OvaScience Announces Business Update

December 21, 2016

– Maintaining AUGMENT Commercial Footprint; Increasing Focus on OvaPrime and OvaTure –

– Improving Cost Structure Through Corporate Restructuring; Extending Cash Runway to Q1 2019 –

– Chief Executive Officer Harald Stock, Ph.D., Hired to Lead Commercial Expansion, Stepping Down –

WALTHAM, Mass.--(BUSINESS WIRE)--Dec. 21, 2016-- OvaScience℠ (NASDAQ: OVAS), a global fertility company focused on the discovery, development and commercialization of new treatment options, today announced a business update. The Company will continue to make AUGMENT℠ available to patients at partner clinics in Canada and Japan and maintain its current commercial footprint. However, the Company will slow its commercial expansion, reassess its ongoing and planned clinical studies of AUGMENT, and undertake a corporate restructuring. These changes will enable the Company to extend its cash position into the first quarter of 2019 and increase its focus on the development of OvaPrime℠ and OvaTure℠.

In connection with this shift in strategy, President and Chief Executive Officer, Harald Stock, Ph.D. and Chief Operating Officer, Paul Chapman, who were brought on board to lead a global commercial expansion of AUGMENT, have chosen to step down to seek new opportunities. The Company will also reduce its workforce by approximately 30 percent. Michelle Dipp, M.D., Ph.D., Executive Chair and co-founder of OvaScience, will oversee operations while the Company conducts a comprehensive search for a new chief executive officer.

“While we have made progress on building the infrastructure to commercialize AUGMENT and remain confident in its potential, the near-term financial return has not been sufficient for us to continue to invest at the levels we believe are necessary for a large commercial expansion. We remain committed to developing our groundbreaking therapies for as many women and couples as possible,” said Dr. Dipp. “We thank Harald and Paul and wish them the best in their future endeavors.”

Revising AUGMENT Strategy
OvaScience remains confident in the safety and efficacy of AUGMENT and will continue to offer the treatment to patients at partner clinics in Canada and Japan but will limit the growth of its commercial infrastructure in those countries. The Company is reassessing the ongoing IVI-sponsored clinical study in Spain as well as the planned multi-center clinical trial and will provide an update in the near-term.

Separately, OvaScience is scheduled to speak with the U.S. Food and Drug Administration in the first half of 2017, as part of its ongoing exploration of potential entry into the U.S. market.

Continuing Development of OvaPrime
OvaScience has decided to advance the clinical development of OvaPrime, a potential fertility treatment that could enable a woman to increase her egg reserve by repositioning her egg precursor (EggPC℠) cells within her ovary, where they may mature into fertilizable eggs. Diminished ovarian reserve affects approximately 30 percent of those seeking fertility treatment, and can preclude a woman from undergoing *in vitro* fertilization (IVF) if she produces, or has in the past produced, too few or no eggs following hormonal hyperstimulation. [1]

The initial decision to begin first-in-human studies was based on positive safety data from a preclinical toxicology study in non-human primates. The repositioning of EggPC cells from the outer ovarian cortex to the inner ovarian cortex was demonstrated to be safe and well-tolerated in a six-month study of 18 non-human primates. The results of this toxicology study, along with supporting data from rodent models, were presented at Annual Meeting of the European Society of Human Reproduction and Embryology in 2016.[2]

To date, 40 patients are enrolled in the ongoing Company-sponsored clinical trial in Canada, which is designed to evaluate the safety of OvaPrime and changes in a patient’s hormone levels and follicular development as measured by ultrasound. OvaScience expects to enroll up to 50 patients in this study. Additionally, five patients have been enrolled in an ongoing investigator-initiated trial in the United Arab Emirates, which is designed to evaluate reproductive outcomes, as measured by egg quality, fertilization success and embryo quality. This trial continues to enroll patients.

In 2017, the Company will utilize the results of these studies to fully assess the safety profile of OvaPrime and to help define the patient population most likely to derive the greatest benefit from treatment. In the future, the Company will use these data to support OvaPrime’s commercial efforts.

When these studies are complete, the data will be provided likely in the form of a presentation or publication.

Positive Development Progress of OvaTure in both Bovine and Human EggPC Cells
OvaScience has made significant progress toward advancing the preclinical development of OvaTure, its potential next-generation IVF treatment that could help a woman produce healthy, young, fertilizable eggs without hormone injections by maturing EggPC cells into eggs *in vitro*, or outside of the body.

