UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ABBOTT LABORATORIES,
Petitioner,
v.
MIRACOR MEDICAL SA,
Patent Owner.

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IPR2025-00096
Patent 11,351,356

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Deposition of Dr. Georg Wieselthaler
via videoconference

January 15, 2026

Reporter: Jude Arndt, CSR, CCR, RPR
CSR No. 084-004847
CCR No. 1450

Deposition of Dr. Georg Wieselthaler, taken via videoconference pursuant to Notice of Taking Deposition, before Jude Arndt, a Certified Shorthand Reporter and Certified Court Reporter, on January 15, 2026.

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(All present via videoconference)

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(No exhibits were marked.)

[8:58 a.m.]

The witness, GEORG WIESELTHALER, first having been duly sworn, testified as follows:

EXAMINATION

BY MR. VARE:

Q. Good morning, Doctor. Is it Wieselthaler? Did I pronounce that correctly?

A. It's "Vieselthaler." I'm of Austrian origin.

Q. "Vieselthaler." Okay.

A. "Vieselthaler," yes.

Q. I will try my best.

A. No, it's fine. It's fine. You know, "George" is good enough. I lived, you know, for nearly 14 years in the U.S., and I mean, everybody calls you "George" or "GW."

Q. So why don't you state your name for the record, please.

A. Actually, my name is Dr. Georg Wieselthaler, and I'm a medical doctor.

Q. And where do you currently live?

A. I live in Bahrain in Saudi Arabia.

Q. Okay. And do you work there?

A. Yes.

Q. And where do you currently work?

A. I have actually two jobs. I work -- we actually are building a hospital in Al Jaber in Saudi Arabia, and I'm going to be the chair of the department for CT surgery and the chief of staff, and hopefully it's going to be finished in two months, and then we're going to open up the hospital over there.

In addition to that, I work at King Fahd University for Petroleum and Minerals, which is in Dhahran, which is about 10 kilometers away, and I work there at the department for biomedical engineering as a consultant.

Q. Are you still affiliated with the University of California in San Francisco?

A. I am a professor emeritus, and with that, you know, I mean, I'm still affiliated. I don't work there anymore, but I'm still affiliated as a professor emeritus, you are.

Q. And you mentioned CT surgery. That's cardiothoracic?

A. That is correct.

Q. Okay. And you understand this deposition is being taken remotely today.

Where are you currently sitting for this

deposition?
A. Actually, I'm sitting in Bahrain. And if you mean --
Q. Yes, like the current geographic location.
A. It's Bahrain.
Q. Okay. And is there anyone else in the room with you?
A. No, I'm just by myself.
Q. Do you have any -- do you have any documents with you or in front of you?
A. Yes, I have a clean -- a declaration without any notes or without any marks, and that's more or less, you know, what I have, just in case, you know, I have to look up anything that I have put in my declaration in order to name it word by word.
Q. And the declaration you're referring to is your declaration that you provided on behalf of Abbott in support of these IPR petitions?
A. That is correct.
Q. So I will be introducing exhibits, and sometimes it takes a bit of time to appear. You have access to Exhibit Share?
A. Yes.
Q. And do you see Exhibit 1041 before you

now? Sometimes you may need to refresh.
A. Trying to see. No.
THE CONCIERGE: Do you remember where that "refresh" button is?
A. Yeah, but anyways, I mean, I cannot access it at this point. Because you told me go to the gallery, but I mean, it doesn't -- oh, no, it's "view."
THE CONCIERGE: Oh, no, not in the Zoom platform, in the Exhibit Share with the link that we opened earlier.
A. Hold on a second. Maybe this is it here. Here it is. Yes, I'm going to refresh. Okay. I see Exhibit 1041.
BY MR. VARE:
Q. And is this the declaration that you represented for these IPRs that you have in front of you?
A. That is correct, yes.
Q. Okay. And if you would go to the last page of the declaration, Page 47.
A. Yeah. Hold on a second, I just have to move it a little bit.
THE CONCIERGE: And if you want me to screen share, I can.

BY MR. VARE:
Q. If it's easier to look at your hard copy for your declaration, that's fine, too.
A. Okay. I see it right now.
Q. And is that your signature on Page 47?
A. Yes, that's my signature.
Q. And you signed it on Monday, December 22nd, 2025?
A. That is correct.
Q. When were you first contacted by Abbott to prepare this declaration?
A. I think, you know, it was on the 14th of December, as far as I can recall correctly.
Q. And do you recall who contacted you on behalf of Abbott?
A. It was Kevin Boyle who actually contacted me.
Q. And have you ever been an expert witness before in any type of litigation or disputive proceedings?
A. Never.
Q. And have you ever consulted for Abbott before?
A. Not for Abbott.

Q. Have you consulted for Thoratec before?
A. Consulted, not -- you know, I just actually was working with them, you know, but never actually had a contract with them beforehand.
Q. Have you ever received any compensation from either Abbott or Thoratec for any projects or consulting or other work?
A. It was research grants through the University of Vienna at that time.
Q. And that research grant was with Thoratec?
A. That was with Thoratec, yes.
Q. And what did the research grant -- what was its purpose or objective?
A. Actually, we did animal trainings for other centers. Actually, I was a proctor, and I did trainings, you know, in our animal lab with the PVAD, you know, and this is, you know, going back to probably 1995 or 1996 or so.
Q. So the research grant that you recall having with Thoratec goes back to the mid-1990s?
A. Yeah.
Q. And it related to PVAD?
A. That's PVAD. Yeah, that's a pulsatile device, you know, that actually was used in those days

by our institution and many other institutions worldwide.

Q. Have you ever had any research grant or otherwise received any compensation with either Thoratec or Abbott relating to any LVAD?

A. Actually, you know, it was that I was supposed to, you know, relaunch the HeartMate 2 clinical trial, which actually fell apart. So we actually didn't do that, you know, but we were supposed to.

But we actually -- for this, we didn't get any compensation, just due to the fact that it didn't work out.

Q. And why did it fall apart?

A. Because we rejected in 2022 use the pump. Because at that time -- you know, this was back in 2003, the pump actually was not working appropriately in the way, you know, we actually wanted to see it in the clinical setting. And I think, you know, this is well-known that actually we rejected it.

And it was after the pump failed, you know, for a couple times beforehand, and they had to refurbish the pump, and we were supposed to, you know, relaunch it in 2003, and also got the competent authority and

everything ready.

But during the final animal testing, you know, it turned out, you know, that it doesn't work appropriately, and that's the reason why we rejected, the university rejected it.

Q. And why do you believe it failed? What were the reasons why --

A. It's not -- it's not the pump that failed. You know, it was actually the flow estimator that failed.

Q. And how did it fail?

A. It actually just gave wrong numbers.

Q. Was it an electrical issue then, or was it something else?

A. It was something else.

Q. And what was -- what was the reason why you think it was giving wrong numbers?

A. It was not set up in the right way, and actually, I mean, the company knew that.

And then later on, you know, because when you actually doing animal experiments, you know, you also have flow sensors on the outflow graft, so you know exactly what is the flow that the pump produces.

And then you have a monitor, and the monitor

gives you a number, and if these numbers actually did not actually show you the same result, you know, then you know something is wrong.

Q. And you stated Thoratec knew that the flow estimator in the HeartMate 2 was giving wrong numbers?

MS. RAGHAVAN: Objection to form.

A. In -- sorry.

MS. RAGHAVAN: Go ahead, you can answer.

A. In a certain range.

BY MR. VARE:

Q. What do you mean by that?

A. If the range, you know, I mean, is exceeding a certain flow or is going below a certain flow and they actually changed that, you know -- when the flow went up, you know, they actually just blanked it out, you know, with a "plus, plus, plus," and when it went below a certain flow, it had a "dash, dash, dash."

And that's the -- that was the final version that went into clinics afterwards. That was the solution they came up.

Q. And were you presented with that solution when -- at the time you rejected it at the University of Vienna?

A. Nope.

Q. By the way, you know that the inventor on these patents is a gentleman by the name of Werner Mohl, and he was also at the Medical University of Vienna, correct?

A. Correct.

Q. Do you recall, did you ever interact with Professor or Dr. Mohl?

A. Well, many ways. We were colleagues for a long period of time until I left for UCSF, and for sure I know him.

Q. Did you ever interact with him on any particular projects at the university in Vienna?

A. No. Nope.

Q. Are you being paid for the work that you did to prepare your declaration and appear today for your deposition?

A. Yes.

Q. And what is your billing rate?

A. It's about $600 US, you know, per hour.

Q. And you indicated that you were contacted for the first time on -- around December 15th, correct?

MS. RAGHAVAN: Objection. Form.

