 reliability of expert testimony and granted summary judgment in favor of defendants because
14 Wills failed to proffer admissible evidence of causation.

15 Wills first challenges the district court’s exclusion of Dr. Bidanset’s testimony on
16 the grounds that it failed to quantify the dosage of the toxin to which decedent was allegedly
17 exposed. Wills maintains that the court misapprehended Dr. Bidanset’s “oncogene theory” of
18 causation and excluded the theory merely because it was not generally accepted in the scientific
19 community. She further argues that the district court’s requirement that Dr. Bidanset quantify
20 dosage was unfair, as, she contends, defendants failed to monitor properly the concentration of
21 toxins on ships upon which decedent worked, and she was not permitted sufficient discovery to
22 determine the dosage amount. We find no abuse of discretion.

1 Dr. Bidanset’s oncogene theory of causation, as the district court noted in its
2 comprehensive and thorough discussion, *see Wills*, 2002 WL 140542, at *13-15, posits that
3 decedent’s cancer was caused by a single exposure – regardless of the quantity of the dosage – of
4 toxic chemicals such as benzene and PAHs. Although the district court observed that the
5 oncogene theory was not generally accepted in the scientific community, *id.* at *13, this factor
6 was not determinative in the court’s decision to exclude Dr. Bidanset’s testimony. Instead, the
7 district court considered the oncogene theory in light of *Daubert*’s four factors for reliability and
8 concluded that the oncogene theory failed to satisfy *any* of the relevant factors. *Id.* at *13-14.
9 The district court determined that there was no evidence that the theory had been tested or
10 subjected to peer review. *Id.* at *13. Indeed, Dr. Bidanset admitted that the theory was the
11 product of his own “background experience and reading,” rather than scientific testing or peer
12 review. Bidanset Dep. at 67. Further, the court found that Dr. Bidanset did not state a known or
13 potential error rate for the theory. *Id.* Finally, the district court determined that the “dose-
14 response relationship” was the more generally accepted theory of causation in the scientific
15 community, and that the oncogene theory, as Bidanset conceded in his deposition testimony, was
16 controversial. *Id.* at *14. The district court’s assessment was entirely appropriate for discharging
17 its duty to determine whether the “reasoning or methodology underlying the [proposed expert]
18 testimony is scientifically valid.” *Daubert*, 509 U.S. at 592-93.

19 Dr. Bidanset’s proposed expert testimony on the issue of dosage amount also
20 relied on the affidavit testimony of Mark Miller, a seaman who worked on the same ships as
21 decedent for a period of five months in 1995. In his affidavit, Miller averred that he and other
22 seamen had suffered from various ailments that could be attributed to harmful exposure to toxins.

1 Miller also referred to conversations that he had with decedent regarding decedent's symptoms of
2 exposure to dangerous toxins. Based on these observations, Miller opined that decedent was
3 exposed to a harmful dose of toxins while aboard defendants' ships. Dr. Bidanset relied on
4 Miller's testimony in concluding that exposure to toxins while aboard defendants' ships was the
5 cause of decedent's squamous cell carcinoma. The district court, however, found Miller's
6 testimony insufficient to support expert testimony. *Id.* at *11.

7 We agree with the district court that Miller's testimony was insufficient to
8 establish that decedent had been exposed to a harmful amount of toxins or that such exposure
9 caused his cancer. First, Miller, a seaman, lacked the "practical experience and necessary
10 academic training" to analyze and quantify the dosage of the toxins emitted aboard defendants'
11 ships. *See McCulloch v. H.B. Fuller Co.*, 61 F.3d 1038, 1042-43 (2d Cir. 1995) (affirming
12 district court's admission of chemical engineer's expert testimony linking plaintiff's injury to
13 exposure to toxic fumes). Absent some technical or professional expertise in detecting and
14 quantifying toxic emissions, Miller's testimony was insufficient to establish dosage amount.
15 Moreover, during decedent's ten-year career at sea, he served aboard the same ship as Miller only
16 for a period of five months – and then in different areas of the ship and in different capacities.
17 There can be no question that lay opinions of this sort provide an insufficient basis for an expert
18 to extrapolate the amount of toxins to which decedent was exposed.

