Forward-Looking Statements

Various statements we make in this presentation concerning our future expectations, plans and prospects, including, without limitation, statements related to our strategy, commercialization and development plans and our treatment and business goals, including statements relating to our plans to launch the AUGMENT™ treatment in new regions, our AUGMENT treatment cycle goals and our pricing plans, our optimization and launch goals for the OvaPrime™ treatment, our development plans for the OvaTure™ treatment, constitute forward-looking statements for the purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. 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 may decide not to begin or continue providing the AUGMENT treatment; our expectation that the AUGMENT treatment and OvaPrime treatment meet the requirements of a class of products exempt from premarket review and approval under applicable regulations in those countries where we have launched or plan to launch; the commercial ramp up of the AUGMENT treatment, which we expect will depend upon the successful transition of ACE clinics to commercial operations, the addition of new ACE clinics, and the results from ACE clinic experience as they become available; the science underlying our treatments, which is unproven; our ability to obtain, maintain and protect intellectual property; our ability to obtain additional funding to support our business activities; our dependence on third parties for development, manufacture, marketing, sales and distribution of products; the successful commercialization and development of our treatments on the timelines we expect, if at all; obtaining necessary regulatory approvals for our potential treatments; competition from others developing treatments for similar uses; and our short operating history; as well as those risks more fully discussed in the “Risk Factors” section of our most recent 10-K and 10-Q and other reports on file with the Securities and Exchange Commission. In addition, any forward-looking statements represent our views only as of today and should not be relied upon as representing our views as of any subsequent date. We do not assume any obligation to update any forward-looking statement.
OvaScience: Building a Leading Fertility Company

Fertility Treatment is a Large and Growing Market

- 1 in 6 couples worldwide diagnosed with infertility
- 90% of market is international
- Mainly self-pay

New Fertility Treatments

- AUGMENT℠ treatment launched
- OvaPrime℠ treatment introduction planned for end of 2015
- OvaTure℠ treatment in preclinical development

Proven Leadership

Proprietary Platform

The AUGMENT treatment is not available in the United States
**International Demand Accounts for 90% of Global IVF**

**Brazil, Latin America, Russia, Turkey, UAE: Growing 30 - 40% Annually**

![Pie chart showing regions with the highest IVF cycles](chart.png)

<table>
<thead>
<tr>
<th>Region</th>
<th>Cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan*</td>
<td>326,426</td>
</tr>
<tr>
<td>Europe (non-G5)</td>
<td>255,503</td>
</tr>
<tr>
<td>United States</td>
<td>174,962</td>
</tr>
<tr>
<td>India, Taiwan, S. Korea</td>
<td>148,977</td>
</tr>
<tr>
<td>Middle East*</td>
<td>111,788</td>
</tr>
<tr>
<td>Germany*</td>
<td>80,943</td>
</tr>
<tr>
<td>France</td>
<td>80,349</td>
</tr>
<tr>
<td>Australia*/New Zealand</td>
<td>66,347</td>
</tr>
<tr>
<td>U.K.</td>
<td>60,473</td>
</tr>
<tr>
<td>Italy*</td>
<td>56,147</td>
</tr>
<tr>
<td>Turkey*</td>
<td>51,567</td>
</tr>
<tr>
<td>Spain</td>
<td>44,896</td>
</tr>
<tr>
<td>Latin America</td>
<td>40,710</td>
</tr>
<tr>
<td>Canada</td>
<td>25,782</td>
</tr>
</tbody>
</table>

*Donor egg restrictions in these regions
Middle East includes: Bahrain, Egypt, Jordan, Lebanon, Libya, Saudi Arabia, Syria, Tunisia, UAE, Israel
Sources: SART; ESHRE; ICMART; Country Registries; Latin America Registry; Israeli Ministry; Japan Society of Obstetrics and Gynecology

1.5 Million IVF Cycles in 2013
Major Innovations First Discovered and Used Internationally

IVF: In Vitro Fertilization
PGD: Pre-implantation Genetic Diagnostics
ICSI: Intracytoplasmic Sperm Injection
IVM: In Vitro Maturation
IVA: In Vitro Activation

For IVF, Embryo Freezing, PGD, ICSI, IVA and Uterus Transplant: Dates above indicate first baby born

U.K. 1978
Australia 1984
U.K. 1990
Belgium 1991
Australia 1994
Denmark 2009
Japan 2013
Sweden 2014

We always thought a woman was born with a set number of eggs that die over time.

Women have egg precursor (EggPC) cells in the protective ovarian lining that can mature into fresh, young, healthy eggs.