BY MR. VARE:

Q. Is that correct?
A. It must have been around this time, correct.
Q. Okay. So approximately one week before you finalized and signed your declaration?
A. That is correct.
Q. And how many hours did you put into your declaration?
A. Probably some 30 hours, altogether.
Q. Did you write your declaration?
A. I wrote the declaration, you know, in collaboration with the lawyers. It was more or less, you know, a collaboration in that -- you know, I actually just wrote it, and they actually just looked at it and said, "Okay. Well, you have to put this in in addition to that."
Q. Do you recall what they said to put in in addition to that, like what specific things they asked you to put in?
MS. RAGHAVAN: Objection. I'm going to object to this entire line of questioning, and instruct the witness not to answer, on the basis of attorney-client privilege.
BY MR. VARE:

Q. Are you going to follow that instruction, Dr. Wieselthaler?
A. Absolutely.
Q. Did you do anything to prepare for today's deposition, Dr. Wieselthaler?
A. I just went through my declaration several times, you know, and also I looked at the exhibits. And that's more or less, you know -- I've been working in this business, you know, for 40 years, you know, and that's the reason why I can call myself, you know, an expert.
Q. Approximately how long or how many hours did you spend preparing for the deposition?
A. Maybe some 10 hours, altogether.
Q. Is that in addition to the 30 hours you spent on the declaration itself?
A. Yep.
Q. And you said you reviewed your declaration, reviewed the exhibits.
A. Yes.
Q. Any -- did you review any other documents other than your declaration and the exhibits?
A. Nope.
Q. Did you talk to anybody to prepare for your deposition today?

A. No.
Q. Did you not talk with any lawyers to prepare for your deposition today?
A. Only the counsel, you know, that actually just -- just guided me.
Q. And who is that counsel that you talked to?
A. Kevin Boyle and Saranya, who is actually with me.
Q. And did you have -- how did you talk? Did you have video calls, telephone calls?
A. Video calls.
Q. And how many of those did you have?
A. Probably four of them.
Q. And approximately what was the aggregate amount of time you spent on those four video calls?
A. I would say, you know, altogether, you know, six hours.
Q. And that would be six hours of the 10 hours spent preparing?
A. More or less, yes.
Q. Did you talk to anyone else to prepare for today's deposition?

A. No.
Q. Did you talk to anyone other than lawyers in preparing your declaration?
A. No.
Q. Did you talk to Peter Crosby to prepare your declaration?
A. No.
Q. And you did not talk to him to prepare for today's deposition?
A. No.
Q. Have you read Peter Crosby's depositions taken in these IPR proceedings?
A. Nope.
Q. Have you read Peter Crosby's declarations submitted in these IPR proceedings?
A. Nope.
Q. And you have not talked to anybody associated with Abbott or Thoratec to prepare for today's depositions or to prepare your declaration?
A. No.
MS. RAGHAVAN: Objection. Form.
BY MR. VARE:
Q. So if you look at Paragraph 6 of Exhibit 1041, that's your declaration.

A. Yeah.
Q. You state -- are you there?
A. I'm there.
Q. You state you are a cardiothoracic surgeon with experience in cardiac transplantation, mechanical circulatory support, and advanced heart failure.
What is cardiac transplantation?
A. This is heart transplantation.
Q. Okay. And basically that is just a surgery where you replace somebody's heart, correct?
A. Correct.
Q. And what is mechanical circulatory support, in the context of your experience as a cardiothoracic surgeon?
A. This is when you actually replace -- or no, sorry.
This is when you are assisting a failing heart with mechanical means.
Q. And is an LVAD an example of mechanical circulatory support to assist a failing heart?
A. Absolutely.
Q. And then advanced heart failure, by its name, is a failing heart, correct?
A. That is correct.

MS. RAGHAVAN: Objection. Form.
BY MR. VARE:
Q. So I'm going to ask you -- I want to understand a little bit more about heart failure and how LVADs are used to treat heart failure.
But if you look at Paragraph 3, so we can put these questions I'm going to ask in that context, if you look at Paragraph 3 of your report, you say, "All of the opinions I express in this declaration have been made from the standpoint of a POSITA at the time of the invention of the challenged patents, which I'm informed is the claimed priority date of February 27, 2007."
Do you see that?
A. I see it.
Q. And you understand that a POSITA means a person of ordinary skill in the art?
A. I understand that.
Q. Okay. So as I said, I'm going to ask you a series of questions I would like you to answer from that perspective, so from the perspective of a POSITA as of February 2007.
A. Correct.
Q. So as of February 2007, what were the reasons why a surgeon would want to implant an LVAD in

a human patient?
A. If a patient goes into severe heart failure, which is a life-threatening disease, you actually want to salvage this patient, and you have several means to do that.
First of all, you know, you actually apply medication, which is in not so severe cases helpful, but for sure, if the patient progresses in going to severe and chronic heart failure, for example, then you actually have to use mechanical means, for example, a left ventricular assist device.
Q. And that's an LVAD?
A. That's an LVAD.
Q. Great. And are there also right ventricular assist devices?
A. Correct.
Q. And do you have experience in those as well?
A. Absolutely.
Q. So by your answer, you talked about severe and advanced heart failure, I assume that there are stages of heart failure?
A. That's correct.
Q. And what are those stages? Do they

have -- I have read where they have A, B, C, and D stages?
Is that your understanding as well?
A. Yes, but, you know, we actually -- in medicine, you know, we grade them with the New York Heart Failure Association, and it's one to four.
Q. Okay. And what would one be?
A. One would be, you know, a light form of heart failure, you know, where you actually -- when you exercise, you actually get slightly more or less, you know, short of breath, and that's more or less what it is. You have no severe restrictions in exercise capabilities, and your heart function is relatively, let's say, you know, okay.
Whereas in four, for example, you know, you have severe restrictions, you know, in exercise capabilities, and even in everyday life you have severe restrictions in a way, you know, that you hardly can walk, you get swollen legs, you know, you get edema, pulmonary edema, and, you know, it's a life-threatening disease, and it's a deadly disease, unfortunately.
Q. And what would Grade 2 reflect in terms of the stages of heart failure?
A. Well, Grade 2 more or less, you know, is

an aggravation of Grade 1, which actually means, you know, that you actually have more severe symptoms of heart failure.

You actually grade it, you know, more or less with the ejection fraction, that the ejection fraction in a normal person is in the range of 60 to 70 percent, and this ejection fraction goes down, you know, to 50 or 40 percent, and that means you actually have restrictions in your everyday life already.

Q. And what would Grade 3 in the progression of heart failure projection relate to?

A. Well, Grade 3, once again, it's a further aggravation, you know, of your -- of your disease. And you have to actually keep in mind, you know, we have chronic heart failure and we have acute heart failure, and all these -- these different aggravation stages you have only with chronic ones.

And that means, you know, at this time you have already, you know, severe edema, you have, you know, I mean, severe shortness of breath, even with short-term exercise. And --

Q. And then --

A. -- then, you know, it's a life-threatening disease.

Q. And Grade 4 --

A. I'm sorry.

Q. No, go ahead. I'm sorry. I didn't mean to interrupt you.

A. No, you're more or less, you know, bedridden to that extent, you know, that you hardly can move anymore, you hardly can breathe appropriately anymore, and your cardiac function, you know, is severely reduced and cannot support the necessary blood flow, you know, into the organs.

Q. And would Grade 4 be what you would call advanced or end-stage heart failure, severe heart failure?

A. It's in between three and four, yes.

Q. Okay. And again, as of February 2007, at what stage would a cardiac surgeon consider an LVAD to treat any of those heart failure stages?

A. It's late Stage 3, and definitely Stage 4.

Q. Have you heard the term "cardiac remodeling"?

A. Correct.

Q. And what is that?

A. Well, actually, I mean, this is when you actually just are for a longer period of time in the

stage, you know, of heart failure, the muscle itself, you know, actually changes. And you can actually have, you know, a remodeling over time, and when you actually just put in an LVAD and support the heart, you know, you can also cause, you know, some de-remodeling.

This is something that, you know, is relatively new, but it happens, you know, and we were able to, you know, for example, you know, to put some patients, you know, in Stage 4 on left ventricular assist devices, support them over a certain period of time, usually a longer period of time, means one year, one-and-a-half years, and then, you know, the heart recovers and de-remodels, and then you can actually take out the pump once again.

Q. And did you experience this de-remodeling with the use of an LVAD after 2007? Is that more recent?

A. Nope. No, it was even before. The first -- the first ones who actually expanded left ventricular assist devices, you know, were done at the University Hospital in Berlin. Dr. Muller and Dr. Hetzer actually did that. They published that, I think, in a series of about 20, 24 patients. And -- but this is way before that.

Q. Okay. And would you agree that cardiac remodeling can -- and I think you have said this, but it can alter the size of the chamber, the size of the heart muscle itself, correct?