19 In addition to the fact that it failed to satisfy any of the *Daubert* factors for
20 reliability, Dr. Bidanset's proposed expert testimony suffered from another fatal flaw. Although
21 Dr. Bidanset conceded that cigarette smoking and alcohol consumption were major risk factors
22 for the development of squamous cell carcinoma, he failed to account for these variables in

1 concluding that decedent’s cancer was caused by exposure to toxic chemicals such as benzene
2 and PAHs. *See Amorgianos*, 303 F.3d at 265 (noting that expert testimony may be excluded
3 where “the flaw is large enough that the expert lacks good grounds for his or her conclusions”)
4 (internal quotation marks omitted). We agree with the district court that Dr. Bidanset’s failure to
5 account for decedent’s smoking habit and alcohol consumption as possible causes of decedent’s
6 squamous cell carcinoma, strongly indicated that Dr. Bidanset’s conclusions were not grounded
7 in reliable scientific methods, as required by *Daubert*.

8 Absent admissible expert testimony on the issue of causation, Wills was unable to
9 sustain her burden to prove causation. It is well established that summary judgment is warranted
10 where there is an absence of evidence that could “‘justify with reason the conclusion that
11 employer negligence played any part, *even the slightest*, in producing the injury.’” *Diebold v.*
12 *Moore McCormack Bulk Transp. Lines, Inc.*, 805 F.2d 55, 57-58 (2d Cir. 1986) (emphasis in
13 original) (quoting *Rogers v. Mo. Pac. R.R. Co.*, 352 U.S. 500, 506 (1957)); *see also Quam v.*
14 *Mobil Oil Corp.*, 599 F.2d 42, 43 (2d Cir. 1979) (affirming judgment as a matter of law against
15 Jones Act plaintiff where “[t]here was simply no evidence of causation”). Accordingly,
16 defendants’ motion for summary judgment was properly granted.

17 **IV. The District Court’s Discovery Rulings**

18 On appeal, Wills also challenges several of the district court’s discovery rulings
19 on the grounds that the rulings prevented her from obtaining the information necessary to sustain
20 her burden to establish causation. In particular, she argues that the district court’s exclusion of
21 two proposed expert witnesses as untimely and the court’s stay of discovery were improper. For
22 the reasons that follow, we disagree.

1 A. The District Court's Exclusion of Haas and Neugut

2 In an order dated February 26, 2001, the district court granted defendants'
3 application to preclude as untimely the expert opinions of Dr. Alfred I. Neugut, an
4 epidemiologist, and Mr. Paul Haas, an industrial hygienist. Wills subsequently petitioned the
5 court to reconsider its decision. The district court denied plaintiff's request with prejudice.
6 Despite Wills's arguments to the contrary, these exclusions cannot be characterized as abuses of
7 discretion.

8 On October 14, 1999, the district court ordered Wills to disclose, pursuant to Fed.
9 R. Civ. P. 26(a)(2)(A) and (B), all potential experts no later than November 1, 1999. On
10 November 19, 1999, Wills produced Dr. Bidanset's expert report, but did not produce expert
11 reports for either Haas or Dr. Neugut. In a letter dated December 6, 2000, Wills informed the
12 court for the first time that she intended to rely upon the opinion of Haas to meet her burden to
13 prove causation; however, she did not produce Haas's report at that time. In February 2001, after
14 defendants had filed their motion for summary judgment, Wills identified Dr. Neugut as an
15 expert for the first time. She produced expert reports for both proposed experts with her
16 response to defendants' motion for summary judgment.

