

No. 17-1487

In The
Supreme Court of the United States

MELISSA KAY COOK, Individually and MELISSA KAY
COOK, as Guardian *Ad Litem* of Baby A, Baby B and Baby C,

Petitioners,

v.

CYNTHIA ANN HARDING, M.P.H.; et al.,

Respondents.

**On Petition For A Writ Of Certiorari
To The United States Court Of Appeals
For The Ninth Circuit**

**MOTION AND BRIEF OF AMERICAN
ASSOCIATION OF PRO-LIFE OBSTETRICIANS
& GYNECOLOGISTS, CHARLOTTE LOZIER
INSTITUTE, NATIONAL CATHOLIC BIOETHICS
CENTER, NATIONAL ASSOCIATION OF CATHOLIC
NURSES – U.S.A., CATHOLIC MEDICAL
ASSOCIATION, CONCERNED WOMEN FOR
AMERICA, CENTER FOR FAMILY & HUMAN
RIGHTS, AND AMERICAN COLLEGE
OF PEDIATRICIANS AS AMICI CURIAE
IN SUPPORT OF PETITIONERS**

THOMAS BREJCHA

Counsel of Record

SARAH E. PITLYK

THOMAS MORE SOCIETY

19 South LaSalle Street, Suite 603

Chicago, Illinois 60603

(312) 782-1680

tbrejcha@thomasmoresociety.org

*Counsel for Amici Curiae, American
Association of Pro-Life Obstetricians &
Gynecologists, Charlotte Lozier Institute,
National Catholic Bioethics Center, National
Association of Catholic Nurses – U.S.A., Catholic
Medical Association, Concerned Women for
America, Center for Family & Human Rights,
and American College of Pediatricians*

**MOTION FOR LEAVE TO
FILE AMICUS CURIAE BRIEF**

Petitioner Melissa Cook and Respondents Edmund G. Brown, Jr., Governor of the State of California and Karen Smith, M.D., M.P.H., have consented to the filing of this amicus curiae brief by American Association of Pro-Life Obstetricians & Gynecologists (“AAPLOG”), the Charlotte Lozier Institute (“CLI”), the National Catholic Bioethics Center (“NCBC”), the National Association of Catholic Nurses – U.S.A. (“NACN-USA”), the Catholic Medical Association (“CMA”), Concerned Women for America (“CWA”), the Center for Family & Human Rights (“C-Fam”), and the American College of Pediatricians (“ACPeds”). Respondents Cynthia Ann Harding, M.P.H., Jeffrey D. Gunzenhauser, M.D., M.P.H., Dean C. Logan; C.M.; Kaiser Foundation Hospital, Panorama City Medical Center, and Payman Rashan have withheld their consent. Therefore, pursuant to Supreme Court Rule 37.2(b), AAPLOG, CLI, NCBC, NACN-USA, CMA, CWA, C-Fam, and ACPeds move for leave to file this amicus curiae brief in support of Petitioner in the above-captioned matter for the following reasons:

Amicus curiae American Association of Pro-Life Obstetricians & Gynecologists is a non-profit professional medical organization consisting of approximately 4,600 members, of which at least 3,000 are Obstetricians-Gynecologists practicing medicine in the United States and several foreign countries. AAPLOG’s mission is to encourage the practice of medicine consistently with scientific truth and the Hippocratic

Oath, both of which it views as orienting medicine, as a healing art, toward the well-being and flourishing of all human life. Its mission includes informing courts, legislatures and the general public of scientific developments and their impact on the ethical practice of medicine.

Amicus curiae Charlotte Lozier Institute is the education and research arm of the Susan B. Anthony List. Named after a 19th century feminist physician who, like Susan B. Anthony, championed women's rights without sacrificing either equal opportunity or the lives of the unborn, the Lozier Institute studies federal and state policies and their impact on women's health and on child and family well-being.

Amicus curiae National Catholic Bioethics Center is a non-profit research and educational institute committed to applying the principles of natural moral law, consistent with many traditions including the teachings of the Catholic Church, to ethical issues arising in healthcare and the life sciences. NCBC is committed to fostering a culture of respect for human life and human dignity, particularly in the medical context.