A. That is correct.

Q. And the wall thickness?

A. Also.

Q. And the shape of the heart?

A. Also.

Q. And the tissue composition?

A. Yes.

Q. And the heart itself can increase in both geometry and size with cardiac remodeling in the -- kind of the later stages of heart failure?

A. It can, you know, but once again, you know, you have to distinguish between different forms of heart failure.

There is an ischemic heart failure and there is non-ischemic heart failure, dilative cardiomyopathy, and they actually have different reasons and differ -- you know, the geometry of the heart is a different one, as well as, you know, the composition of the heart muscle cells, you know, is a different one.

Q. So you mentioned kind of the phrase

"ejection fraction" earlier, I believe.
So there is heart failure with what's called reduced ejection fraction, correct?
A. Yes.
Q. And in that circumstance, the left ventricular becomes dilated and weak?
A. Must not be. If you have ischemic cardiomyopathy, you actually can keep the shape of the heart, but due to the fact, you know, that you actually have several ischemic areas, yeah, which actually are areas, you know, that are actually replaced by scar, the heart doesn't dilate in that way, and -- but the ejection fraction goes down.
And that's -- you know, it's still HFrEF. That means, you know, heart failure with reduced ejection fraction.
Q. And another heart failure is with preserved ejection fraction, correct?
A. Correct.
Q. And for the court reporter's benefit, when you said HFrEF, heart failure with reduced ejection fraction, it's commonly typed out capital H, capital F little R, capital E, capital F, is that correct?
A. That is correct.

Q. And with preserved ejection fraction, it's commonly typed out capital H, capital F, little P, capital E, capital F?
A. Correct.
Q. And with preserved ejection fraction, have you heard it commonly referred to as like a stiff pump?
A. Well, for most of the reasons, you know, a preserved eject -- heart failure with preserved ejection fraction, it was called in the old days, you know, a diastolic heart failure, which means, you know, you have a stiffer heart, as you mentioned it beforehand, and the heart cannot, you know, dilate, you know, during diastole, which actually can have different reasons.
Q. So in cases where the heart has in the -- you know, in the end stages of heart failure, where the heart is actually increased in size or geometry, that can reduce the space in the patient's body in and around the heart, correct?
A. Well, since this actually takes quite some time, the -- for sure, you know, the heart expands in size, but for example, you have to keep in mind the heart is surrounded by the pericardium, and the pericardium actually also expands.

Q. And that can increase pressure on the lungs?
A. Absolutely.
Q. And would an LVAD be a treatment option for both the reduced ejection fraction and preserved ejection fraction symptoms?
A. In general, yes.
Q. So what I want to try to do is just kind of sum up what I understand you have said.
But advanced or end-stage heart failure patients can experience dilation, hypertrophy, altered shape, valve dysfunction, chamber pressure overload -- those are all what can happen to your heart in advanced heart failure, correct?
A. That is symptoms, you know, that you actually experience and develop, you know, with advanced heart failure. That is correct.
Q. And certainly today but also as of February 2007, all of these factors would influence how an LVAD could be implanted, where its components could be placed, what device you would use, what surgical approach was safest, is that correct?
MS. RAGHAVAN: Objection. Form.
A. I think, you know, I mean, you have to

keep in mind, you know, the first successful implant of a left ventricular assist device was done in 1966 by Dr. Michael DeBakey, and since then we actually just use left ventricular assist devices in the clinical area.
BY MR. VARE:
Q. So is the answer to my question correct, all of those factors would influence how you would implant an LVAD, what implant you would use, where you would put the components, what surgical approach you would use?
MS. RAGHAVAN: Objection. Form.
A. I think, you know, I mean, from the clinic point of view, you know, if you asked me as a cardiac surgeon, there is a lot of different factors you have to take into consideration to implant a pump.
And -- but you are correct, you know, those are one or some of the factors, you know, that actually can come into play, you know, when you want to implant the left ventricular assist device.
BY MR. VARE:
Q. I want to ask you again, in the context of February 2007, would larger and heavier LVAD pumps constrain where you could place the pump?

MS. RAGHAVAN: Objection. Form.
A. As a matter of fact, you know, I mean, you actually have to take into consideration the first generation of LVADs that we have been using and the implantable ones, you know, which is the HeartMate 1 from Thoratec at that time and the Novacor pump from WorldHeart. They actually were the size, you know, of my hand, yeah, were huge devices, and needed to be implanted, you know, in a peritoneal pocket.
BY MR. VARE:
Q. So larger and heavier pumps like those would influence where you could place the pump in the body, correct?
MS. RAGHAVAN: Objection. Form.
A. Correct.
BY MR. VARE:
Q. And in the example you gave, would you have to create what's called a pump pocket in the preperitoneal area, kind of to hold the pump?
A. You actually can place these pumps, you know, in different areas, and it's not only a preperitoneal or a peritoneal pocket; you can place it also, you know, inside the chest, while knowing, you know, that actually you have reduced space in order to

do so.
Q. So one place where you can place these LVAD pumps is preperitoneal -- preperitoneal, correct?
A. One place is, correct, preperitoneal, yes.
Q. And that is below the diaphragm?
A. Not exactly. Not exactly. It's actually preperitoneal, as the definition says. If you actually -- if you would place it, you know, below the diaphragm, you actually would say subdiaphragmal.
Q. Okay. And is that -- is preperitoneal a place in an abdominal pocket or a different pocket?
A. It's a pre -- it is in the peritoneal region, but it's outside, you know, the peritoneum.
Q. Okay.
A. Which is, you know, no contact with the gut or the stomach or any of these organs.
Q. And then you can also place LVADs potentially in the pericardial area, or at the apex of the heart?
A. Yes. Correct.
Q. And you have read -- you have read the Bourque 2001 article? That's one of the exhibits to your declaration?
A. Correct.

Q. And where was that pump placed?
A. In a preperitoneal pocket.
Q. Have you ever -- have you --
A. 2001 -- I'm sorry. 2001.
Q. Right, the 2001.
Have you ever personally implanted the pump that was disclosed in the Bourque 2001 article?
A. No. No.
Q. And I take it you have not tried to -- ever tried to put that pump in a human being?
A. No, actually it was not for human beings, you know, available.
Q. Okay. And so you're not aware of anyone who has ever put the pump disclosed in the Bourque 2001 in a human being, because it was never available for human beings?
A. That is correct.
Q. Okay. Do you recall how bulky or heavy or what the size of the Bourque 2001 pump was?
A. Yeah.
Q. And what do you recall it to be? What are the measurements? If you want to look at -- I can introduce Exhibit 1007 for you.
A. Yeah, please.

THE REPORTER: Is this exhibit premarked or being marked now?
MR. VARE: Most of the exhibits will have been previously marked. So the one I'm going to introduce is going to be Exhibit 1007, previously marked.
BY MR. VARE:
Q. So let me know when Exhibit 1007 comes up.
A. No, not at this point. It's still 1041.
THE CONCIERGE: If you click -- are you still in the document?
A. Actually, I mean, I am refreshing, as you said.
THE CONCIERGE: Maybe click back.
A. Do I have to leave?
THE CONCIERGE: Yeah, leave the document and go back one button now to the document.
A. Okay. It's 1007. That's correct, yeah?
BY MR. VARE:
Q. Yep.
A. I see it.
Q. And you're familiar with Exhibit 1007?
A. Yes. Just give me a moment. You know, it's just loading.

Q. Okay.
A. Here we go. Yeah, I see it.
Q. Are you familiar with Exhibit 1007?
A. Yes.
Q. And this is what has been referred to in the papers as the Bourque 2001 reference?
A. Correct.
Q. And my question was, do you recall the size and weight of the Bourque pump disclosed in Exhibit 1007?
And rather than make you guess, I'll point you to, on the first page, which is Page 401 of the actual reference, under "materials and methods," the second paragraph.
It says, "The mass of the HeartMate III device," Roman numeral three --
A. Uh-huh.
Q. -- "is 475 grams, including the motor, 535 grams, including the inflow cannula recovery section, outflow graft, bend relief, and all connected hardware."
Do you see that?
A. Yeah.
Q. And so the total mass of the pump device

was 475 grams?
A. Correct.
Q. And the diameter and the height of the pump was 69 millimeters and 30 millimeters, respectively?
A. Correct.
Q. And then the inflow and outflow -- the inflow cannula and the outflow graft protruded several millimeters outside of that, correct?
A. Correct.
Q. And the pump displaced 175 millimeters -- milliliters?
A. Milliliters. Yes. That is correct.
Q. You referenced a MicroMed DeBakey LVAD in your earlier testimony today?
A. Correct.
Q. Do you recall that?
And do you recall how the MicroMed DeBakey VAD compared in size and weight to the Bourque pump?
A. Yeah, it was way smaller and lighter.
But once again, you know, I think for you to understand, the weight itself, you know, is not a parameter, you know, which actually can interfere, you know, with the patient itself.

