

669 F.3d 1349, 101 U.S.P.Q.2d 1414  
(Cite as: 669 F.3d 1349)

## H

United States Court of Appeals,  
Federal Circuit.  
Olusegun FALANA, Plaintiff–Appellee,  
v.  
KENT STATE UNIVERSITY and Alexander J.  
Seed, Defendants–Appellants.

No. 2011–1198.  
Jan. 23, 2012.

**Background:** Putative co-inventor brought action seeking correction of inventorship of patent relating to chiral compounds for liquid crystals used in electronic devices. Following a bench trial, the United States District Court for the Northern District of Ohio, [David D. Dowd, Jr.](#), Senior District Judge, 2010 WL 5178838, entered judgment in favor of, and awarded attorney fees to, putative co-inventor. Patent assignee appealed.

**Holdings:** The Court of Appeals, [Linn](#), Circuit Judge, held that:

- (1) claims of patent were not limited to an optically active compound having a substantially temperature independent helical twisting power (HTP);
- (2) any error by the district court in excluding two exhibits from evidence was harmless; and
- (3) putative inventor's contribution passed the threshold required for joint inventorship under patent law.

Affirmed in part.

West Headnotes

### [1] Patents 291 🔑324.5

#### 291 Patents

##### 291XII Infringement

##### 291XII(B) Actions

##### 291k324 Appeal

291k324.5 k. Scope and extent of review in general. [Most Cited Cases](#)

A district court's patent claim construction is reviewed de novo.

### [2] Patents 291 🔑101(3)

#### 291 Patents

##### 291IV Applications and Proceedings Thereon

##### 291k101 Claims

##### 291k101(3) k. Limitations in general.

#### Most Cited Cases

Claims of patent relating to chiral compounds for liquid crystals used in electronic devices were not limited to an optically active compound having a substantially temperature independent helical twisting power (HTP), absent express limitations concerning a HTP that was substantially independent of temperature.

### [3] Patents 291 🔑165(2)

#### 291 Patents

##### 291IX Construction and Operation of Letters

##### Patent

##### 291IX(B) Limitation of Claims

291k165 Operation and Effect of Claims in General

291k165(2) k. Claims as measure of patentee's rights. [Most Cited Cases](#)

It is the claims, not the written description, which define the scope of the patent right.

### [4] Courts 106 🔑96(7)

#### 106 Courts

106II Establishment, Organization, and Procedure

##### 106II(G) Rules of Decision

106k88 Previous Decisions as Controlling or as Precedents

106k96 Decisions of United States Courts as Authority in Other United States Courts

106k96(7) k. Particular questions or subject matter. [Most Cited Cases](#)

The admission of evidence in a patent case is a procedural question that is controlled by regional

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circuit law.

**[5] Federal Courts 170B** 823

170B Federal Courts

170BVIII Courts of Appeals

170BVIII(K) Scope, Standards, and Extent

170BVIII(K)4 Discretion of Lower Court

170Bk823 k. Reception of evidence.

**Most Cited Cases**

In the Sixth Circuit, a district court's decision to admit or exclude evidence is reviewed for abuse of discretion.

**[6] Federal Courts 170B** 823

170B Federal Courts

170BVIII Courts of Appeals

170BVIII(K) Scope, Standards, and Extent

170BVIII(K)4 Discretion of Lower Court

170Bk823 k. Reception of evidence.

**Most Cited Cases**

**Federal Courts 170B** 895.5

170B Federal Courts

170BVIII Courts of Appeals

170BVIII(K) Scope, Standards, and Extent

170BVIII(K)6 Harmless Error

170Bk895.5 k. Evidence in general.

**Most Cited Cases**

In the Sixth Circuit, a district court abuses its discretion in admitting or excluding evidence when it bases its decision on errors of law or clearly erroneous factual determinations; moreover, even if the lower court's decision amounts to an abuse of discretion, it will not be disturbed on appeal if it did not result in a substantial injustice, as no error in the admission or exclusion of evidence is ground for reversal or granting a new trial unless refusal to take such action appears to the court to be inconsistent with substantial justice.

**[7] Patents 291** 324.56

291 Patents

291XII Infringement

291XII(B) Actions

291k324 Appeal

291k324.56 k. Harmless error. **Most**

**Cited Cases**

Under Sixth Circuit law, any error by the district court in excluding from evidence, without providing any explanation, patent application and scientific article offered to allegedly show that the synthesis protocol was in the prior art and was in fact known to named co-inventor prior to his work with putative co-inventor, in putative co-inventor's action seeking correction of inventorship of patent relating to chiral compounds for liquid crystals used in electronic devices, was harmless; district court permitted named co-inventor the opportunity to explain the portions of the synthesis protocol that were known in the art and thus the exhibits would have been cumulative of his testimony.

**[8] Patents 291** 324.5

291 Patents

291XII Infringement

291XII(B) Actions

291k324 Appeal

291k324.5 k. Scope and extent of review in general. **Most Cited Cases**

**Patents 291** 324.55(2)

291 Patents

291XII Infringement

291XII(B) Actions

291k324 Appeal

291k324.55 Questions of Fact, Verdicts, and Findings

291k324.55(2) k. Clearly erroneous findings. **Most Cited Cases**

Under patent law, inventorship is a question of law that is reviewed without deference, with the district court's underlying findings of fact reviewed for clear error.