Amicus curiae National Association of Catholic Nurses – U.S.A. is the national professional organization for Catholic nurses in the United States. A non-profit group of hundreds of nurses of different backgrounds, the NACN-USA focuses on promoting moral principles of patient advocacy, human dignity, and professional and spiritual development in the integration of faith and health within the Catholic context in nursing.

Amicus curiae Catholic Medical Association is a national, physician-led community of healthcare professionals that informs, organizes, and inspires its members in steadfast fidelity to the teachings of the Catholic Church, to uphold the principles of the Catholic faith in the science and practice of medicine. CMA has a membership of approximately 2,200 healthcare professionals throughout the United States.

Amicus curiae Concerned Women for America is the nation's largest public policy women's organization with a rich history of over three decades of helping members across the country bring Biblical principles into all levels of public policy. Among the seven core values underlying CWA's mission are the protection of all innocent human life from conception until natural death and defense of the family. Both of those issues are implicated by the practice of gestational surrogacy.

Amicus curiae Center for Family & Human Rights was founded in 1997 with a mission to defend life and family at international institutions and to publicize the debate. C-Fam is a non-partisan, non-profit research institute dedicated to, among other things, reestablishing a proper understanding of the dignity of the human person. This case implicates the dignity of the most vulnerable humans, unborn children.

Amicus curiae American College of Pediatricians is a national organization of pediatricians and other healthcare professionals dedicated to the health and well-being of children. The ACPeds Board of Directors has conducted research on surrogacy and is gravely

concerned about its effects on gestational mothers and children.

As part of their advocacy efforts, all amici file amicus briefs relating to medical practices that implicate the dignity of the human person, such as abortion, embryo-destructive research, and surrogacy. Surrogacy raises an array of troubling issues that all amici consider to be of paramount public concern and within their organizational missions. There is a voluminous and ever-growing body of medical research showing that surrogacy poses serious medical risks to both the pregnant women and the children they carry. In addition, the practice of surrogacy has grave effects on society, such as diminished respect for motherhood and the unique mother-child bond; exploitation of women; commodification of gestation and of children themselves; and weakening of appropriate social mores against eugenic abortion. Any medical practice that exploits and commodifies vulnerable members of the human family is of concern to amici and their members, who share the goal of ensuring that the medical profession promotes human dignity and adheres to its foundational commitment to “do no harm.”

Amici submit that their amicus curiae brief will aid the Court in understanding the physical effects of gestational surrogacy on surrogates and their children. The information provided herein will help the Court to better understand and evaluate the parties’ claims about the effects of California’s gestational surrogacy statute on fundamental rights and familial relationships, which are crucial to resolution of this case.

THEREFORE, amici curiae, AAPLOG, CLI, NCBC, NACN-USA, CMA, CWA, C-Fam, and ACPeds respectfully request that this Court accept the attached amicus curiae brief in support of the Petitioners.

Respectfully submitted,

THOMAS BREJCHA

Counsel of Record

SARAH E. PITLYK

THOMAS MORE SOCIETY

19 South LaSalle Street, Suite 603

Chicago, Illinois 60603

(312) 782-1680

tbrejcha@thomasmoresociety.org

May 30, 2018

Counsel for Amici Curiae, American Association of Pro-Life Obstetricians & Gynecologists, Charlotte Lozier Institute, National Catholic Bioethics Center, National Association of Catholic Nurses – U.S.A., Catholic Medical Association, Concerned Women for America, Center for Family & Human Rights, and American College of Pediatricians

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INTEREST OF AMICI CURIAE¹

Amicus curiae American Association of Pro-Life Obstetricians & Gynecologists (“AAPLOG”) is a non-profit professional medical organization consisting of approximately 4,600 members, of which at least 3,000 are Obstetricians-Gynecologists practicing medicine in the United States and several foreign countries. AAPLOG’s mission is to encourage the practice of medicine consistently with scientific truth and the Hippocratic Oath, both of which it views as orienting medicine, as a healing art, toward the well-being and flourishing of all human life. Its mission includes informing courts, legislatures and the general public of scientific developments and their impact on the ethical practice of medicine.