This discovery serves as the foundation for OvaScience’s new fertility treatments.
In Vitro Fertilization (IVF) is the Standard of Care

Standard IVF Cycle

Suitability
- Blood tests, age, past medical history

Ovarian Hyperstimulation
- Hormone injections

Egg Retrieval

Egg Fertilization by ICSI

Embryo Culture and Transfer

On average, women go through 2 to 3 IVF cycles

ICSI = Intracytoplasmic Sperm Injection
Egg Health and IVF Success Decline with Age

- Standard of care (IVF) has 30% success rate
- Egg health declines with age, particularly after 35 years

OvaScience Proprietary Fertility Treatments Designed to Improve Egg Health

- **EggPC Cells**
  - Launched 2014
  - **AUGMENT℠**
    - Add energy to eggs
  - **OvaPrime℠**
    - Increase egg reserve
  - **OvaTure℠**
    - “Next-generation IVF”
    - No hormone injections

Introduction

- **EggPC Cells**

Launched 2014

End of 2015 Introduction

In Development

OvaScience Proprietary Fertility Treatments Designed to Improve Egg Health
AUGMENT\textsuperscript{SM} Treatment
**AUGMENT<sup>SM</sup> Treatment Integrates into IVF Cycle**

### Standard IVF Cycle

- **Suitability**
  - Blood tests, age, past medical history

- **Ovarian Hyperstimulation**
  - Hormone injections

- **Egg Retrieval**

- **Egg Fertilization by ICSI**
  + EggPC Mitochondria

- **Embryo Culture and Transfer**

### AUGMENT Process

- Ovarian tissue biopsy processed
- EggPC cells identified and isolated
- EggPC mitochondria isolated

ICSI = Intracytoplasmic Sperm Injection

The AUGMENT treatment is not available in the United States
Mitochondria are Key Factor in Egg Health

- Younger eggs have younger, healthier mitochondria
- Egg health is key factor in IVF success

**Adding Mitochondria to Egg During IVF Increased IVF Success**

<table>
<thead>
<tr>
<th>Mitochondria Studies</th>
<th>No. of Cycles</th>
<th>Pregnancies</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huang$^1$</td>
<td>9</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Cohen$^2*$</td>
<td>30</td>
<td>13</td>
<td>43%</td>
</tr>
<tr>
<td>Tzeng$^3$</td>
<td>71</td>
<td>25</td>
<td>35%</td>
</tr>
<tr>
<td>Levron$^4$</td>
<td>15</td>
<td>5</td>
<td>33%</td>
</tr>
<tr>
<td>Lanzendorf$^5*$</td>
<td>4</td>
<td>1</td>
<td>25%</td>
</tr>
</tbody>
</table>

---

Women Who Failed 2 or More IVF Cycles (IVF Success = 0)

---

1 Huang et al., 1999.
3 Tzeng et al., 2004.
4 Levron et al.
5 Lanzendorf et al., 1999.

*Studies conducted in the U.S.*
**AUGMENT℠ Clinical Experience Shows Improved Pregnancy Rates Compared to Baseline**

### Dr. Robert Casper Presentation at COGI Congress, May 2015

- **# of patients:** 34
- **Average current age range:** 36 (Range: 26-44)

<table>
<thead>
<tr>
<th></th>
<th>Previous IVF History</th>
<th>AUGMENT℠</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cycles initiated</td>
<td>71</td>
<td>34</td>
</tr>
<tr>
<td>Average cycles initiated per patient</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total embryo transfers (fresh &amp; frozen)</td>
<td>79</td>
<td>26</td>
</tr>
<tr>
<td>Clinical pregnancies</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td><strong>Clinical pregnancy rate per cycle initiated</strong></td>
<td>11%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Clinical pregnancy rate per embryo transfer</strong></td>
<td>10%</td>
<td>46%</td>
</tr>
<tr>
<td>Ongoing clinical pregnancies and live births (rate per cycle initiated)</td>
<td>No ongoing and 1 live birth (1%)</td>
<td>9 including 1 live birth (26%)</td>
</tr>
</tbody>
</table>

**9 Patients Have 23 Total Frozen Embryos Remaining for Transfer**

Presentation includes real-world patient experience from physician’s clinic
The AUGMENT treatment is not available in the United States
# Additional AUGMENT<sup>SM</sup> Clinical Experience

## Dr. Kutluk Oktay Presentation at SRI Meeting, March 2015

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># of patients</td>
<td>8</td>
</tr>
<tr>
<td>Patient age range</td>
<td>27-41</td>
</tr>
<tr>
<td># of prior failed IVF cycles</td>
<td>3-7 per patient</td>
</tr>
<tr>
<td>Clinical pregnancies/embryo transfers</td>
<td>2/8* = 25%</td>
</tr>
</tbody>
</table>