**[9] Patents 291** 112.1

291 Patents

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291IV Applications and Proceedings Thereon

291k112 Conclusiveness and Effect of Decisions of Patent Office

291k112.1 k. In general. [Most Cited Cases](#)

Because the issuance of a patent creates a presumption that the named inventors are the true and only inventors, the burden of showing misjoinder or nonjoinder of inventors is a heavy one and must be proved by clear and convincing evidence.

**[10] Patents 291** 92

291 Patents

291III Persons Entitled to Patents

291k92 k. Joint inventors. [Most Cited Cases](#)

Under patent law, a joint invention is the product of a collaboration between two or more persons working together to solve the problem addressed. [35 U.S.C.A. § 116](#).

**[11] Patents 291** 92

291 Patents

291III Persons Entitled to Patents

291k92 k. Joint inventors. [Most Cited Cases](#)

The critical question for joint conception is who conceived, as that term is used in the patent law, the subject matter of the claims at issue; a contribution to one claim is enough. [35 U.S.C.A. § 116](#).

**[12] Patents 291** 92

291 Patents

291III Persons Entitled to Patents

291k92 k. Joint inventors. [Most Cited Cases](#)

Under patent law, each joint inventor must contribute in some significant manner to the conception of the invention. [35 U.S.C.A. § 116](#).

**[13] Patents 291** 90(1)

291 Patents

291III Persons Entitled to Patents

291k90 Original Inventors and Priority Between Inventors

291k90(1) k. In general. [Most Cited Cases](#)

Under patent law, conception of a chemical compound requires knowledge of both the specific chemical structure of the compound and an operative method of making it.

**[14] Patents 291** 90(1)

291 Patents

291III Persons Entitled to Patents

291k90 Original Inventors and Priority Between Inventors

291k90(1) k. In general. [Most Cited Cases](#)

A putative inventor who envisioned the structure of a novel genus of chemical compounds and contributes the method of making that genus contributes to the conception of that genus; such an inventor, however, does not necessarily have a right to claim inventorship of all species within that genus which are discovered in the future, as once the method of making the novel genus of compounds becomes public knowledge, it is then assimilated into the storehouse of knowledge that comprises ordinary skill in the art.

**[15] Patents 291** 92

291 Patents

291III Persons Entitled to Patents

291k92 k. Joint inventors. [Most Cited Cases](#)

Under patent law, joint inventorship arises only when collaboration or concerted effort occurs, that is, when the inventors have some open line of communication during or in temporal proximity to their inventive efforts.

**[16] Patents 291** 92

291 Patents

291III Persons Entitled to Patents

291k92 k. Joint inventors. [Most Cited Cases](#)

Putative inventor's contribution of the method used by the team of which he was a part for making the claimed compounds was enough of a contribution to conception to pass the threshold required for joint inventorship under patent law. [35 U.S.C.A. §](#)

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116.

**[17] Patents 291**  **324.2**

291 Patents

291XII Infringement

291XII(B) Actions

291k324 Appeal

291k324.2 k. Decisions reviewable.

**Most Cited Cases**

A decision to award attorney fees under patent law is not final and appealable before the award has been quantified. 35 U.S.C.A. § 285.

**[18] Federal Courts 170B**  **584**

170B Federal Courts

170BVIII Courts of Appeals

170BVIII(C) Decisions Reviewable

170BVIII(C)2 Finality of Determination

170Bk584 k. Nature of final judgment, decree or order in general. **Most Cited Cases**

A nonfinal decision does not become final simply because it is issued in the same order as a final decision.

**Patents 291**  **328(2)**

291 Patents

291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents

291k328 Patents Enumerated

291k328(2) k. Original utility. **Most Cited**

**Cases**

6,830,789. Construed.

\*1351 **Bruce H. Wilson**, of Akron, OH, argued for plaintiff-appellee.

**R. Eric Gaum**, Hahn Loeser & Parks, LLP, of Cleveland, OH, argued for defendants-appellants. With him on the brief were **Steven J. Mintz** and **Scott M. Oldham**.

Before **LINN**, **PROST**, and **REYNA**, Circuit Judges.

**LINN**, Circuit Judge.

Dr. Olusegun Falana (“Falana”) filed a complaint with the U.S. District Court for the Northern District of Ohio against Kent State University (“Kent State”) and the inventors listed on the face of U.S. Patent No. 6,830,789 (“the ‘789 Patent”) seeking correction of inventorship under 35 U.S.C. § 256. Falana alleged that he was an omitted co-inventor of the ‘789 Patent. Following a bench trial, the district court agreed with Falana and ordered the United States Patent and Trademark Office (“USPTO”) to issue a certificate of correction adding Falana as a named inventor on the ‘789 Patent. The district court, without the benefit of briefing, also found the \*1352 case to be exceptional under 35 U.S.C. § 285 and awarded attorney fees to Falana. Findings of Fact, Conclusions of Law, and Order, *Falana v. Kent State Univ.*, No. 5:08-cv-720, 2010 WL 5178838 (N.D. Ohio Dec. 15, 2010) (“*Opinion*”). Kent State appeals. For the reasons explained below, this court affirms the district court’s judgment as to inventorship and does not address the district court’s exceptional case determination and attorney fees award, which are not properly before us.