Amicus curiae Charlotte Lozier Institute (“CLI”) is the education and research arm of the Susan B. Anthony List. Named after a 19th century feminist physician who, like Susan B. Anthony, championed women’s rights without sacrificing either equal opportunity or the lives of

¹ Petitioner Melissa Cook and Respondents Edmund G. Brown, Jr., Governor of the State of California and Karen Smith, M.D., M.P.H., have consented to the filing of this brief by and through their counsel. Respondents Cynthia Ann Harding, M.P.H., Jeffrey D. Gunzenhauser, M.D., M.P.H., Dean C. Logan; C.M.; Kaiser Foundation Hospital, Panorama City Medical Center, and Payman Rashan have withheld their consent. Further, as required by Supreme Court Rule 37.6, counsel certifies this brief was not authored, in whole or in part, by counsel to a party, and no monetary contribution to the preparation or submission of this brief was made by any person or entity other than amici curiae, their members, or their counsel. The parties were notified ten days prior to the due date of this brief of the intention to file.

the unborn, the Lozier Institute studies federal and state policies and their impact on women's health and on child and family well-being.

Amicus curiae National Catholic Bioethics Center ("NCBC") is a non-profit research and educational institute committed to applying the principles of natural moral law, consistent with many traditions including the teachings of the Catholic Church, to ethical issues arising in healthcare and the life sciences. NCBC is committed to fostering a culture of respect for human life and human dignity, particularly in the medical context.

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Amicus curiae Concerned Women for America (“CWA”) is the nation’s largest public policy women’s organization with a rich history of over three decades of helping members across the country bring Biblical principles into all levels of public policy. Among the seven core values underlying CWA’s mission are the protection of all innocent human life from conception until natural death and defense of the family. Both of those issues are implicated by the practice of gestational surrogacy.

Amicus curiae Center for Family & Human Rights (“C-Fam”) was founded in 1997 with a mission to defend life and family at international institutions and to publicize the debate. C-Fam is a non-partisan, non-profit research institute dedicated to, among other things, reestablishing a proper understanding of the dignity of the human person. This case implicates the dignity of the most vulnerable humans, unborn children.

Amicus curiae American College of Pediatricians (“ACPeds”) is a national organization of pediatricians and other healthcare professionals dedicated to the health and well-being of children. The ACPeds Board of Directors has conducted research on surrogacy and is gravely concerned about its effects on gestational mothers and children.

Surrogacy raises an array of troubling issues that all amici consider to be of paramount public concern and within their organizational missions. There is a voluminous and ever-growing body of medical research

showing that surrogacy poses serious medical risks to both surrogates and the children they carry. In addition, the practice of surrogacy has grave effects on society, such as diminished respect for motherhood and the unique mother-child bond; exploitation of women; commodification of gestation and of children themselves; and weakening of appropriate social mores against eugenic abortion. Any medical practice that exploits and commodifies vulnerable members of the human family is of concern to amici and their members, who share the goal of ensuring that the medical profession promotes human dignity and adheres to its foundational commitment to “do no harm.”



INTRODUCTION AND SUMMARY OF THE ARGUMENT

Amici AAPLOG, CLI, NCBC, NACN-USA, CMA, CWA, C-Fam, and ACPeds submit this amicus curiae brief to elaborate on the medical burdens and risks associated with gestational surrogacy, in order to help the Court better appreciate the consequences of laws, such as California Family Code § 7962, that enable and enforce the practice of surrogacy.

Gestational surrogacy involves tremendous physical stress and medical risk for both the surrogate and her children, both before and after birth. Gestational surrogacy requires *in vitro* fertilization (“IVF”), which poses substantially greater burdens and risks to the mother than spontaneous conception. Babies born of

surrogacy are also at substantially increased risk of many serious diseases and disorders. The practice of “gestational surrogacy” harms women and children.



ARGUMENT

I. Surrogacy harms surrogate birthmothers.

Every pregnancy involves significant physical stress for the pregnant woman. *See* P. Soma-Pillay et al., *Physiological Changes in Pregnancy*, 27 *CARDIOVASC. J. AFR.* 89, 89 (2016) (enumerating the “significant anatomical and physiological changes” associated with pregnancy). Because they are initiated by IVF, gestational surrogate pregnancies involve even greater physical risks and burdens than pregnancies conceived spontaneously, and without any of the prospective benefits associated with lifelong parenthood. Surrogacy’s burdens on birthmothers far outweigh any benefit to them.