## Physician Stated ≤ 10% Chance of Pregnancy without AUGMENT

Presentation includes real-world patient experience from the physician’s clinic
*1 clinical pregnancy ongoing
The AUGMENT treatment is not available in the United States
Foundation for Global Operations Expansion Established

**Reliability**
- Systems control
- Compliance
- Standardization across regions
- Reproducible
- Standard operating procedures

**Flexibility**
- Design fits clinic needs
- Process development

**Scalability**
- Small footprint
- Modular
- Modest capital investment
- Fits commercial strategy to support all fertility treatments

**QUALITY**
OvaPrime℠ Treatment
OvaPrime$^\text{SM}$ Treatment Process

### Standard IVF Cycle

- **Suitability**
  - Blood tests, age, past medical history

- **Ovarian Hyperstimulation**
  - Hormone injections

- **Egg Retrieval**

- **Egg Fertilization by ICSI**

- **Embryo Culture and Transfer**

### OvaPrime Process

- Ovarian tissue biopsy processed
- EggPC cells identified and isolated

ICSI = Intracytoplasmic Sperm Injection
OvaPrime<sup>SM</sup> Treatment: Designed to Increase Egg Reserve

**Treatment Profile**

- Potential to improve egg health in women with too few or no eggs
  - Initial target of 25-30% of all IVF patients

**Recent Accomplishments & 2015 Plans**

- Preclinical proof-of-concept established in vivo
- Planning introduction in at least one international region by end of 2015

**Major Publications**

- 2009
  - Zou et al.
- 2011
  - Zhang et al.
- 2012
  - White et al.
- 2014
  - Zhou et al.

---

*Includes: Diminished Ovarian Reserve (DOR) of 15-17%; Polycystic Ovarian Syndrome (PCOS) up to 10%; Premature Ovarian Failure/Insufficiency (POF/POI) of 1-3%<sup>1,2,3</sup>

1. SART; ESHRE; ICMART; Country Registries; Latin America Registry; Israeli Ministry
3. In 1986, Carolyn Coulam, M.D. (et al) published an article called *Incidence of POF*
OvaPrime℠ Target Market is Significant

- **Initial Target Market**
  - Patients with few or no eggs: 2M
  - Patients undergoing treatment: 8M
  - Patients seeking treatment: 40M
  - Infertile women: 72M

**Worldwide Patients**

- Women who produce few eggs frequently do not pursue IVF or do not continue due to low IVF success rates
- These patients may consider donor egg or other alternatives
- OvaPrime can immediately help by increasing the egg reserve, and hence the response to stimulation

Sources: Human Reprod., CDC Report #73, ESHRE 2012, SART
OvaPrime℠ Treatment Non-Human Primate (NHP) Feasibility

Stained section of NHP ovary

- Isolated EggPC cells using proprietary monoclonal antibody
- Optimized EggPC cell delivery into ovaries of autologous NHPs
- Resulted in normal physiology following EggPC cell administration
  - Gross pathology and histology normal at 3 months
- Same approach planned to introduce the OvaPrime treatment in patients by end of 2015

N = 18 NHPs
In Ovary Maturation of Egg Precursor Cells to Mature Eggs in Non-Human Primates (NHPs)

Experiment:
- EggPC cells isolated from ovary
- EggPC cells labeled with GFP and injected into NHP ovary to mature *in vivo*
- Eggs and tissue harvested after hormone stimulation
- Resulted in mature, fertilizable egg

Sources: NIH
OvaTure™ Treatment
OvaTure℠ Treatment Process

**Standard IVF Cycle**

- **Suitability**
  - Blood tests, age, past medical history

- **Ovarian Hyperstimulation**
  - Hormone injections

- **Egg Retrieval**

- **Egg Fertilization by ICSI**

- **Embryo Culture and Transfer**

**OvaTure Process**

- Ovarian tissue biopsy processed
- EggPC cells identified and isolated
- EggPC cells matured *in vitro*

ICSI = Intracytoplasmic Sperm Injection
High Throughput Platform To Accelerate OvaTure℠ Treatment

Development Platform

1. Identify and isolate EggPC cells
2. Evaluate using proprietary autologous in vitro system
3. Apply bioinformatics to assess maturation media
Note: Every follicle observed showed the same progression
N =45
Human EggPC℠ Cell Matured to GV Egg *In Vitro*