I. BACKGROUND

Kent Displays, Inc. (“KDI”) is a privately owned corporation that was established in 1993 as a spin-off technology company from Kent State. KDI designs and manufactures liquid crystal displays (“LCDs”) used in electronic devices, such as cell phones, digital cameras, and e-books. In 1997, KDI started a research program to develop chiral additives. Chiral additives are chemical compounds that can be used to improve the performance characteristics of LCDs, such as the display’s color, contrast, and brightness. One of the goals of the project was to develop a proprietary chiral additive so that KDI could obtain its own patents and avoid having to obtain licenses to other patents in the field.

Dr. Joseph Doane (“Doane”), Chief Science Officer of KDI, hired Dr. Alexander Seed (“Seed”), an Associate Professor at Kent State, to work on

this project for KDI. Seed was hired to synthesize and develop chiral additives for KDI. Doane and Seed sought to develop a temperature independent, high helical twisting power chiral additive. Temperature independence is an important characteristic for portable LCDs, which must be operable over a wide range of temperatures.

Due to other constraints on his time, Seed quickly found that he was personally unable to pursue the laboratory research required by the KDI project. In September 1997, Seed placed an advertisement in a trade magazine seeking a post-doctoral researcher to synthesize chiral organic molecules for the KDI research project. Seed selected Falana, who had received his Ph.D. in chemistry from Brandeis University, to start the advertised position on January 1, 1998. Both Seed and Falana were listed as “Co-Research Institution Investigators” on grant applications filed with the National Science Foundation.

Seed expected Falana to work independently and to have ideas of his own while working on the KDI project. Seed, Falana, and Doane were physically located in Kent, Ohio and regularly interacted with each other during the course of the project. Falana synthesized numerous compounds while working on the KDI project. In doing so, Falana synthesized compounds “of his own accord” and those suggested by Seed. These compounds were then tested by Dr. Asad Khan (“Khan”) at KDI to determine their helical twisting power, solubility in a commercial liquid host material, and performance over a range of temperatures. In due course, Khan reported the outcomes of these tests to Seed, Falana, and Doane and the outcomes were used to direct future experiments. Dr. Seed described the interaction between Seed, Falana, and Doane as “very much a team process.”

In March 1999, while conducting research for the KDI project, Falana developed a synthesis protocol (“Synthesis Protocol”) for making a novel class, or “genus,” of chemical compounds: naphthyl substituted TADDOLs. Naphthyl substituted TAD-

DOLs differ from the general class of TADDOLs in that they include a substituted naphthyl aryl group, rather than a phenyl, substituted phenyl, or naphthyl aryl group. Using this protocol, Falana synthesized a compound \*1353 within this genus that was designated “Compound 7.” Compound 7 was an “SS” enantiomer. “SS” and “RR” enantiomers are chemical compounds with molecular structures having mirror-image relationships to one another; RR and SS enantiomers are identical except for the direction of the molecule's helical twist. Falana's Synthesis Protocol could be used, and was used, to synthesize both RR and SS enantiomers. After testing, Compound 7 was found to exhibit substantial temperature independence between -20 and +30 degrees Celsius, but did not exhibit temperature independence outside of that range. Thus, for purposes of the research project, Compound 7 was a “great improvement” and represented “significant progress,” but did not completely satisfy the goals of the project.

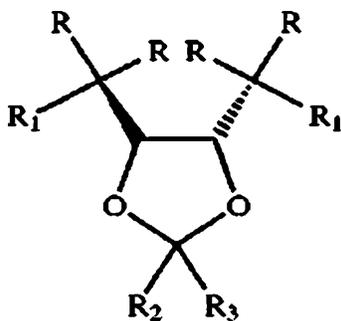
In April 1999, Doane authored a letter to the Immigration and Naturalization Service in support of Falana's immigration status. In this letter, Doane described Falana as “the sole organic chemist responsible for the synthesis of the chiral materials” and stated that “his outstanding performance led to a patent we are currently preparing and a proposal we have submitted to [the National Science Foundation].” In September 1999, Falana resigned from KDI and Kent State to take another position.

In early 2000, Seed synthesized a compound designated Compound 9. Like Compound 7, Compound 9 was a naphthyl substituted TADDOL synthesized using Falana's Synthesis Protocol. Unlike Compound 7, however, Compound 9 was an RR enantiomer. Additionally, Compound 9 exhibited substantial temperature independence between -20 and +70 degrees Celsius and, therefore, satisfied the goals of the project.

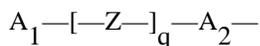
On June 9, 2000, KDI and Kent State filed the provisional application that led to the ['789 Patent](#). The inventors listed on the face of the ['789 Patent](#)

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include Doane, Khan, and Seed. Afterwards, Doane, Khan, Seed, and Falana jointly authored a publication entitled “High Twisting Power Chiral Materials for Cholesteric Displays” which describes the research project and includes a discussion of the Synthesis Protocol, Compound 7, and Compound 9. The '789 Patent issued on December 14, 2001.



where the  $R_2$  and  $R_3$  groups are a lower alkyl group or an aryl or biaryl unit while the  $R_1$  groups independently each are a hydroxyl, alkoxy, aryloxy, or arylalkoxy group, the R groups each represent a group as follows:



where  $A_1$  is an aromatic group, an acyclic aliphatic group, or an alicyclic group, and  $A_2$  can be a substituted or unsubstituted, Z is a group selected from —O—, —OCO—, or —S—, and the coefficient q is 0 or 1 or Z is  $(CH_2)_n$ O where the coefficient n is 0 to 5 and the coefficient q is 1, and  $A_2$  is a bivalent radical of a naphthalene group, and the cyclic structure of  $A_2$ , or  $A_1$  if it is cyclic, can be heterocyclic.