17 As we noted earlier, the district court has "wide discretion" to direct the discovery
18 process. *See In re Fitch, Inc.*, 330 F.3d at 108 (internal quotation marks omitted). A district
19 court abuses its discretion "when the action taken was improvident and affected the substantial
20 rights of the parties." *Goetz v. Crosson*, 41 F.3d 800, 805 (2d Cir. 1994) (internal quotation
21 marks omitted). Here, the district court provided Wills ample opportunity to identify experts and
22 submit expert reports in a timely fashion, as directed by Fed. R. Civ. P. 26(a)(2)(B). Wills,

1 however, did not avail herself of these opportunities and instead, chose to identify experts one at
2 a time, in a manner that appeared intended to delay completion of the pre-trial process.

3 Moreover, it is unclear whether the substance of the proposed experts' testimony
4 would be sufficient to allow Wills to survive summary judgment. Haas's proposed expert
5 testimony asserted that defendants did not comply with their obligations to monitor and perform
6 health maintenance as required by OSHA regulations. Dr. Neugut relied upon a number of
7 epidemiological studies that purportedly established a relationship between the toxins to which
8 decedent was allegedly exposed and a variety of cancers. Although both experts could correct a
9 particular deficit identified by the district court in its review of Dr. Bidanset's expert testimony,
10 neither expert fully satisfied all of the issues that concerned the district court in determining that
11 Wills had failed to satisfy her burden to prove causation. Accordingly, because the district
12 court's exclusion of the experts' testimony was neither improvident nor affected plaintiff's
13 substantial rights, there was no abuse of discretion.

14 B. The District Court's Stay of Discovery Was Not Improper

15 In December 1999, the district court stayed Wills's request to conduct depositions
16 of a number of defendant employees and to obtain various documents, pending resolution of
17 defendants' motion to exclude Dr. Bidanset's expert testimony. Shortly thereafter, in January
18 2000, the district court lifted the stay only for the purpose of allowing defendants to provide
19 Wills copies of defendants' emissions monitoring reports conducted pursuant to OSHA and coast
20 guard regulations, and any medical records pertaining to decedent. *Wills*, 2000 WL 42201, at *3.
21 The district court, however, determined that the December 6, 1999 stay would remain in effect
22 with regard to Wills's other discovery requests until the court determined the admissibility of Dr.

1 Bidanset’s proposed expert testimony. *Id.*

2 On appeal, Wills argues that the stay was improper because it resulted in an
3 incomplete record and prevented Wills’s additional expert witnesses from completing and
4 submitting their expert reports in a timely fashion. We find this argument unavailing.

5 It is axiomatic that the trial court enjoys wide discretion in its handling of pre-trial
6 discovery. *In re Fitch*, 330 F.3d at 108. We will reverse a district court’s discovery ruling only
7 upon a clear showing of an abuse of discretion. *Id.* In the instant case, the district court’s order
8 staying discovery pending a decision on the admissibility of Dr. Bidanset’s expert testimony was
9 well within the scope of its discretion. The stay was limited to Wills’s request to conduct
10 depositions of a number of defendants’ employees and document demands for voluminous
11 records relating to many of defendants’ vessels. Further, the stay was not indefinite, but rather
12 was effective until the district court determined the issue of Dr. Bidanset’s admissibility as an
13 expert witness under Rule 702. Finally, following the exclusion of Dr. Bidanset as an expert, the
14 district court permitted Wills an opportunity to identify what discovery she had been prevented
15 from obtaining and why such discovery “would lead the Court to a different conclusion on [the
16 issue of] causation.” *Wills*, 2002 WL 140542, at *17. In no way can such a stay be characterized
17 as an abuse of discretion. In a complex toxic tort suit, the district court properly limited
18 discovery to those requests tailored to provide evidence of the salient issue – causation.
19 Moreover, given the district court’s obligation to manage effectively pre-trial proceedings, it was
20 not improper to limit plaintiff’s discovery requests where there were concerns that such requests
21 were intended only to “create a causation theory unsupported by current medical science or to
22 harass defendants into an offer of settlement.” *Wills*, 2002 WL 1482624, at *3.