- Size and morphology consistent with GV egg (preantral follicle)
- Initial analysis on day 6 showed follicles present in 100% of wells examined (N>400 follicles)
- Additional analysis ongoing
Bovine EggPC<sup>SM</sup> Cell Matured to GV Egg <i>In Vitro</i>

- Initial analysis on day 6 showed follicles present in 100% of wells examined (N>300 follicles)
- Additional analysis ongoing of different conditions and time points

Size and morphology consistent with GV egg (preantral follicle)
### Leadership Team

#### Senior Management Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michelle Dipp, M.D., Ph.D.</td>
<td><strong>CEO, Co-Founder</strong></td>
<td>SVP, Head CEEDD, GSK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VP, Corporate Development, Sirtris</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.D., Ph.D., Oxford University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BIO Board of Directors and MassBio Advisory Board</td>
</tr>
<tr>
<td>Arthur Tzianabos, Ph.D.</td>
<td><strong>President</strong></td>
<td>SVP, Research and Non-clinical Development, Shire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faculty, Harvard Medical School</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ph.D., University of New Hampshire</td>
</tr>
<tr>
<td>David Harding</td>
<td><strong>Chief Commercial Officer</strong></td>
<td>Group SVP and GM of Women’s Health, Hologic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cytyc Corporation, McKinsey &amp; Company</td>
</tr>
<tr>
<td>Theresa McNeely</td>
<td><strong>EVP, Chief Communications Officer</strong></td>
<td>VP, Corporate Communications, Clinical Data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Millennium Pharmaceuticals, EXACT Sciences, Pyrosequencing, Allen &amp; Company</td>
</tr>
<tr>
<td>Ravi Mehrotra, Ph.D.</td>
<td><strong>Chief Corporate Development Officer</strong></td>
<td>Global Head of Biotechnology Equity Research, Credit Suisse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SG Cowen, Deutsche Bank (Natwest Markets/BT Alex Brown)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ph.D., Manchester University</td>
</tr>
<tr>
<td>Jeffrey Young</td>
<td><strong>Chief Financial Officer</strong></td>
<td>CFO and Treasurer, Transmedics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lantheus Medical Imaging, Critical Therapeutics, PerkinElmer, PricewaterhouseCoopers</td>
</tr>
</tbody>
</table>

#### Board of Directors

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Aldrich</td>
<td><strong>Chairman/Co-Founder</strong></td>
<td>Longwood Fund, Biogen, Vertex, Sirtris, Alnara, Verastem, RA Capital</td>
</tr>
<tr>
<td>Jeffrey Capello</td>
<td></td>
<td>EVP and CFO of Ortho-Clinical Diagnostics</td>
</tr>
<tr>
<td>Michelle Dipp, M.D., Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary Fisher</td>
<td></td>
<td>President/CEO Colorescience; Skinmedica (sold to Allergan); Acorda, Cephalon, Immunex</td>
</tr>
<tr>
<td>Marc Kozin</td>
<td></td>
<td>Former President North America, L.E.K. Consulting</td>
</tr>
<tr>
<td>Thomas Malley</td>
<td></td>
<td>Founder, Mossrock Capital; Founder, Janus Global Life Sciences Fund</td>
</tr>
<tr>
<td>John Sexton, Ph.D.</td>
<td></td>
<td>President, New York University</td>
</tr>
<tr>
<td>Harald Stock, Ph.D.</td>
<td></td>
<td>President and CEO, ArjoHuntleigh; EVP, Getinge Group, Former CEO Grünenthal Group; DePuy (J&amp;J); Roche</td>
</tr>
</tbody>
</table>
OvaScience Patent Portfolio

EggPC Cells

- Core Composition of Matter patent into 2025
- Method patent for manufacturing into 2025

Additional Patents and Filings

AUGMENT Treatment
2 patents extending protection into 2032

OvaPrime Treatment

OvaTure Treatment

Gene Correction

Leveraging IP

- OvaXon JV
- Yale collaboration in endometriosis
- Bioenergetic culture media

Cell

Declining NAD⁺ Induces a Pseudohypoxic State Disrupting Nuclear-Mitochondrial Communication during Aging
<table>
<thead>
<tr>
<th></th>
<th>Mar 31, 2015 ($ Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Loss Q1</td>
<td>$17.2</td>
</tr>
<tr>
<td>Cash Burn Q1</td>
<td>$15.2</td>
</tr>
<tr>
<td>Cash, Cash Equivalents, Investments</td>
<td>$169.3</td>
</tr>
<tr>
<td>Debt</td>
<td>$0</td>
</tr>
</tbody>
</table>