The Company is progressing towards maturation of an EggPC cell-derived egg. Together with Intrexon Corporation (NYSE: XON), an *in vitro* culture system has been established with the goal of developing oocytes that exhibit developmental competence, a critical milestone which indicates normal maturation. Signature hallmarks of developmental competence that have been observed in both bovine and human models include chromosomal segregation, germinal vesicles and polar bodies. Eggs generated by the OvaTure approach, which exhibit these hallmarks, should be fertilizable and develop into an embryo.

In bovine models, fertilization studies have begun to investigate the full development capabilities of EggPC cell-derived eggs and will be the focus for 2017. Also in 2017, OvaScience will continue efforts on human egg maturation as well as work with clinical partners to enable fertilization and characterization of EggPC cell-derived eggs and embryos.

Extending Cash Runway into Q1 2019
As a result of its corporate restructuring, the Company anticipates that operating cash burn will be between $45 million and $50 million in 2017, excluding one-time cash items of approximately $7 million to $8 million related to the restructuring. The Company may also incur further restructuring charges related to the restructuring plan. OvaScience anticipates it will have sufficient funds, without additional financing, to support its revised operating plan into the first quarter of 2019.

About OvaScience℠
OvaScience, Inc. (NASDAQ: OVAS) is a global fertility company dedicated to improving treatment options for women around the world. OvaScience is discovering, developing and commercializing new fertility treatments because it believes women deserve more options. Each OvaScience treatment is based on the Company's proprietary technology platform that leverages the breakthrough discovery of egg precursor (EggPC ℠) cells – immature egg cells found inside the protective ovarian lining. The AUGMENT℠ treatment, a fertility option designed to improve IVF success rates, is available in certain IVF clinics in select international regions. OvaScience is developing the OvaPrime℠ treatment, which could increase a woman's egg reserve, and the OvaTure℠ treatment, a potential next-generation IVF treatment that could help a woman produce healthy, young, fertilizable eggs without hormone injections. OvaScience treatments are not available in the U.S. For more information, visit www.ovascience.com.

Forward-Looking Statements

This press release includes forward-looking statements about the Company's plans for the AUGMENT treatment, OvaPrime treatment and OvaTure treatment, including statements relating to the Company's plans to increase its focus on OvaPrime and OvaTure, plans to maintain the AUGMENT commercial footprint and slow commercial the expansion of AUGMENT; plans to continue to make AUGMENT available to patients in partner clinics in Canada and Japan; plans to improve the Company's cost structure through a corporate restructuring; plans to extend the Company's cash runway into the first quarter of 2019 without further financing; anticipated 2017 cash burn; anticipated cash items and restructuring charges associated with the corporate restructuring; plans to reduce the Company's workforce by 30 percent; plans to reassess the ongoing and planned clinical studies of AUGMENT; belief in the potential of the Company's EggPC technology; plans to speak with the FDA in the first half of 2017; enrollment plans for OvaPrime clinical studies in Canada and the UAE; plans to use the future data from ongoing OvaPrime studies to assess the safety profile of the treatment, help define the patient population for the treatment and support OvaPrime commercial efforts; plans to provide OvaPrime data in the future; plans to pursue fertilization studies of bovine EggPC cell-derived eggs; and plans to continue efforts in the OvaTure program relating to human egg maturation, characterization and fertilization. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including risks related to: the possibility that international IVF clinics that we work with may determine not to provide or continue providing the AUGMENT treatment or OvaPrime treatment, or to delay providing such treatments, or to limit the population of patients receiving the treatment based on clinical efficacy, safety or commercial, logistic, economic, available data, regulatory or other reasons; challenges associated with enrolling and completing clinical trials, the science underlying our treatments (including the AUGMENT, OvaPrime and OvaTure treatments), which is unproven; and scientific and regulatory challenges associated with characterizing and fertilizing an EggPC cell-derived egg; our ability to obtain regulatory approval or licenses where necessary for our treatments; our ability to develop our treatments on the timelines we expect, if at all; our ability to commercialize our treatments, on the timelines we expect, if at all; as well as those risks more fully discussed in the "Risk Factors" section of our most recently filed Quarterly Report on Form 10-Q and/or Annual Report on Form 10-K and Exhibit 99.3 to our current report on Form 8-K filed with the Securities and Exchange Commission on August 4, 2016. The forward-looking statements contained in this press release reflect our current views with respect to future events. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our view as of any date subsequent to the date hereof.

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[1] CDC Assisted Reproductive Technology 2013 National Summary, page 5

[2] http://www.ovascience.com/files/White_et_al_ESHRE_2016_poster_P440_24Jun2016_2.pdf

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