The patent specification discloses the Synthesis Protocol developed by Falana as the protocol utilized to synthesize the claimed class of chiral compounds.

After the '789 Patent issued, Falana learned that he was not listed as an inventor\*[1354](#) and asked Doane why he was not included. After receiving an unsatisfactory response from Doane, Falana filed the present [§ 256](#) action against Kent

Claim 1 of the '789 Patent recites:

1. An optically active compound of the formula:

State, KDI, Seed, Doane, and Khan to correct the inventorship of the '789 Patent. On June 23, 2008, Doane and Khan filed signed statements with the court that “[they] have no disagreement with the addition of Olusegun Falana as a named co-inventor of the [['789 Patent](#)]” and that “this statement may be filed with the USPTO to request correction of inventorship of [the '[789 Patent](#)] to add Olusegun Falana as a co-inventor.” At trial, Doane and Khan explained that they signed the statement not because they thought, as scientists, that Dr. Falana actually had been a joint inventor, but instead because they wanted out of the lawsuit. Accordingly, Doane, Khan, and KDI moved to dismiss themselves from the case, and the district court granted their motion. Thus, the only remaining defendants were Kent State and Seed (collectively, “the Defendants”).

The Defendants urged the district court to construe each claim of the '789 Patent to require an RR enantiomer that provides a substantially temperature independent helical twisting power (“HTP”), wherein “substantially temperature independent HTP” is further defined as having a maximum change in peak reflection of 30 nm or less across a temperature range of +10°C to +50°C. *Opinion at 34*. The district court noted that, while the patent contains thirty claims, the parties only focused on

claims 1 and 25. *Id.* While the district court construed claims 1 and 25 to require an RR enantiomer, the district court refused to read limitations into claims 1 and 25 concerning a substantially temperature independent HTP. *Id.* at 35–36.

After a bench trial, the district court concluded that Falana contributed to the conception of the claimed invention by, *inter alia*, the development of the Synthesis Protocol. *Opinion* at 37. Additionally, and without briefing from either party, the district court ruled the case to be exceptional and awarded attorney fees. *Opinion* at 40–44. The district court's determination that the case was exceptional was premised upon findings that the Defendants engaged in inequitable conduct, that the defense was objectively baseless, and that the “testimony of defendants' witnesses was not credible and of questionable veracity.” *Opinion* at 41–42. The court then awarded attorney fees, but did not determine the amount. *Id.* at 44. The Defendants timely appealed and this court has jurisdiction under 28 U.S.C. § 1295(a)(1).

## II. DISCUSSION

On appeal, the Defendants contend that the district court erred in its claim construction. They also contend that the district court abused its discretion in excluding certain exhibits. Additionally, the Defendants argue that the district court erred in concluding that Falana was an omitted joint-inventor on the '789 Patent. Finally, the Defendants argue that the district court erred in finding the case exceptional and awarding attorney fees to Falana. Each issue is addressed in turn.

### A. Claim Construction

[1] A district court's claim construction is reviewed de novo. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454–56 (Fed.Cir.1998) (en banc).

[2] The Defendants argue on appeal that the district court erred by not limiting the claims to an optically active compound “having a substantially temperature independent [HTP].” According to the Defendants, “the district court held that because the

claims did not include terms regarding \*1355 temperature independent [HTP], the claims did not include the limitation.” Quoting this court's decision in *Alloc, Inc. v. International Trade Commission*, 342 F.3d 1361, 1370 (Fed.Cir.2003), the Defendants assert that when “the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.” The Defendants contend that the specification describes the inventive compounds as possessing a HTP that is substantially independent of temperature and that, without this limitation, the claimed compounds “would be commercially worthless.”

Falana responds that the plain language of the claims nowhere suggests a limitation regarding temperature independent HTP, let alone a temperature independent HTP across the specific range of +10°C to +50°C. Further, Falana references portions of the specification which suggest that HTP relative to temperature is simply a modifiable characteristic of the inventive class of compounds. Finally, Falana contends that, although the preferred embodiment may exhibit a temperature independent HTP, the only reasonable conclusion is that the patentee meant to claim the entire class of compounds covered by the plain language of the claims.

[3] This court agrees with Falana. “[I]t is the claims, not the written description, which define the scope of the patent right.” *Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed.Cir.1998) (“[A] court may not import limitations from the written description into the claims.”). The claims here do not contain express limitations concerning a HTP that is substantially independent of temperature. Moreover, this court has “cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.” See *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327–28 (Fed.Cir.2002). Here, there is no suggestion in the intrinsic record that the applicant intended the claims to have the limited scope suggested by the Defendants. “Absent such clear statements

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of scope, we are constrained to follow the language of the claims, rather than that of the written description.” *Id.* at 1328.