A prospective gestational surrogate has to endure an onerous hormone regimen before she even becomes pregnant, in order to prepare her body to receive the embryo(s) she will carry. *See* Center for Bioethics & Culture Network, *Drugs Commonly Used for Women in Gestational Surrogacy Pregnancies*, <http://breeders.cbcnetwork.org/wp-content/uploads/2013/12/Drugs-Commonly-Used-for-Women-in-Gestational-Surrogacy-Pregnancies.pdf> (last visited May 21, 2018). That drug regimen typically includes a synthetic hormone, e.g., Lupron, to inhibit her menstrual cycle and place her into “medical

menopause,” followed by oral estrogen to “artificially thicken the lining of the endometrium,” followed by progesterone to further enhance the uterine lining and improve the likelihood of successful implantation. *Id.* If the intended effects of the drug regimen were not difficult enough to tolerate, the prospective surrogate also assumes the risk of a whole range of undesirable side effects, including “hot flashes, headache, mood swings and depression, general body aches, nausea, joint pain, edema, nervousness, weight gain, dizziness, tingling in extremities, [and] loss in bone density.” *Id.*; see also K. Momberger, *Breeder at Law*, 11 COLUM. J. GENDER & L. 127, 159 (2002) (“Because it shuts down your system to a certain extent, Lupron causes you to have menopause-like side effects. . . . Lupron also caused me severe migraine headaches and constant fatigue. . . .”); J. Radecki, *Note: The Scramble to Promote Egg Donation Through a More Protective Regulatory Regime*, 90 CHI.-KENT L. REV. 729, 746-48 (2015) (noting that Lupron is not FDA-approved for use in assisted reproduction and that its side effects for those purposes have therefore not been adequately evaluated).

If one or more embryos successfully implant in the gestational surrogate’s uterus, the pregnant surrogate mother is then at higher risk of many serious complications and adverse outcomes than pregnant mothers who conceived spontaneously. A recent meta-analysis of 50 cohort studies comprising 161,370 singleton pregnancies conceived by assisted reproductive technologies (“ART”) such as IVF and 2,280,241

spontaneously-conceived singleton pregnancies found that women who conceive singleton pregnancies by ART are at elevated risk of many grave complications—e.g., pregnancy-induced hypertension, gestational diabetes, placenta previa, placental abruption, antepartum hemorrhage, postpartum hemorrhage, polyhydramnios, oligohydramnios, and cesarean section—relative to women who conceive singletons spontaneously. See J. Qin et al., *Assisted Reproductive Technology and the Risk of Pregnancy-Related Complications and Adverse Pregnancy Outcomes in Singleton Pregnancies: A Meta-Analysis of Cohort Studies*, 105 FERTILITY & STERILITY 73, 76 (2016) (“Qin I”); see also P. Henriksson et al., *Incidence of Pulmonary and Venous Thromboembolism in Pregnancies After In Vitro Fertilization: Cross Sectional Study*, 346 BMJ e8632 (2013), available at <http://www.bmj.com/content/346/bmj.e8632> (last visited May 21, 2018) (“Pregnant women are at higher risk of venous thromboembolism after *in vitro* fertilisation, particularly during the first trimester. The risk of pulmonary embolism in women after *in vitro* fertilisation was increased almost sevenfold during the first trimester. . .”).

IVF also yields a higher number of multifetal pregnancies than spontaneous conception. Multiple pregnancies pose substantially higher risks of medical complications than singleton pregnancies. See Am. C. Obstetricians & Gynecologists (“ACOG”), *Practice Bulletin No. 169: Multi Fetal Gestations: Twin, Triplet, and Higher-Order Multi Fetal Pregnancies*, 128 OBSTETRICS & GYNECOLOGY 926 (2016). Pregnant mothers of

multiples are at higher risk than women bearing singletons of “hyperemesis, gestational diabetes mellitus, hypertension, anemia, hemorrhage, cesarean delivery, and postpartum depression,” as well as hypertensive complications, such as preeclampsia. *Id.* at 927; *see also* A. Lynch et al., *Preeclampsia in Multiple Gestation: The Role of Assisted Reproductive Technologies*, 99 *OBSTETRICS & GYNECOLOGY* 445 (2002) (finding an increased risk of preeclampsia in pregnancies conceived by ART). Moreover, mothers of multiples conceived by ART are at higher risk of certain complications *even than other mothers of multiples*, including premature rupture of membranes, pregnancy-induced hypertension, gestational diabetes, preterm birth, very preterm birth, low birthweight, very low birthweight, and congenital malformations. *See* J. Qin et al., *Pregnancy-Related Complications and Adverse Pregnancy Outcomes in Multiple Pregnancies Resulting from Assisted Reproductive Technology: A Meta-Analysis of Cohort Studies*, 103 *FERTILITY & STERILITY* 1492, 1505 (2016) (“Qin II”).