1 _____V. **Wills’s Claim for Maintenance and Cure**

2 In her complaint, Wills also alleged several claims under general maritime law.
3 Of these general maritime claims, Wills has presented only her claim for maintenance and cure
4 on appeal; thus, her remaining maritime claims are waived. *See LoSacco v. City of Middletown*,
5 71 F.3d 88, 92-93 (2d Cir.1995) (noting that arguments not raised on appeal are waived). With
6 regard to her claim for maintenance and cure, Wills claims that although decedent’s illness was
7 not diagnosed while he was employed by defendants, his illness manifested itself during his
8 employment. She argues that defendants are obligated to provide maintenance and cure, and that
9 the district court improperly granted summary judgment in favor of defendants on this issue. We
10 disagree.

11 The general maritime law of the United States provides seamen who have become
12 ill or injured while in a ship’s service with the right to maintenance and cure. *Ammar v. United*
13 *States*, 342 F.3d 133, 142 (2d Cir. 2003) (collecting cases). “Maintenance” refers to a
14 shipowner’s duty to provide food and lodging to an ill or injured seaman, comparable to the kind
15 and quality received aboard ship, *id.*, while “cure” refers to “a shipowner’s obligation to provide
16 [such] medical care to such seamen” during the period of recovery or rehabilitation from the
17 illness or injury to the point of maximum recovery, *Calo v. Ocean Ships, Inc.*, 57 F.3d 159, 162
18 (2d Cir. 1995). Both obligations attach irrespective of shipowner negligence and regardless of
19 whether the illness or injury was job-related. *Ammar*, 342 F.3d at 142 (discussing maintenance);
20 *Calo*, 57 F.3d at 162 (discussing cure).

21 Ordinarily, the no-fault obligation of shipowners to provide maintenance and cure
22 extends only to a seaman who becomes ill or injured while “in the service of the ship.” *See*

1 *Aguilar v. Standard Oil Co.*, 318 U.S. 724, 731-32 (1943) (internal quotation marks omitted). A
2 seaman whose illness or injury manifests after conclusion of his or her employment with the
3 shipowner is generally not entitled to recover for maintenance and cure absent “convincing proof
4 of causal connection” between the injury or illness and the seaman’s service. *Brahms v. Moore-*
5 *McCormack Lines, Inc.*, 133 F. Supp. 283, 286 (S.D.N.Y. 1955) (citing *Miller v. Lykes Bros-*
6 *Ripley S.S. Co.*, 98 F.2d 185, 186 (5th Cir. 1938); *Capurro v. The All America*, 106 F. Supp. 693,
7 694 (E.D.N.Y. 1952)).

8 To support her contention that decedent’s illness manifested itself during his
9 employment aboard defendants’ ships, Wills refers to the affidavit of Mark Miller, who testified
10 that “decedent complained to me on several occasions of symptoms he was experiencing while
11 working aboard [defendants’ ship] in 1995.” As we have noted, Miller, a fellow seaman, lacks
12 the medical training or expertise necessary to conclude reliably that decedent’s squamous cell
13 carcinoma presented itself while decedent was employed by defendants or was caused by
14 exposure to toxic emissions while in defendants’ employ.

15 Wills further argues that even if decedent’s illness manifested itself following the
16 conclusion of his employment with defendants, defendants are nonetheless obligated to pay
17 maintenance and cure because decedent’s condition was caused by exposure to toxic emissions
18 while aboard defendants’ ships. Again, we disagree. As has been discussed elsewhere in this
19 opinion, Wills has not established that decedent’s illness was caused by exposure to toxic
20 emissions while aboard defendants’ ships. Accordingly, this claim was properly dismissed on
21 summary judgment.

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CONCLUSION

Affirming the district court’s grant of summary judgment to defendants, we conclude that the district court did not abuse its discretion when it stayed discovery or when it excluded Wills’s proffered expert testimony as scientifically unreliable or untimely. We also conclude that the district court did not err in declining to apply *The Pennsylvania* Rule to Wills’s claims. Because Wills lacked the required expert testimony or evidence on the issue of causation, the district court properly granted summary judgment on Wills’s Jones Act claim. Finally, Wills was not entitled to recover on her maritime claim for maintenance and cure.