*Alloc*, relied upon by the Defendants, is distinguishable. In *Alloc*, this court concluded that, despite the plain language of the claims, each claim contained a limitation of “play” because the specification as a whole “[led] to the inescapable conclusion that the claimed invention must include play in every embodiment.” *Alloc*, 342 F.3d at 1370. Unlike in *Alloc*, where the specification defined the invention as requiring “play” and the applicant emphasized the criticality of “play” during prosecution and distinguished the prior art on that basis, the specification here suggests that the temperature dependence of the HTP is a modifiable characteristic of the claimed compounds and the prosecution history is silent. *See, e.g.*, '789 Patent col.3 ll.52–57 (“In some cases it would be desirable if the temperature dependence of the cholesteric display could be *tailored* by the addition of a second additive....” (emphasis added)); *id.* col.4 ll.18–21 (“The R, R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> substitutions on the molecule of general formula I *control* the temperature dependence of the twisting power in the nematic host mixture....” (emphasis added)); *cf. Alloc*, 342 F.3d at 1370–73.

For these reasons, this court concludes that the district court did not err in construing the language of the claims.

#### B. Exclusion of Evidence

[4][5][6] The admission of evidence is a procedural question that is controlled by regional circuit law. \*1356 *Micro Chem., Inc. v. Lextron, Inc.*, 317 F.3d 1387, 1390–91 (Fed.Cir.2003). In the Sixth Circuit, a district court's decision to admit or exclude evidence is reviewed for abuse of discretion. *United States v. Geisen*, 612 F.3d 471, 495 (6th Cir.2010). A district court abuses its discretion in this regard when it bases its decision on errors of law or clearly erroneous factual determinations. *Id.* Moreover,

even if the lower court's decision amounts to an abuse of discretion, it will not be disturbed on appeal if it did not result in a substantial injustice, as no error in the admission or exclusion of evidence is ground for reversal or granting a new trial unless refusal to take such action appears to the court to be inconsistent with substantial justice.

*Zamlen v. City of Cleveland*, 906 F.2d 209, 216 (6th Cir.1990) (quotation omitted).

[7] Here, the district court sustained Falana's objection to the admission of the Defendants' exhibits CCCC and DDDD. Exhibit CCCC was a United Kingdom patent application (“U.K. Patent”) filed in 1991 by Seed and others. Exhibit DDDD was a scientific article published in 2000 by Dr. Seed and others. The Defendants offered these documents to allegedly show that the Synthesis Protocol was in the prior art and was in fact known to Seed prior to his work with Falana. Despite not admitting these exhibits into evidence, the district court did permit Seed to comment on them, explain how they represented his earlier work, and note that the U.K. Patent disclosed the method for preparing the first reagent material used by Seed in preparing Compound 9.

The Defendants argue that the district court erroneously excluded exhibits CCCC and DDDD and that had this evidence been considered, it would have shown that Falana's Synthesis Protocol was already known in the art. Appellant's Br. 31–39. Falana responds that the Defendants have failed to establish that the district court abused its discretion in excluding these exhibits. Moreover, Falana contends that Seed never testified that these exhibits mentioned TADDOLs let alone the complete Synthesis Protocol developed by Falana. Appellee's Br. 24. Thus, Falana asserts that even if the district court abused its discretion, any error was harmless. *Id.* at 26–27.

This court finds no basis to upset the district court's evidentiary ruling. Although the district court may have erred in excluding these exhibits

without providing any explanation, any such error in this case was harmless. The Defendants sought to admit these exhibits not to demonstrate that the entire Synthesis Protocol was known in the art, but only to show that certain portions of the Synthesis Protocol were known. The district court did permit Seed the opportunity to explain the portions of the Synthesis Protocol that were known in the art and thus these exhibits would have been cumulative of his testimony. Accordingly, this court is unable to conclude that the error in the exclusion of exhibits CCCC and DDDD resulted in substantial injustice. *Zamlen*, 906 F.2d at 216.

### C. Joint Inventorship

[8][9] “Inventorship is a question of law that we review without deference.” *Vanderbilt Univ. v. ICOS Corp.*, 601 F.3d 1297, 1303 (Fed.Cir.2010). “We review the [district court's] underlying findings of fact for clear error.” *Id.* “Because the issuance of a patent creates a presumption that the named inventors are the true and only inventors, the burden of showing misjoinder or nonjoinder of inventors is a heavy one and must be proved by clear and convincing evidence.” *Bd. of Educ. v. Am. BioSci., Inc.*, 333 F.3d 1330, 1337 (Fed.Cir.2003) (citations omitted).

\*1357 [10] “A joint invention is the product of a collaboration between two or more persons working together to solve the problem addressed.” *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227 (Fed.Cir.1994). People may be joint inventors even though they do not physically work on the invention together or at the same time, and even though each does not make the same type or amount of contribution. 35 U.S.C. § 116.

[11][12][13] “Thus, the critical question for joint conception is who conceived, as that term is used in the patent law, the subject matter of the claims at issue.” *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed.Cir.1998). “A contribution to one claim is enough.” *Id.* “The statute does not set forth the minimum quality or quantity of contribution required for joint inventor-

ship.” *Burroughs*, 40 F.3d at 1227. Each joint inventor, however, “must contribute in some significant manner to the conception of the invention.” *Fina Oil & Chem. Co. v. Ewen*, 123 F.3d 1466, 1473 (Fed.Cir.1997). Conception of a chemical compound “requires knowledge of both the specific chemical structure of the compound and an operative method of making it.” *Id.*

The district court issued extensive findings of fact and concluded that Falana's contribution of the Synthesis Protocol was sufficient contribution to the conception of the claimed invention as to render him a joint inventor on the patent.