In sum, a woman who undertakes the role of a gestational surrogate assumes a tremendous amount of physical hardship and risk. *See* Am. Soc’y Reprod. Med. Ethics Comm., *Consideration of the Gestational Carrier: A Committee Opinion*, 99 *FERTILITY & STERILITY* 1838 (2013), *available at* [http://www.fertstert.org/article/S0015-0282\(13\)00341-5/pdf](http://www.fertstert.org/article/S0015-0282(13)00341-5/pdf) (acknowledging the wide range of medical, legal, and ethical issues associated with “gestational surrogacy,” including the risk of “undue inducements for women to expose themselves to

the physical and emotional risks”) (last visited May 21, 2018).

II. Infants conceived by surrogacy are at higher risk of adverse outcomes and anomalies than infants conceived spontaneously.

Having been conceived by IVF, children born of gestational surrogacy are at higher risk of complications and anomalies than children who are conceived spontaneously. See S. Ensing et al., *Risk of Poor Neonatal Outcome at Term After Medically Assisted Reproduction: A Propensity Score-Matched Study*, 104 FERTILITY & STERILITY 384, 388 (2015) (finding higher rates of “asphyxia-related poor neonatal outcomes” and cesarean deliveries in pregnancies conceived by artificial reproductive technology than in spontaneously-conceived pregnancies); J. Liu et al., *Neonatal and Obstetric Outcomes of In Vitro Fertilization (IVF) and Natural Conception at a Chinese Reproductive Unit*, 42 CLIN. & EXP. OBSTETRICS & GYNECOL. 452, 455 (2015) (finding that IVF is associated with “an increased risk of preterm delivery, caesarean delivery, low and very low birth weight infants”). Some of those complications can be attributed to the clinical practice of transferring multiple embryos, but infants conceived by IVF are also at higher risk of structural defects, genetic disorders, and anomalies unrelated to multifetal gestation.

A. Multiple embryo transfers increase the risks to infants conceived by IVF.

The common practice of transferring multiple embryos in the context of IVF creates a very high incidence of multifetal gestations. *See* M. Reynolds et al., *Risk of Multiple Birth Associated with In Vitro Fertilization Using Donor Eggs*, 154 AM. J. EPIDEMIOLOGY 1043, 1043 (2001) (attributing a substantial increase in the rate of twin birth to the practice of transferring multiple embryos in the context of IVF). The incidence of multifetal gestation is even higher in IVF involving donor eggs—such as in the context of gestational surrogacy—than in IVF using a woman’s own eggs. *Id.* at 1047 (finding the rate of multiple births in the context of IVF with a donor egg to exceed 40 percent—“significantly higher than that previously reported for IVF patients of the same age who used their own eggs”).

Multifetal pregnancies pose far greater risks to infants than singleton pregnancies—both before and after birth. *See* E. Kamphuis et al., *Are We Overusing IVF?*, 348 BMJ g252 (2014) (“Multiple pregnancies are associated with maternal and perinatal complications such as gestational diabetes, fetal growth restriction, and pre-eclampsia as well as premature birth.”). According to the American College of Obstetricians & Gynecologists, multifetal gestations have “an approximate fivefold increased risk of still-birth and a sevenfold increased risk of neonatal death, which primarily is due to complications of prematurity.” *See* ACOG, *supra*, at 926.