If you have to keep in mind, the HeartMate 1 and the Novacor, for example, you know, were weighing one-and-a-half to two kilos, and they were also implanted. So the weight itself, you know, I mean, is not a criteria.
Q. But it is correct that the MicroMed DeBakey VAD was way smaller and weighed a lot less than the Bourque 2001 LVAD?
A. That is correct.
Q. And the DeBakey LVAD, it was an axial flow pump, correct?
A. Correct.
Q. And Bourque 2001 is disclosed as a centrifugal flow pump?
A. Correct.
Q. Are there differences in axial flow versus centrifugal flow LVADs?
MS. RAGHAVAN: Objection. Form.
A. There is a significant difference between centrifugal and axial flow pumps. Both are rotary blood pumps, but there is a difference in a way, you know, that axial flow pumps, you know, the in and the outflow is in the same axis, whereas, you know, in the centrifugal pump it's a 90-degree angle in between

inflow and outflow.
BY MR. VARE:
Q. And have you used both axial flow and centrifugal flow pumps?
A. Yes.
Q. And as of 2007, had you implanted both axial flow and centrifugal flow pumps?
A. Yes.
Q. And as of that time period, had you decided which one was better?
A. I think, you know, this is not the correct question, because you cannot say just because it's an axial flow pump it's better or it's a centrifugal flow pump it's better than the other one. It's different parameters, you know, that you actually rely on and you actually to say, okay, this is maybe the next generation, for example.
So the axial flow pumps that we have been using mainly was second generation, and whereas, you know, the centrifugal pumps that we have been using, you know, in those days -- and this was before 2007 -- were at third generation already.
Q. What would be the different parameters as between these two pumps?

MS. RAGHAVAN: Objection. Form.
A. Axial flow pumps, you know, behave in a different way, because their HQ curves, you know, are different than centrifugal pumps.
And for sure, as I mentioned, you know, the axial flow pumps we had at that time available, with exception, you know, of the InCor pump, was more or less, you know, second generation pumps, other second generation pumps, which mean they had mechanical -- because of mechanical bearings, whereas all the centrifugal pumps that we actually have been using by that day were third generation pumps, you know, with magnetical levitated rotors.
BY MR. VARE:
Q. Are you familiar with the HeartWare HVAD?
A. Yes.
Q. And do you recall the HeartWare HVAD, how it compared in size and weight to the Bourque 2001 pump?
A. Yes.
Q. Was it lighter and smaller?
A. It was lighter and smaller.
Q. And are you familiar with the DuraHeart pump?

A. Yes.
Q. And you -- have you implanted the DuraHeart pump?
A. Yes.
Q. And as of February 2007, had you implanted the DuraHeart pump in a human?
A. Yes.
Q. And are you familiar with the size and weight of the DuraHeart pump as to how it compared with the Bourque 2001 pump?
A. More or less, yes.
Q. Do you recall if it was the DuraHeart pump was lighter or smaller or heavier than the Bourque 2000 (sic) pump?
MS. RAGHAVAN: Objection. Form.
A. The DuraHeart pump, you know, was -- was higher in height, yeah, and it has about five centimeters of height, and -- height. And the size was more or less the same, maybe a little bit less.
The weight, as I said, you know, doesn't play any major role for us, because the patients actually don't feel that. So for us, you know, as a cardiac surgeon, I mean, we don't care about the weight itself. It's more or less, you know, the size and the shape.

BY MR. VARE:
Q. Where did you implant the DuraHeart pump in a human? Like where in the body?
MS. RAGHAVAN: Objection. Form.
A. It was at that time, you know, implanted in a preperitoneal pocket.
BY MR. VARE:
Q. Did you ever implant the DuraHeart pump at the apex of the heart in the pericardial space?
A. Actually, in the pericardial space, it was definitely too big, but once again, you know, on the apical -- as in apical cannulation side, you actually can place these pumps, you know, similar like the VentrAssist pump, for example, in a subdiaphragmal position, which is possible.
Q. Did you ever do that?
A. No, because I mean, we actually were in a clinical trial, and you were not supposed to, you know, change whatever you want to have. You were more or less, you know, bound, you know, to what the company and the PIs, you know, actually wanted.
Q. I have introduced what's been previously marked as Exhibit 1046. This is one of the exhibits that you cite in your declaration. And so let me know

when you can see it.
A. It doesn't show up yet.
THE CONCIERGE: I can't see it yet either.
MR. VARE: Hmm.
THE CONCIERGE: Would you like me to try introducing it?
MR. VARE: No.
THE CONCIERGE: Okay.
MR. VARE: Had marked it.
A. I still don't see it. I'm sorry.
MR. VARE: Yeah, I need to -- let's see if it now shows up.
A. No.
THE CONCIERGE: I see it now.
A. You see it?
THE CONCIERGE: Yeah, I see it now as well. Trying refreshing one more time.
A. Oh, here we go. Yes. It's 1046, Tab 6, right?
BY MR. VARE:
Q. Yes. Are you familiar with Exhibit 1046?
A. Yes.
Q. And this is one of the exhibits you cited in your declaration?

A. Correct.
Q. If you can look at -- maybe keeping the Exhibit 1046 on your screen, and then look at your paper copy of your declaration, Paragraph 77.
A. I see it.
Q. Now, Paragraph 77 is a paragraph describing the DuraHeart, correct?
A. Correct.
Q. And Exhibit 1046 is an article describing the DuraHeart?
A. Yeah.
Q. And Paragraph 77 in your declaration comes into -- comes under a section on the previous page, right before Paragraph 74, Number 1, where you state, "Numerous LVADs comprising an axially aligned inflow tube already existed."
A. Okay.
Q. And is it your testimony that the DuraHeart is one of these axially aligned inflow tube LVADs?
MS. RAGHAVAN: Objection. Form.
A. Due to the size, you know, they actually had to put this knee or whatever you call it, elbow, on the inflow, because they obviously didn't want to

implant the pump, you know, subdiaphragmal, as I mentioned beforehand, which would be an option that they could do it.
So they actually just turned the pump around 90 degrees and actually put this changed inflow on top of the pump, and that's the reason, you know, why they have a different inflow.
But the inflow to the pump itself, you know, is still, you know, in a 90-degree angle to the outflow; otherwise it wouldn't be a centrifugal pump.
BY MR. VARE:
Q. But if you look at Figure 2 of Exhibit 1046.
A. Can you show that, please?
Q. It's on -- if you look at Exhibit 1046, it's on Page 327 of that article.
A. Okay, hold on. 327. Yes.
Q. And the upper left, you see Figure 2?
A. Yeah.
Q. And 2A is the DuraHeart, correct?
A. Correct.
Q. And you would agree that Figure 2A shows the -- all three components extending from the circular pump housing are extending radially outward from that

pump housing, correct?
A. Correct.
Q. And one of those components would be the inflow tube?
A. Correct.
Q. Are you familiar with the Ventracor VentrAssist?
A. Yes.
Q. Have you ever implanted a Ventracor VentrAssist?
A. No.
Q. So I have introduced into your Exhibit Share what's been previously marked as Exhibit 2013. Let me know when that pops up.
A. Okay. It's there.
Q. Are you familiar with Exhibit 2013?
A. I'm familiar.
Q. And this -- Exhibit 2013 describes the Ventracor VentrAssist LVAD?
A. Correct.
Q. And it's dated 2007, correct?
A. Correct.
Q. And does this article disclose where the VentrAssist was implanted?

A. It discloses it, yes.
Q. And where does it disclose it being implanted?
A. If you just look at Figure 2, you see, you know, that it's a straight inflow cannula, and it's placed -- you know, it can be only placed due to the size, you know, subdiaphragmal.
Q. And if you look at Page 737 of the article, Exhibit 2013.
A. Yes.
Q. And there's a section that begins "2.2, surgical technique."
A. Wait a minute. Yeah.
Q. And it states that the VentrAssist was implanted in a pocket on the left side below the diaphragm, correct?
A. Yes. Correct.
Q. Either in a pocket formed in the posterior rectus sheath or in a preperitoneal position behind the rectus?
A. Correct.
Q. And that's consistent with your testimony that that's where it was implanted?
A. Correct.

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Q. Have you ever seen the inflow cannula on a VentrAssist?
A. Yeah.
Q. And what's your recollection of what it looks like?
A. It's -- actually, they had to make it, you know, longer than normal just due to the fact, you know, that the pump, you know, is placed, you know, below the diaphragm.
But it's a straight inflow cannula, and more or less, you know, follows, you know, the line of a centrifugal pump, which means, you know, the inflow is in a 90-degree angle to the outflow.
Q. So would you agree that the apex of the heart does not lead straight down?
MS. RAGHAVAN: Objection. Form.
A. Well, you cannot say that. It really depends, you know, I mean, what kind of disease the patient has, number one.
Number two, you know, I mean, for example, how the patient, you know, is shaped. You have tall patients, you know, that actually have a completely different configuration of their heart than, for example, small patients.