The Defendants do not challenge any of the district court's findings of fact, but instead, only challenge the district court's legal determination that Falana was a joint inventor. Specifically, the Defendants contend that even if Falana contributed the Synthesis Protocol method, that contribution is insufficient to make him a co-inventor of the claims of the '789 Patent, which are all directed to chemical compositions and not methods. The Defendants also contend that Falana synthesized Compound 7, not Compound 9, and that Compound 7 does not fall within the scope of the claims.

Falana responds that he was the one who developed the Synthesis Protocol, which made it possible to make a previously-unknown genus of compounds, to wit, naphthyl substituted TADDOLs. This was the method used by Falana to synthesize Compound 7, the method used by Seed to synthesize Compound 9, and the only method disclosed in the '789 Patent for making the claimed compounds. Finally, Falana contends that because he contributed the method of making the novel class of compounds claimed in the '789 Patent, his contribution to conception was sufficient to make him a joint inventor.

The question before this court is whether a putative inventor who envisioned the structure of a novel chemical compound and contributed to the method of making that compound is a joint inventor

of a claim covering that compound.

The Defendants assert that *American BioScience* compels the answer “no” to the question before us. The Defendants contend that *American BioScience* held that a putative inventor's contribution of a method for making chemical compounds is legally irrelevant to whether he is a joint inventor on a patent that “does not claim any method of making those compounds.” Appellant's Br. 28 (quoting *Am. BioSci.*, 333 F.3d at 1341). This reading of *American BioScience* is erroneous and the facts of this case are manifestly distinct. See *Fina*, 123 F.3d at 1473 (“The determination of whether a person is a joint inventor is fact specific and no bright-line standard will suffice in every case.”).

In *American BioScience*, the court was faced with choosing between two competing groups of inventors. *Am. BioSci.*, 333 F.3d at 1340; see also \*1358 *Vanderbilt University*, 601 F.3d at 1306. The passage quoted by the Defendants concerns whether Nadizadeh, a putative co-inventor and scientist for FSU, was a joint inventor on the patent when Tao, named co-inventor and a scientist for ABI, allegedly used Nadizadeh's “secret” method to make the claimed compounds. *Am. BioSci.*, 333 F.3d at 1341. There was no indication, however, that Nadizadeh's secret method actually made any of the claimed compounds and thus he did not directly contribute to the conception of any of the *claimed* compounds. *Id.* Even if Nadizadeh developed a method of making similar compounds, it was of no consequence because neither that method *nor those similar compounds* themselves were *claimed* in the patent. *Id.* at 1342. Indeed, “Nadizadeh neither made the *claimed* compounds nor attempted to make them, and he did not have a firm and definite idea of the *claimed* combination as a whole.” *Id.* (emphasis added). Thus, the court concluded that simply “teaching skills or general methods that somehow facilitate a later invention, *without more*, does not render one a co [-]inventor.” *Id.* (emphasis added).

*American BioScience* did not hold that a putat-

ive inventor's contribution of the method for making a novel genus of claimed compounds is irrelevant on the question of inventorship of the patent. As explained above, the conception of a chemical compound necessarily requires knowledge of a method for making that compound. *Fina*, 123 F.3d at 1473. In some circumstances, the method of making a compound will require nothing more than the use of ordinary skill in the art. In those circumstances, the contribution of that method would simply be “[t]he basic exercise of the normal skill expected of one skilled in the art” and would not normally be a sufficient contribution to amount to an act of joint inventorship. *Id.* (citing *Sewall v. Walters*, 21 F.3d 411, 416 (Fed.Cir.1994)); cf. *Oka v. Youssefyeh*, 849 F.2d 581, 583 (Fed.Cir.1988) (stating in the interference context that “[w]hen ... a method of making a compound with conventional techniques is a matter of routine knowledge among those skilled in the art, a compound has been deemed to have been conceived when it was described, and the question of whether the conceiver was in possession of a method of making it is simply not raised”).

[14][15] Where the method requires more than the exercise of ordinary skill, however, the discovery of that method is as much a contribution to the compound as the discovery of the compound itself. This case is simply the application of the well-known principle that conception of a compound requires knowledge of both the chemical structure of the compound and an operative method of making it. Accordingly, this court holds that a putative inventor who envisioned the structure of a novel genus of chemical compounds and contributes the method of making that genus contributes to the conception of that genus. This holding does not mean that such an inventor necessarily has a right to claim inventorship of all species within that genus which are discovered in the future. Once the method of making the novel genus of compounds becomes public knowledge, it is then assimilated into the storehouse of knowledge that comprises ordinary skill in the art. Additionally, joint inventorship arises only “when collaboration or concerted

effort occurs—that is, when the inventors have some open line of communication during or in temporal proximity to their inventive efforts.” *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1359 (Fed.Cir.2004).