Additionally, children born after a multifetal gestation have higher rates of morbidity as newborns or infants. Prematurity is not only the “leading cause of infant mortality worldwide”; it is also associated with respiratory complications, infection, neurologic damage, cognitive impairment and a wide range of other complications. R. Patel et al., *Short- and Long-term Outcomes for Extremely Preterm Infants*, 33 AM. J. PERINATOLOGY 318 (2016). “Twins born preterm (less than 32 weeks of gestation) are at twice the risk of a high-grade intraventricular hemorrhage and periventricular leukomalacia when compared with singletons of the same gestational age.” ACOG, *supra*, at 926. Intraventricular hemorrhage and periventricular leukomalacia, in turn, are associated with cerebral palsy, as well as developmental delays and learning difficulties. See L. Linsell et al., *Prognostic Factors for Cerebral Palsy and Motor Impairment in Children Born Very Preterm or Very Low Birthweight: A Systematic Review*, 58 DEVELOPMENTAL MED. & CHILD NEUROLOGY 554 (2016); T. Luu, *Lasting Effects of Preterm Birth and Neonatal Hemorrhage at 12 Years of Age*, 123 PEDIATRICS 1037 (2009).

In some cases of multifetal gestation, a mother will elect to abort one or more of the fetuses, either because the prospective parents are not prepared to parent all of the babies or because they hope to enhance the other babies’ prospects of survival. See A. Mohammed et al., *Obstetric and Neonatal Outcome of Multifetal Pregnancy Reduction*, 20 MIDDLE EAST FERTILITY SOC’Y J. 176, 177 (2015) (discussing typical rationales

for “fetal reduction”). But research has shown that elective reduction of multifetal gestations can actually increase the risk of miscarriage or prematurity of the remaining children. See A. Antsaklis et al., *Pregnancy Outcome After Multifetal Pregnancy Reduction*, 16 J. MATERNAL-FETAL & NEONATAL MED. 1807, 1812 (2015) (finding that reduction from twins to a singleton significantly increases the chances of preterm birth or miscarriage of the surviving twin); A.T. Papageoghiou et al., *Risk of Miscarriage and Early Pre-Term Birth in Trichorionic Triplet Pregnancies with Embryo Reduction Versus Expectant Management: New Data and Systematic Review*, 21 HUMAN REPRODUCTION 1912, 1916 (2006) (finding that elective reduction from triplets to twins is associated with an increase in the risk of subsequent miscarriage).

B. Children conceived by IVF have higher rates of birth defects, genetic disorders, and other anomalies.

Like their gestational mothers, children conceived by IVF have higher rates of adverse outcomes and complications. For example, research has shown that singletons conceived by IVF are at “significantly increased risk” of preterm birth and low birthweight—“the two most important determinants of neonatal morbidity and mortality”—compared with spontaneously-conceived singletons. S. McDonald et al., *Preterm Birth and Low Birth Weight Among In Vitro Singletons: A Systematic Review and Meta-Analyses*, 146 EUR. J. OBSTETRICS, GYNECOLOGY, & REPROD. BIOLOGY

138, 145 (2009) (concluding that, compared with spontaneously-conceived singleton neonates, singletons conceived via *in vitro* fertilization are at higher risk of preterm birth, very low birthweight, and intrauterine growth retardation); *see also* S. Sunderam et al., *Assisted Reproductive Technology Surveillance—United States, 2013*, 64 MORBIDITY & MORTALITY WEEKLY REPORT: SURVEILLANCE SUMMARIES, Dec. 4, 2015, at 10 (“In 2013, singleton infants conceived with ART (9.0%) were more likely than infants born in the total birth population (6.3%) to have low birthweight.”); Kamphuis, *supra*, at g252 (“[E]ven singletons born through IVF have been shown to have worse outcomes than those conceived naturally.”); Qin I, *supra*, at 76-81 (finding “ART singleton pregnancies” at “significantly increased risk” of preterm birth, low birthweight, and perinatal mortality, among other adverse outcomes).