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But the main big difference is, you know, if you have these huge dilated hearts with dilated cardiomyopathy, they actually can actually switch their apex to the lateral wall, to the lateral side, let's say it that way.
BY MR. VARE:
Q. So when you're accessing the left ventricular through the apex of the heart, are you approaching at an angle in comparison to the long axis of the body?
A. Yes.
MS. RAGHAVAN: Objection. Form.
BY MR. VARE:
Q. Okay. And was -- is that your understanding as well how the HVAD was implanted?
A. Can you precise that?
Q. I'll have to -- let me ask -- I'll withdraw that question, and I'm going to actually move on to the HVAD.
But before I do that, you have also mentioned the Jarvik 2000 in your declaration, correct?
A. Correct.
Q. And that was another axial flow LVAD?
A. Correct.

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Q. Why don't we take a short break, maybe five or 10 minutes. Does that work with you, Doctor?
A. Absolutely.
[A recess was taken.]
THE REPORTER: We are back on the record.
BY MR. VARE:
Q. Doctor, are you familiar with the -- what's disclosed in the Wampler patent, which is Exhibit 1008?
A. Yes. Can you actually just tell me, you know, where in my declaration I have that?
Q. Yeah. You cite two figures from the Wampler patent on Pages 30 and 31 of your declaration.
A. Okay.
Q. You cite Figure 5 and Figure 13.
A. Okay. Yep.
Q. And in particular you say in Paragraph 53 that the development of the HeartWare HVAD progressed from the design disclosed in Wampler's patent shown below, and you cut and paste the Figure 13 from that patent.
Do you see that?
A. That is correct.
Q. And I believe you testified that you have

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in fact implanted the HeartWare HVAD?
A. That is correct.
Q. You were involved in some of the very first clinical trials implanting the HeartWare HVAD in humans?
A. I did the very first implant worldwide, yes.
Q. And that was in March of 2006, I believe?
A. That is correct.
Q. And do you recall in your declaration that you cited certain exhibits referencing the HeartWare HVAD?
A. Can you actually just mention that to me?
Q. Yeah. So like Paragraph 52, you cite Exhibit 1049.
A. Exhibit 1049. Yeah. Uh-huh. I see it. Yeah.
Q. So I'll pull that up and show it to you. Let me know when that pops up.
A. Yeah. Okay. It's there.
Q. This is an article written by you, correct?
A. Correct.
Q. And it's -- it was published online June

3rd, 2022?
A. Correct.
Q. And it's titled, "My Journey with the HeartWare Ventricular Assist Device, An Obituary"?
A. Correct.
Q. And you're talking about your work developing and implanting and clinical trials relating to the HeartWare HVAD in this article?
A. That is correct.
Q. Is -- can you -- you can scroll through it, the document online, but can you identify anywhere in this article where you actually show a diagram or a picture or an image of the HeartWare HVAD?
A. No.
Q. There's not one in there?
A. No. Because at that time, you know, the HeartWare was implanted, you know, I think 22,000 times worldwide, and there was -- that was definitely not, I mean, an idea from myself, you know, to more or less, you know, show the HeartWare HVAD, you know, to the -- to the world, because everybody knew it by then. It was more or less the story, you know, my story with the HeartWare.
Q. Okay. I appreciate your explanation, but

to answer my question, you don't put any picture or image or drawing of the HeartWare HVAD in this article, Exhibit 1049, do you?
A. Oh, it's -- wait a minute. You know, maybe it's on the -- no, it's not. Because even the tiny little picture they put up, you know, on the left upper corner is not an HVAD. As far as -- you know, I can see, it's an axial flow pump they put in there. Because this is -- this is what the journal did, you know, not me.
Q. On Page 6 of this article, Exhibit 1049, at the very bottom, you say -- are you there? I don't want to --
A. Yeah.
Q. On the very bottom, you say, "In 2011, I moved from Vienna to the United States and started working at the University of California-San Francisco, UCSF."
Do you see that?
A. That is correct.
Q. And prior to that time, you had no involvement with UCSF?
A. That is correct. I got actually hired, you know, in 2011, and I interviewed there, you know,

for the first time, you know, in 2011, in January, I think. And it was the first interview I got.
Q. So I introduced another exhibit that's been premarked as Exhibit 1015. Let me know when you have that pulled up.
A. Yeah. 1015. Yeah. It's Jeff LaRose.
Q. Yeah. This is a one-page document you cited, Exhibit 1015, authored by Jeff LaRose --
A. Yeah.
Q. -- and three other individuals, correct?
A. Correct.
Q. And I believe you have described Jeff LaRose as the senior engineer on the HeartWare HVAD?
A. That is correct.
Q. Now, this article is dated March 2004, correct?
A. Correct.
Q. Does this abstract, Exhibit 1015, show any pictures or images or drawings of the HeartWare HVAD that you implanted later in March 2006?
A. Nope.
Q. I have introduced another document into Exhibit Share, which has been premarked as Exhibit 1044. Let me know when that pops up.

A. I see it.
Q. And this is another document you cited to describe your work with implanting and clinical development of the HeartWare HVAD, correct?
A. Correct.
Q. And Exhibit 1044 is a HeartWare press release dated March 24, 2006, correct?
A. Correct.
Q. And it's titled, "The First Human Implant of HeartWare's HVAD"?
A. Correct.
Q. And that's -- this is a press release of your first implant of the HeartWare in a human patient on March 22nd, 2006, correct?
A. Correct.
Q. And in this press release, do they show a picture or image or drawing of the HeartWare HVAD that you implanted on March 22nd, 2006?
A. No.
Q. The pump drawing, which was labeled Figure 13 in Paragraph 53 of your declaration.
A. 53? Hold on. Yep, I have it.
Q. That is not the same structure and configuration of the HeartWare HVAD that you implanted

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in a human on March 6 -- or March 22nd, 2006, is it?
MS. RAGHAVAN: Objection. Form.
A. It's -- it's the Wampler pump, you know, not the HVAD.
BY MR. VARE:
Q. Not the HVAD?
A. No, it's not the HVAD.
Q. Okay. Thank you.
A. And this is what I state, you know. "The development of the HeartWare HVAD progressed from the design disclosed in Wampler's patent, shown below."
This is what I stated in my declaration.
Q. So I have introduced a new exhibit, labeled Exhibit two thou -- 2024, 2024. Let me when that pulls up.
A. Yeah.
Q. And Exhibit 2024 is a PowerPoint presentation, 64 pages. It has your name on the cover page, associated with the Division of Cardiothoracic Surgery, University of California-San Francisco.
Do you recognize this PowerPoint presentation?
A. Yes.
Q. And is this a PowerPoint presentation that you prepared?

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A. Yes.
Q. And are you familiar with it?
A. Yes.
Q. And would this PowerPoint presentation have been prepared after you had joined University of California in San Francisco?
A. Definitely.
Q. So after 2011?
A. Correct.
Q. So I want to scroll through here or have you scroll through here to -- it's Page 51 of the document.
A. Uh-huh. Yes.
Q. And is this a slide showing the HeartWare HVAD that you implanted, beginning in March of 2006?
A. That's an explosion view of the HeartWare HVAD, correct.
Q. And that explosion view is how you understood the HeartWare HVAD to be configured?
A. Correct.
MS. RAGHAVAN: Objection. Form.
BY MR. VARE:
Q. And if you go to the next page, 52. Do you see that picture, image?

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A. Yes.
Q. And is that -- do you recognize that pump?
A. Yes.
Q. What is that pump?
A. That's the HeartWare HVAD.
Q. And is that the HeartWare HVAD that you implanted beginning in March of 2006?
A. Correct.
Q. Let's scroll down to what's Page 54 of this PowerPoint presentation.
A. Yep.
Q. And this, again, is labeled "HeartWare, HVAD."
Do you recognize this slide?
A. Yes.
Q. And do you see the diagram in the upper left of the slide?
A. Yes.
Q. And do you recognize that?
A. Yes.
Q. And is that the HeartWare HVAD that you implanted that you describe in your declaration as implanting beginning in March of 2006?
MS. RAGHAVAN: Objection. Form.