[16] Here, the district court concluded that Falana's contribution was greater than the exercise of ordinary skill. The district court made such a determination based on the documentary evidence before \*1359 the court and the testimony of the named inventors themselves. [JA36–37] The district court was not persuaded by Seed's testimony that Falana's Synthesis Protocol was nothing more than the basic exercise of ordinary skill because it was simply “old chemistry.” Instead, the district court “conclude[d] that the named inventors' post-lawsuit characterization of the meaning and accuracy of the contemporaneous physical evidence against Falana's joint inventorship [was] not credible.” *Opinion at 37 n. 22*. The district court found that Falana developed the Synthesis Protocol to synthesize Compound 7, an SS enantiomer. The district court also found that, contrary to Seed's testimony, Falana did not develop the Synthesis Protocol by simply following the teachings of others. *Opinion at 37*. Compound 7 is a species within the genus of naphthyl substituted TADDOLs—a previously unknown genus of chemical compounds. KDI regarded Compound 7, within that genus, as a “great improvement” because it represented “significant progress.” Once Falana left the team, the team continued researching specific compounds within this novel genus. Using Falana's Synthesis Protocol, Seed synthesized Compound 9, an RR enantiomer within that genus. Compound 9 was similar to Compound 7, but exhibited greater temperature independence than that of Compound 7.

Although the Defendants argue that Falana did not contribute to the conception of Compound 9 because Compound 9 was first synthesized after Falana left the team, this argument is inapposite. The claims of the '789 Patent are not limited to Compound 9. Instead, they claim a subset of the en-

tire genus of naphthyl substituted TADDOLs—those which are RR enantiomers. Falana contributed to the conception of this genus by providing the team of which he was a part with the method for making these novel compounds. Falana's lack of contribution to the discovery of Compound 9 itself does not negate his contribution of the method used by the other inventors to make the genus of compounds covered by the claims at issue.

The district court did not err in concluding that Falana's contribution of the method used by the team of which he was a part for making the claimed compounds was enough of a contribution to conception to pass the threshold required for joint inventorship. We therefore affirm the district court's determination.

#### D. Exceptional Case

The district court found this case to be exceptional on three grounds: “[1] that defendants engaged in inequitable conduct, [2] that they took an untenable position in defending this case, and [3] that their continued defense of this case in the face of testimony that lacked credibility and veracity was frivolous and bordered on bad faith.” *Opinion at 42*. The district court then awarded unquantified attorney fees against the Defendants, leaving the amount to be determined in further proceedings, which have yet to be conducted. Order, *Falana v. Kent State Univ.*, No. 08–cv–720 (N.D. Ohio June 2, 2011), ECF No. 107 (“[T]he Court will defer ruling on plaintiff's application for attorney fees and costs until such time as the Federal Circuit renders its decision in the pending appeal.”).

Falana argues that the district court's exceptional case determination is not final because the amount of the attorney fee award is yet unresolved and is therefore not reviewable on appeal. Appellee's Br. 27 (citing *Special Devices, Inc. v. OEA, Inc.*, 269 F.3d 1340, 1345 (Fed.Cir.2001)). The Defendants respond that this court has jurisdiction to review the district court's exceptional case finding and that *Special Devices* is limited to the situation

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\*1360 where the sole issue on appeal is the award of an unquantified amount of attorney fees.

[17] “By its express terms, § 1295(a)(1) requires that the decision of the district court be ‘final.’ ” *Special Devices*, 269 F.3d at 1343. A decision to award attorney fees under 35 U.S.C. § 285 is not final and appealable before the award has been quantified. *Id.* This rule “prevents piecemeal appeals involving 35 U.S.C. § 285—a first appeal to contest the exceptional finding *per se*, and a second appeal to contest the amount of the attorney fees.” *Id.*

[18] Here, the district court issued one order—concluding: (1) that Falana was a joint inventor on the patent; (2) that the case was exceptional; and (3) that an award of attorney fees was justified. The district court's decision on the merits, i.e. its decision on joint inventorship, is final and reviewable by this court. *Budinich v. Becton Dickinson & Co.*, 486 U.S. 196, 202–03, 108 S.Ct. 1717, 100 L.Ed.2d 178 (1988) (“[A] decision on the merits is a ‘final decision’ ... whether or not there remains for adjudication a request for attorney's fees attributable to the case.”). But the district court's exceptional case determination is a separately appealable judgment which itself must be final. *See White v. N.H. Dep't of Emp't Sec.*, 455 U.S. 445, 452, 102 S.Ct. 1162, 71 L.Ed.2d 325 (1982) (“Unlike other judicial relief, ... attorney's fees ... are not compensation for the injury giving rise to an action. Their award is uniquely separable from the cause of action to be proved at trial.”); *McCarter v. Ret. Plan for Dist. Managers*, 540 F.3d 649, 652 (7th Cir.2008) (“[T]he upshot of *White's* approach is that decisions on the merits and decisions about attorneys' fees are treated as separate final decisions, which must be covered by separate notices of appeal—each filed after the subject has independently become ‘final.’ ”). The district court's decision finding the case exceptional and awarding attorney fees that remain as of yet unquantified is not final and thus, not appealable. *Special Devices*, 269 F.3d at 1345 (“[A] decision to award unquantified attor-

ney fees in an exceptional case under 35 U.S.C. § 285 is not final.”). A non-final decision does not become final simply because it is issued in the same order as a final decision.

The Defendants urge this court to exercise pendent appellate jurisdiction over their appeal of this issue. Under this theory, a court of appeals, with jurisdiction over one ruling can review related rulings that are not themselves appealable. The Defendants argue that this court should, in the interest of judicial economy, exercise such jurisdiction in this case. Appellant's Reply Br. 21–25.