There is also a higher incidence of congenital structural defects in children conceived by IVF than in children conceived spontaneously. A 2013 meta-analysis of 45 studies found “a statistically significant increased risk of birth defects in infants conceived using assisted reproductive technologies of the order of 30-40%.” M. Hansen et al., *Assisted Reproductive Technology and Birth Defects: A Systematic Review and Meta-Analysis*, 19 HUM. REPROD. UPDATE 330, 335 (2013). *See* M. Farhangniya et al., *Comparison of Congenital Abnormalities of Infants Conceived by Assisted Reproductive Techniques versus Infants with Natural Conception in Tehran*, 7 INT’L J. FERTILITY & STERILITY 217, 217 (2013) (reporting that infants conceived via IVF are at greater

risk of “major congenital malformations,” especially musculoskeletal and urogenital malformations, than infants conceived naturally); J. Wen et al., *Birth Defects in Children Conceived by In Vitro Fertilization and Intracytoplasmic Sperm Injection: A Meta-Analysis*, 97 FERTILITY & STERILITY 1331, 1332 (2012) (finding, based on a meta-analysis of 56 studies, that children conceived by ART are at significantly increased risk for birth defects); J. Reefhuis et al., *Assisted Reproductive Technology and Major Structural Birth Defects in the United States*, 24 HUM. REPROD. 360, 363 (2009) (finding that infants conceived by ART are at higher risk of septal heart defects, cleft lip with or without cleft palate, esophageal atresia, and anorectal atresia); D. El-Chaar et al., *Risk of Birth Defects Increased in Pregnancies Conceived by Assisted Human Reproduction*, 92 FERTILITY & STERILITY 1557, 1559 (2009) (“Compared with infants conceived naturally, a significantly greater proportion of those conceived with AHR had gastrointestinal, cardiovascular, and musculoskeletal defects.”); see also R. Klemetti et al., *Increasing Evidence of Major Congenital Anomalies in Children Born with Assisted Reproduction Technology: What Should Be Done?*, 84 FERTILITY & STERILITY 1327 (2005) (arguing that prospective parents should be informed of the evidence of potential risks of birth defects and also that further research into congenital anomalies is needed).

Children conceived by IVF are up to ten times more likely than the general population to suffer from certain serious genetic disorders, such as Beckwith-Wiedemann Syndrome (“BWS”) and Angelman Syndrome.

See T. Blackwell, *In Vitro Fertilization Linked to Rare Genetic Disorders*, NAT'L POST, Sep. 25, 2011, <http://nationalpost.com/news/in-vitro-fertilization-linked-to-rare-genetic-disorders> (last visited May 21, 2018) (describing findings that babies born after IVF are “up to 10 times more likely to suffer from” BWS and Angelman Syndrome and quoting a geneticist’s opinion that “that is likely just the tip of the iceberg”); J. Halliday et al., *Beckwith-Wiedemann Syndrome and IVF: A Case-Control Study*, 75 AM. J. HUM. GENETICS 526, 528 (2004) (finding that children conceived by IVF are nine times more likely to have Beckwith-Wiedemann Syndrome than the general population).

Children conceived *in vitro* are at elevated risk of many other diseases and disorders as well. See, e.g., S. Katari et al., *DNA Methylation and Gene Expression Differences in Children Conceived In Vitro or In Vivo*, 18 HUMAN MOLECULAR GENETICS 3769, 3776 (2009) (“[W]e have shown that *in vitro* conception is associated with quantitative differences in DNA methylation and that some of these differences may have a significant effect on gene expression.”); A. Moll et al., *Incidence of Retinoblastoma in Children Born After in-Vitro Fertilization*, 361 LANCET 309 (2003) (finding that children conceived by IVF are at increased risk for retinoblastoma, a cancer of the eye that occurs in childhood); Kamphuis, *supra*, at g252 (“Otherwise healthy children conceived by IVF may have higher blood pressure, adiposity, glucose levels, and more generalised vascular dysfunction than children conceived naturally.”).

Thus, gestational surrogacy imposes substantial physical hardship and risk on the child, as well as its mother.



CONCLUSION

For the foregoing reasons, amici urge the Court to grant the petition for writ of certiorari.

Respectfully submitted,

THOMAS BREJCHA

Counsel of Record

SARAH E. PITLYK

THOMAS MORE SOCIETY

19 South LaSalle Street, Suite 603

Chicago, Illinois 60603

(312) 782-1680

tbrejcha@thomasmoresociety.org

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Counsel for Amici Curiae, American Association of Pro-Life Obstetricians & Gynecologists, Charlotte Lozier Institute, National Catholic Bioethics Center, National Association of Catholic Nurses – U.S.A., Catholic Medical Association, Concerned Women for America, Center for Family & Human Rights, and American College of Pediatricians