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A. It is the HeartWare HVAD.
BY MR. VARE:
Q. Okay. And the Figure 13 in your declaration at Paragraph 53 is not the same device as that shown in your presentation, Exhibit 2024, is it?
A. It's not the same, but once again, I mentioned in 53, "The development of the HeartWare HVAD progressed from the design disclosed in Wampler's patent." And this is --
Q. It's not -- but it's not the same device?
A. It's not the same device.
Q. Have you ever implanted a device configured as shown in Figure 13 in your declaration?
MS. RAGHAVAN: Objection. Form.
A. No.
BY MR. VARE:
Q. And so all of your explanation of implanting and clinically developing the HeartWare HVAD is of the HeartWare HVAD pumps that we're looking at in Exhibit 2024, correct?
MS. RAGHAVAN: Objection. Form.
A. Besides, you know, the HeartMate 3 later on, the clinical application of HeartMate 3, which actually had the same -- the same shape, you know. It

was by "27" definitely, you know, only the HVAD.
BY MR. VARE:
Q. So just to be clear, you have never implanted in a human being an LVAD configured or structured as shown in Figure 13 of your declaration?
MS. RAGHAVAN: Objection. Form.
A. I never implanted an LVAD, you know, that never came into existence, you know, and therefore I couldn't implant it either in animal nor in a human being.
BY MR. VARE:
Q. I have put into Exhibit Share another exhibit marked as Exhibit 2025. Let me know when you have that exhibit.
A. Oh, it says "it looks like you don't have permission for this resource," interesting enough.
Q. For Exhibit Share?
A. Oh, now it's -- now it's here.
Q. Okay.
A. Where do I have that, you know, in my declaration?
Q. You do not.
A. I do not.
Q. No, you do not cite what I have shown you

as Exhibit 2025.
So I'm going to ask you first -- so this is a journal article authored by Jeff LaRose and others on the "Design Concepts and Principle of Operation of the HeartWare Ventricular Assist System" published in 2010.
Do you see that?
A. I see that.
Q. And do you recognize this article?
A. It's long ago.
Q. Do you recall reading this article at some point in time?
A. Probably, but actually I cannot recall it at this point. I'm sorry.
Q. Jeff LaRose is the -- was the senior engineer that you talk about in your declaration, correct? He was -- he was at HeartWare?
A. Yes. He was --
Q. And is this the same Jeff LaRose --
A. This is the same Jeff LaRose.
Q. -- who is the first author?
And if you look at Page 286 of Exhibit 2025, you see Figure 2?
A. Figure 2, yeah.
Q. Yeah. And is that the same exploded view

of the HeartWare HVAD pump that we looked at in your PowerPoint presentation, Exhibit 2025?
A. That is correct.
Q. And this is the exploded view of the HeartWare HVAD pump that you would have implanted in your clinical trials and development of HeartWare HVAD?
MS. RAGHAVAN: Objection. Form.
A. That is correct.
BY MR. VARE:
Q. Now, in your declaration, Paragraph 55.
A. Yeah.
Q. You say in late 2023, you agreed to a consultancy role with HeartWare to develop the HVAD.
A. Correct.
Q. Did you have to sign a non-disclosure agreement with HeartWare when you began working with them to develop the HVAD?
A. Absolutely.
Q. And --
A. Even when -- when they actually showed the pump for the first time at the road show, which I mentioned in my article, the obituary, I had to sign an NDA, which actually is normal. This is nothing new.
Q. And did that NDA restrict you in any way

with respect to talking about or publishing your work developing the HeartWare HVAD?
MS. RAGHAVAN: Objection. Form.
A. As soon as, you know, I started to consult for HeartWare, I mean, this was not relevant anymore, and there was at that time, I mean, you know, not that much to publish, especially from the clinical point of view.
BY MR. VARE:
Q. So I'm asking, when you signed -- you signed an NDA with HeartWare when you started working with them to develop the HVAD, correct?
A. Just due to the fact that, you know, we actually have been, you know, in the clinical setting using at that time the MicroMed pump, and started to work on the DuraHeart pump from the clinical point of view, so I needed to disclose that I would not actually pass on any information to others.
Q. Okay. So the answer to my question is, when you started working with HeartWare in late 2003, you signed an NDA that restricted you from publishing or talking about what you were doing with others, correct?
MS. RAGHAVAN: Objection. Form.

A. It was part of my contract, you know, with HeartWare.
BY MR. VARE:
Q. Okay. And did the NDA restrict you from publishing the work that you were doing to develop the HeartWare HVAD --
A. No.
Q. -- for a period of time?
A. Nope.
Q. So you could -- you believe that the NDA allowed you to publish as soon as you began developmental work on the HVAD?
MS. RAGHAVAN: Objection. Form.
A. There was no -- yeah, there was no reason, you know, to publish anything, you know, if we actually started to develop something. This would be unreal.
BY MR. VARE:
Q. So it wasn't until you would have developed an actual HVAD pump that you would have published anything about it, correct?
MS. RAGHAVAN: Objection. Form.
A. That is correct. And my first publication, you know, with the HVAD was I think in 2007, as far as I can recall, about the first

implantation of -- the experience of the first implantation with the HVAD.
BY MR. VARE:
Q. And did you cite that document in your declaration?
A. Nope. Because I think, you know, Exhibit 1049, I mean, more or less is only the obituary paper, you know, that I wrote. But I mean, once again, I mean, this was in 2022 that I actually had it.
Q. Well, let's switch gears a bit to the DuraHeart. And you began talking about the DuraHeart in your declaration in Paragraph 62.
Do you see that?
A. Just a sec. Yep.
Q. And then at Page 65 (sic), you state that, "By 2006, the DuraHeart pump had been implanted in 20 patients."
A. That is correct.
Q. And you cite Exhibit 1046 for that, which we have looked at before?
A. Yeah. So let me go back. 1046. Here we go. Yeah. Uh-huh. Which one is -- yeah. Okay.
Q. And I think we established this, but where was the DuraHeart implanted? What part of the body?

A. It was implanted, I mean, in a clinical setting, in the -- in a preperitoneal pocket.
Q. Okay. And if you look at Exhibit 1046, Page 3.
A. Yeah.
Q. It talks about the displacement volume, the weight, and the height of the DuraHeart?
A. Yeah.
Q. And I think I asked you this earlier, so I apologize if I did, but the weight and the height and the displacement of the DuraHeart is similar to the weight, height, and displacement of the Bourque 2001 pump?
MS. RAGHAVAN: Objection. Form.
A. It comes close.
BY MR. VARE:
Q. If you look at Figure 2A of Exhibit 1046.
A. Yeah.
Q. And that figure shows a picture of the DuraHeart that you implanted?
A. Correct.
Q. I'm introducing another exhibit, which is marked Exhibit 2026. And let me know when you have that exhibit.

A. I guess I didn't mention that, you know, in my -- in my declaration, but it's one of the papers, you know, that actually we wrote from our experience. You know, Nishinaka used to be a fellow, you know, in Vienna, and he was working with me.
Q. So you have answered questions I haven't asked yet, but I'll go ahead and ask them.
You recognize Exhibit 2026, correct?
A. Correct.
Q. And this is an article published in 2006, and you are one of the co-authors?
A. Correct.
Q. And the first author is a gentleman by the name of Tomohiro Nishinaka, correct?
A. That is correct.
Q. And this article, 2026, Exhibit 2026, describes the first clinical experience implanting the DuraHeart LVAD?
A. That is correct.
MS. RAGHAVAN: Objection. Form.
BY MR. VARE:
Q. So in the -- in the "methods and results," it says, "Four male patient had end-stage heart -- left heart failure and received a DuraHeart VAD as a left

ventricular assist device for bridge-to-transplantation."

What is bridge-to-transplantation? Is that bridge to a heart transplant surgery?

A. Yes.

Q. And I have also seen bridge-to-destination described in the use of LVADs.

Are you familiar with that?

A. There is nothing, you know, in terminology, you know, that is a bridge-to-termination (sic), unless you say you have a temporary assist device that actually just bridges the time until you have a durable left ventricular assist device available. But it's a completely different story, I'm sorry to say that.

Q. What do you mean by that, completely different story?

A. Because you actually are talking about LVADs, which means left ventricular assist devices, which are supposed to be mainly, you know, used in the clinical terminology, and I think that's important.

The clinical terminology means, you know, that you have a durable left ventricular assist device, you know, that is fully implanted, and that means, you

know, the patient can stay on that particular device for a long period of time, years. I have patients with, you know, 14, 15 years on these devices, yeah.

And various -- you know, the temporary assist devices that we have, you actually are supposed to replace them or actually take them out after a short period of time.

So you can have a bridge-to-destination therapy, which means, you know, you bridge a short period of time with a temporary left ventricular, or any kind -- an ECMO can be the same, you know, an ECMO is not an LVAD -- for an implantation with a durable left ventricular assist device.

Q. So if you look at Figure 1 of the Exhibit 2026, the Nishinaka article.

Do you see that?