The Supreme Court, in *Swint v. County Chambers Commission*, 514 U.S. 35, 115 S.Ct. 1203, 131 L.Ed.2d 60 (1995), “threw cold water on pendent appellate jurisdiction.” *McCarter*, 540 F.3d at 653. In *Swint*, the Court concluded that pendent appellate jurisdiction was incompatible with 28 U.S.C. § 1291, which limits appeals to “final decisions,” and unnecessary because Congress has authorized the judiciary to prescribe rules to provide for interlocutory appeals. *Swint*, 514 U.S. at 48, 115 S.Ct. 1203.<sup>FNI</sup> Although the Court did not completely rule out all possibility of pendent appellate jurisdiction, it did make clear that only the most extraordinary circumstances could justify the use of pendent appellate jurisdiction. *See id.* at 50–51, 115 S.Ct. 1203 (“We need not \*1361 definitively or preemptively settle here whether or when it may be proper for a court of appeals, with jurisdiction over one ruling, to review, conjunctively, related rulings that are not themselves independently appealable.”). These extraordinary circumstances may be present when the nonappealable decision is “inextricably intertwined” with the appealable decision or when review of the nonappealable decision is “necessary to ensure meaningful review” of the appealable decision. *Id.* at 51, 115 S.Ct. 1203; *Gilda Marx, Inc. v. Wildwood Exercise, Inc.*, 85 F.3d 675 (D.C.Cir.1996) (refusing, post- *Swint*, “to create a blanket rule absolutely barring pendent appellate jurisdiction over non-final attorney's fee liability orders” but noting that “as a general mat-

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ter,” the review of such orders “will be rare exceptions”). *Swint* held that the Eleventh Circuit erred in invoking pendent appellate jurisdiction because “judicial economy” is no warrant for disregarding the statutory final-decision rule. *Swint*, 514 U.S. at 43–44, 51, 115 S.Ct. 1203.

FN1. While the decision in *Swint* was decided in the context of pendent party jurisdiction, the rationale is equally as persuasive to pendent jurisdiction generally. Additionally, the finality requirement of § 1291 is identical to that in § 1295.

The Defendants do not, nor from the record could they, argue that the exceptional case determination and award of attorney fees are inextricably intertwined with the determination on the merits or that the exceptional case determination and award of attorney fees must be reviewed in order to properly review the decision on the merits. Were this court to conclude otherwise, every appeal of a non-final award of attorney fees would necessarily be subject to pendent appellate jurisdiction. See *Gilda Marx*, 85 F.3d at 679 (“Early review of attorney’s fees liability is not likely to terminate the case or obviate further proceedings either here or in the district court.”). Even if it was clear in a particular case that a district court erred, and thus early review would obviate further proceedings, such conclusion as to this court’s jurisdiction could not be based upon a post-hoc analysis of the correctness of the district court’s decision. That result would be contrary to our precedent and that of our sister circuits. See *Special Devices*, 269 F.3d at 1345; see, e.g., *McCarter*, 540 F.3d at 654 (stating, before overruling Seventh Circuit precedent in conflict with *Swint*, “as far as we can see, no decision outside this circuit has invoked pendent appellate jurisdiction since *Swint* to entertain an appeal from an un-quantified award of attorneys’ fees”).

*Majorette Toys, Inc. v. Darda, Inc.*, 798 F.2d 1390 (Fed.Cir.1986) is also distinguishable from this case. The appeal in *Majorette Toys* was based on 28 U.S.C. § 1292. In that appeal, the Appellants

raised issues of validity, infringement, and attorney fees. Although the attorney fees had not been quantified, this court concluded that § 1292(c)(2), which permits interlocutory appeals from a judgment of patent infringement that is final “except for an accounting,” permitted the court to exercise jurisdiction over the appeal even if the award of attorney fees had not yet been ascertained. *Majorette Toys*, 798 F.2d at 1391 (“If an appeal in a patent case can come to this Court under § 1292(c)(2) after validity and infringement are determined but prior to determining damages, it makes no sense not to allow an appeal after validity, infringement, and damages are ascertained, and an award of attorney fees granted, even though the exact amount of attorney fees (and costs) has not been precisely ascertained.”). First, *Majorette Toys* pre-dates the Supreme Court’s decision in *Swint*. Second, because this is not an appeal from a judgment of patent infringement, the interlocutory provision of § 1292(c)(2) does not apply. See *Special Devices*, 269 F.3d at 1343 n. 2. Instead, § 1295, with its finality requirement, provides the court’s \*1362 jurisdiction over this appeal. Finally, *Majorette Toys* was decided in the context of a motion to dismiss an appeal as non-final simply because the amount of attorney fees and costs were not finally determined. The Supreme Court, a few years later, instructed that an otherwise final judgment on the merits does not lose finality simply because an award of attorney fees has not been quantified. *Budinich*, 486 U.S. at 202, 108 S.Ct. 1717. To the extent this court in *Majorette Toys* suggested it could review the unquantified fee award, such a suggestion was gratuitous to the resolution of the motion to dismiss the appeal.

Because the district court’s exceptional case finding and award of attorney fees are not yet final, they are not properly before us and will not be addressed, except to note for the benefit of the district court the persuasive arguments raised by the Defendants in this appeal.

### III. CONCLUSION

The district court’s determination that Falana is

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a joint inventor of the ' 789 Patent is affirmed.

**AFFIRMED**

Costs

Costs are awarded to Falana.

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