A. Uh-huh. Yeah.

Q. And you recognize that as the HeartWare -- or I'm sorry, the DuraHeart LVAD?

A. That's correct.

Q. DuraHeart VAD. And that's the one that you would have implanted clinically in a human being?

A. Correct.

Q. And what's shown in Figure 1? Is that the

same DuraHeart device that we looked at as shown in Exhibit 1046?

A. I think that's correct.

Q. 1046 would be in your -- like on your screen. And --

A. Yeah.

Q. If you want to pull that up again, it was Figure 2A.

A. Let me just do it. 46, right? Yeah. Uh-huh.

Q. Yep. And so the DuraHeart device shown in Figures 1 and 3 of Exhibit 2026, and as -- is the same DuraHeart device shown in Figure 2A of Exhibit 1046, correct?

A. Correct.

Q. And that has both the inflow and outflow extending radially outward from an axis of rotation of the impeller, correct?

A. Correct.

Q. And just to make clear, the DuraHeart VAD that you are describing your implantation experience with in Exhibit 2026 was placed in the left side preperitoneal upper abdominal pocket, correct?

A. Correct.

Q. When you wrote this article in 2006, was it -- was it your opinion that it was -- it was still debatable which type of rotary pump, axial or centrifugal, was preferable for application in patients requiring higher pump flows or long-term support?

A. Can you actually rephrase that, you know, and give me a more precise question, please?

Q. Okay. Why don't we just look at the words that were written then. So go to Page 1424 of Exhibit 2026.

A. 26? 2026, you said?

Q. Exhibit 2026. That's a Nishinaka article, Page 1424.

A. Okay. And once again, page?

Q. 1424.

A. 24. Yep.

Q. It's the second-to-last paragraph under "discussion."

A. Uh-huh.

Q. And you write, "It is still debatable which type of rotary pump, axial or centrifugal, including the magnetically levitated DuraHeart, is preferable for application in patients requiring higher pump flows and/or long-term support."

Do you see that?
A. I see that, yeah.
Q. And did you agree with that statement at the time you wrote it in 2006?
A. Definitely, yes.
Q. And at the end of that paragraph, you say, "Nevertheless, further study is needed to confirm whether such theoretical advantages are verified in clinical use."
Do you see that?
A. That is correct. Yeah.
Q. And did you agree with that, that further study was needed to confirm whether the theoretical advantages could be verified in clinical use?
A. Yes.
Q. Is that --
A. Because I mean, at that time, you know, we only had actually a small cohort of patients available, you know, who actually got implanted, and, you know, you always go for evidence. You have to. This is medicine, yeah. Evidence-based medicine.
Q. Let's turn back to your declaration, Doctor.
A. Yeah.

Q. And let's go to Paragraph 80.
A. Okay.
Q. And in Paragraph 80, you say that, "By 2006, Mr. Bourque had already begun redesigning the prototype from 2021 to eliminate the elbow and make other enhancements to miniaturize the device so that the HeartMate 3 could be implanted directly to the apex of the heart." Correct?
A. Correct.
Q. And the HeartMate 3 is, you're referring to the clinical -- clinically approved HeartMate 3 that was introduced in 2016 or 2017, correct?
A. 2014, yeah.
Q. Okay. And that's the same Mr. Bourque that was the author of the article, Exhibit 1007, correct?
A. Correct.
Q. Do you cite any evidence, any documents, any interviews, anything, in Paragraph 80 to support your statement that you knew that he had already begun redesigning the prototype from 2001?
A. I mean, you have to take into consideration and know that our community of heart failure surgeons who actually do implants of mechanical

assist devices, as well as, you know, I mean, people who actually just work, you know, in this field is pretty small.
And I definitely know Mr. Bourque. I know most of the authors, you know, that you actually have on all the different exhibits, just due to the fact that, you know, first of all, I'm long enough, you know, in this business; and second of all, you know, I mean, I can say, you know, that I have a very good relationship with many of them, due to the fact that I am an engineer as well as a doctor.
Q. Can you answer my question, which was, do you cite any evidence, documents, or interviews to support your statement in Paragraph 80? Is there any citation whatsoever in Paragraph 80?
MS. RAGHAVAN: Objection. Form.
A. There is this exhibit, you know, 2007, that actually I used in my statement and in my declaration in order to explain that.
BY MR. VARE:
Q. And that's in Paragraph 81?
A. 81.
Q. But nothing in Paragraph 80, and so you want to go to 81.

And so the cite to support both Paragraph 80 and Paragraph 81 would be Exhibit 2007?
A. Yeah. I think, you know, you have to take into consideration, and this is a explanation for that, that by the time we did the first implant of the HVAD, you know, and even before that, a lot of people were criticizing Mr. Bourque and Thoratec, you know, about the size of the HeartMate 3, due to the fact, you know, that they actually were supposed to, you know, make changes to it, because everybody in the community told them, you know, I mean, why are you having such a big pump, you know, it's not necessary, do this, do that in order to change that.
And I think, you know, this is what Kevin Bourque, you know, more or less took into consideration and started working on it.
MR. VARE: Just for formality purpose, I'll move to strike as nonresponsive.
BY MR. VARE:
Q. You identified Exhibit 2007, which I have now put into the Exhibit Share.
A. Okay.
Q. And let me know when you see that.
A. Yes.

Q. And this document, Exhibit 2007, reflects an interview published online by the Abbott Newsroom of Kevin Bourque, correct?
A. Correct.
Q. And the date of this published interview is December 16th, 2021?
A. Correct.
Q. And earlier you testified that you have not talked to Kevin Bourque in preparation of your declaration or for this deposition, correct?
A. Correct.
Q. So you didn't talk to Kevin Bourque about this interview published in December of 2021?
A. Correct.
Q. And you did not talk to Kevin Bourque to confirm the statements you make, your opinions that you have in Paragraphs 80 and 81 and 82 in your declaration?
A. Correct. No, I did not talk to him.
MR. VARE: Why don't we take a break. I want to see where I'm at and see if we can conclude.
THE REPORTER: Off the record.
[A recess was taken.]
THE REPORTER: We are back on the record.

BY MR. VARE:
Q. Thank you. Doctor, when you implant an LVAD and you attach it directly to the apex of the heart, do you need to be careful not to resist the movement of the heart during beating?
A. No.
MS. RAGHAVAN: Objection. Form.
A. The issue is, you know -- and this is just for you to know -- the heart is restricted by itself, you know, within the pericardium, so it cannot move to the left or to the right. It actually stays the way it is, you know. It just moves inside the pericardium, yeah?
BY MR. VARE:
Q. Okay.
A. When you do the implant, you open the pericardium. That means, you know, you give the heart a little bit more wiggle room, yeah? But this wiggle room immediately, you know, is filled up by fluid that actually -- I mean, always when you open or cut into a area, you know, in the chest or in the abdomen, whatsoever, you always have plasma that actually fills, you know, up the area around, yeah?
So it -- that's the reason why you can, you

know, place pumps, you know, straight at the apex and still the heart is not wigging enough, because the heart has very specific contraction. You know, I mean, it's like a screw, yeah? It's not like this or whatever; it's like a screw, yeah?
In addition to that, when you put in an LVAD, a left ventricular assist device, you unload the heart, yeah, because I mean, it's in parallel to the natural flow of the blood.
Q. And so the weight of the LVAD pump directly implanted to the apex of the heart, your opinion is the weight doesn't matter, you can have a really heavy pump?
MS. RAGHAVAN: Objection. Form.
A. No -- no, it matters. I'm sorry. Because once again, you know -- and I think this has been mentioned, you know, several times. The size of the device actually plays a role, because you want to make it small so you actually can implant it, you know, for example, into the pericardial space and not use a second compartment of the body, like a preperitoneal pocket or even, you know, the pelvic region, you know, to place the pump. That is definitely something, you know, you try to avoid.

MR. VARE: Okay. Thank you. I don't have any further questions. I appreciate your time today.
A. It was a pleasure.
EXAMINATION
BY MS. RAGHAVAN:
Q. Doctor, I do have a few follow-up questions for you. We can -- we can jump right in, if that's okay.
A. Yes.
Q. Can you turn back to Exhibit 1015?
A. Sorry. Sorry, it's just loading.
Q. No problem.
A. Yes.
Q. Do you recall that counsel asked you some questions about this article?
A. Yes.
Q. Do you recall that counsel asked you whether this document contains an illustration or a figure of the pump, the HeartWare pump?
A. Yes.
Q. And you agreed that it didn't, correct?
A. Correct.
Q. Would you agree that this document includes a textual description of the pump design for

an HVAD?
A. Absolutely, yes.
MR. VARE: Objection. Objection. Form. Leading.
A. I think you have to take into consideration, you know, this is not a journal article. This is an abstract, you know, for a presentation at the ASAIO meeting, you know, in 2004.
And usually, in a abstract for a presentation for a society, you know, you hardly put in pictures because there is no space for it, so you actually just more or less limit yourself to a declaration, you know, I mean, how this pump or whatever you do is actually mentioned.
You know, it's -- in a formal paper, it would be the methods, yeah, but in an abstract, you know, it has a completely different form, yeah, and you hardly would put pictures, you know, in an abstract, you know, for an abstract for a society meeting.
MR. VARE: I'll move to strike the response as nonresponsive.
MS. RAGHAVAN: I believe it was responsive to my question. Thank you.
BY MS. RAGHAVAN:

Q. Are you familiar with the ASAIO meeting that took place in connection with this article?
A. Yeah.
Q. Were -- did you attend that meeting?
A. Yeah.
Q. Did that meeting -- during that meeting, was the HeartWare HVAD discussed?
A. Yeah.
Q. Was the design of the HeartWare HVAD disclosed or discussed during that ASAIO meeting?
A. I'm pretty sure it was, because I mean, once again, industry actually just discusses things publicly, I mean, they have the IP secured, you know, with a patent.
And Jeff LaRose, you know, is the chief scientific officer of -- or was the chief scientific officer of HeartWare, and whatever, I mean, he actually disclosed to the public probably was secured, 100 percent was secured, you know, by IP and the patent.
MR. VARE: Move to strike as nonresponsive.
BY MS. RAGHAVAN:
Q. What is your recollection of the ASAIO meeting?

A. Once again --
MR. VARE: Objection. Objection. This is outside the scope of his declaration.
MS. RAGHAVAN: I disagree. You can answer.
A. ASAIO, you know, is the American Society For Artificial Internal Organs, which actually is the forum, you know, for pat -- for developers, you know, and clinicians who work, you know, with artificial machines, you know, like left ventricular assist devices, total artificial hearts, and so on.
And it actually is an annual meeting, and you actually present more or less -- you know, if you're in academia, you actually have to present, because, I mean, once again, it's just part of your job at the university. If you actually an industry person, you only allowed, you know, to publish and to make public things, you know, that you actually have secured, you know, to patents and so on.
And it is, you know, as I said, an annual meeting where the whole community meets. That's the reason why we know each other very well. You know, Dr. Frazier, for example, you know, used to be the director of the MCS program at Texas Heart, and he was also

involved, you know, in the animal experiments of the HeartWare HVAD. We did that, you know, in his institution.
MR. VARE: I'll move to strike as nonresponsive and outside the scope of both his declaration and the scope of my cross-examination.
BY MS. RAGHAVAN:
Q. Can you turn to Exhibit 1044, Doctor?
A. Yes.
Q. You recall counsel asked you questions about this document as well?
A. Yes.
Q. And this document is dated March 24, 2006, correct?
A. Correct.
Q. And it concerns the first human implant of HeartWare's HVAD, is that correct?
A. That is correct.
Q. By the time of this article, is it your opinion that a person of ordinary skill in the art knew what the HeartWare HVAD pump looked like?
MR. VARE: Objection. Form. Leading. And it's outside the scope.
A. Well, I think, you know, at that time

everybody knew how the HeartWare HVAD, you know, actually was looking. And as a matter of fact, you know, one month later was the International Society of Heart and Lung Transplantation meeting in Madrid, and I actually presented, you know, the first implant, you know, in Madrid, about this implant.

MR. VARE: Move to strike as nonresponsive and outside the scope.

BY MS. RAGHAVAN:

Q. What is the basis of your statement that everybody knew how the HeartWare HVAD was looking as of 2006?

MR. VARE: Move -- it's objection as to leading and also outside the scope.

A. Am I supposed to answer?

BY MS. RAGHAVAN:

Q. You can answer.

A. Well, the issue was, you know, that -- and I think, you know, this has been mentioned already, everybody tried, you know, to make the pumps small, you know, so they can be implanted into -- in the heart either, because I mean, Jarvik in 2000 actually was the first one who did that, yeah?

He actually -- the Jarvik pump was so small that

you actually could place it inside the left apical wall. And so I mean, this was more or less the objection of everybody, to make the pumps as small as possible, yeah? And so it was more or less, you know, relevant to all the investigators, you know, and developers of pumps to be able to, you know, make small pumps.

And for sure, you know, since Wampler had in 1999 already, you know, the idea to implement the inflow cannula into the housing of the pump, yeah, and to make with that move, you know, the pump smaller so you can implant it, you know, into the intrapericardial -- the idea, you know, is not new, yeah, and was available, you know, to a lot of people in the field.

So it was just a matter of fact, I mean, that you actually are able to do that appropriately and to make pumps smaller so they actually can be placed, you know, into the pericardial space.

MR. VARE: I'll move to strike the response, the answer as nonresponsive and outside the scope of his declaration and my cross-examination.

BY MS. RAGHAVAN:

Q. So going back to the HeartWare HVAD.

My question was, what is the basis of your statement that everybody knew how the HeartWare HVAD pump looked?

MR. VARE: Which just confirms my objection as appropriate.

MS. RAGHAVAN: Thank you for the commentary.

A. Anyway --

MR. VARE: Same objection to the question. It's outside the scope, beyond the scope of the declaration, and also outside the scope of the cross-examination.

BY MS. RAGHAVAN:

Q. You can answer.

A. Okay. So since, actually, in 2004 Jeff LaRose, you know, was presenting the shape and the size, you know, of the pump of the HeartWare HVAD pump, you know, at that size -- at that time, it was more or less, you know, evident, you know, to the community, you know, that HeartWare is working on such a pump, you know, with a small size, you know.

At that time, the question for us was, you know, from the development group, to have, you know, a controller that is appropriate, you know, the shape of

the controller. We actually implemented a lot of interesting new stuff, for example, you know, storage media in an end.

But the pump -- the frozen design of the pump, you know, was around beginning of 2004, and that's the reason why Jeff LaRose actually could present it at the ASAIO meeting.

MR. VARE: I'll move to strike the answer as nonresponsive and outside the scope of his declaration and cross-examination.

MS. RAGHAVAN: I believe you already objected, Todd.

And I have no further questions for you, Doctor. Thank you.

MR. VARE: Thank you. Nothing further from me.

[11:24 a.m.]

THE REPORTER: Todd, are you just needing an e-transcript?

MR. VARE: We need just a transcript, we need a rough as soon as possible, and then we do need to expedite the final transcript, because we have got a pleading due shortly. So what are your expedited options here?

THE REPORTER: We can get it before the end of the week even.
MR. VARE: Awesome. That will work.
THE REPORTER: And then Saranya, what are you needing?
MS. RAGHAVAN: We'll get a rough as well, and then we can do standard delivery on the final.

[SIGNATURE RESERVED.]

C E R T I F I C A T E

I, Jude Arndt, a Certified Shorthand Reporter and Certified Court Reporter, do hereby certify that DR. GEORG WIESELTHALER, prior to the commencement of the examination, was sworn by me via videoconference on January 15, 2026, to testify the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a true and accurate transcript of the proceedings as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in this action.

JUDE ARNDT, CSR, CCR, RPR
CSR NO. 084-004847
CCR NO. 1450

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January 16, 2026

To: Ms. Raghavan

Case Name: Abbott Laboratories v. Miracor Medical SA

Veritext Reference Number: 7828108

Witness: Dr. Georg Wieselthaler Deposition Date: 1/15/2026

Dear Sir/Madam:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,
Production Department

NO NOTARY REQUIRED IN CA

DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 7828108
CASE NAME: Abbott Laboratories v. Miracor Medical SA
DATE OF DEPOSITION: 1/15/2026
WITNESS' NAME: Dr. Georg Wieselthaler
In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.
I have made no changes to the testimony as transcribed by the court reporter.

_____ _____
Date Dr. Georg Wieselthaler

Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

They have read the transcript;
They signed the foregoing Sworn Statement; and
Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal

this _____ day of_____, 20____.

_____
Notary Public

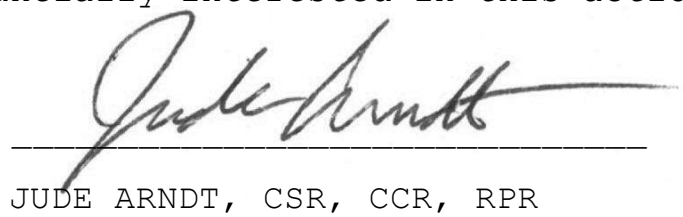
_____
Commission Expiration Date

C E R T I F I C A T E

I, Jude Arndt, a Certified Shorthand Reporter and Certified Court Reporter, do hereby certify that DR. GEORG WIESELTHALER, prior to the commencement of the examination, was sworn by me via videoconference on January 15, 2026, to testify the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a true and accurate transcript of the proceedings as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in this action.



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JUDE ARNDT, CSR, CCR, RPR

CSR NO. 084-004847

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