

**CURRICULUM VITAE  
FOR  
MAX WIJNBERG, M.S.**

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**1984 to Present:** Embryologist and Andrologist

**EDUCATION**

**1977 - 1984** University of Amsterdam (The Netherlands)  
Master of Science Degree In Biochemistry

Course of Study: Zoology, Physiology of animals, Physiology of plants, Biochemistry, Organic chemistry, Analytical chemistry, Physical chemistry, Physics.

***Major In Biochemistry (14 months):***

The object of study was to show external renal hydroxylation of 25-hydroxycholecalciferole to the biochemical active hormone, vitamin D3. For this purpose experiments in vitro were done with isolated bone tissue, to see if 1-hydroxy-cholecalciferol was hydroxylated to 1,25-dihydroxy-chole-calciferol or other products and how this process could be regulated.

Techniques used: organ dissection (rats), high-pressure liquid chromatography and working with radioactivity.

***Molecular Biology Research Project (7 months):***

The objective of this research was to localize the gene, in *Trypanosoma brucei*, that codes for ribosomal RNA. The cloned gene, with the aid of some restriction enzymes, was mapped. Thereafter the gene was hybridized with parts of the cloned gene and known DNA and compared with the DNA from the organism. From comparison of the hybridized DNA it was possible to identify a number of genes that the organism used for the synthesis of ribosomal- RNA.

Techniques used: working with restriction enzymes, isolation of DNA and RNA, blotting, hybridizing, labeling of DNA and RNA, photography using ordinary film and X-ray film.

***Organic Chemistry Research Project (8 months):***

The object of this research was the synthesis of yohimbane. For the synthesis of this material, use was made of a tetrahydrofolate model, which just as the same named co-enzyme can transmit carbon fragments.

Techniques used: Chromatography (liquid-solid), Infrared spectroscopy, Nuclear Magnetic Resonance spectroscopy (NMR), and Mass spectroscopy.

***Microbiology Research Project (8 months):***

The object of this research was to obtain more insight in the action of the enzyme N-acetylmuramine-acid-L-alanine-amidase in *Bacillus subtilis*. The enzyme is capable of breaking down the cell wall (necessary during growth). In some of the in vitro experiments a check was made of what influence on the enzyme activities were had by: different growth circumstances of the organism, lipoteichoic acid (an enzyme involved in vivo in the process of growth) and diverse detergents.

Techniques used: working in a sterile atmosphere, cultivation of bacteria in batch and chemostate cultures, isolation of substrate and enzyme from bacteria.

***Master of Science Thesis: Vitamin D and Tumors.***

This study gives an overview of different types of tumor cells which produce Vitamin D<sub>3</sub>, or differentiate under the influence of same.

**PROFESSIONAL CARREER**

**2006**

Embryologist and Andrologist  
Phoenix, Arizona  
Southwest Fertility Center.

Pregnancy rates of the Assisted Reproductive Technology Program for this office remain competitive locally, while rating substantially above the national average.

Professional services for sperm analysis, eggs and embryos, and hormone testing are performed.

***For sperm:*** sperm analysis/sperm survival as well as MAR, IBT, and sperm-cervical mucus penetration test, and cryopreservation.

***For eggs and embryos:*** oocyte collection and culture of embryos, cryopreservation of human zygotes and embryos, Intra Cytoplasmic Sperm Injection (ICSI) and Embryo Hatching.

***Immunochemistry testing:*** Estradiol, progesterone, follicle stimulating hormone, luteinizing hormone, thyroid and infectious disease testing.

***Hematology testing:*** Erythrocyte Sedimentation Rate, Complete Blood Count.

***Biochemical-immunology-serology testing:***

Human Immunovirus I and II, Rubella, Syphilis,

***Microbiology testing:*** Chlamydia and Neisseria Gonorrhoeae.

1991

Embryologist and Andrologist  
Flint, Michigan

Small IVF-laboratory. Although the practice is small, the results are competitive in relation to the larger clinics.

***Techniques used:*** sperm analysis and sperm tests like MAR, IBT, sperm-cervical mucus penetration test, oocyte collection and culturing embryos, freezing human zygotes and embryos.

1985-1991

Embryologist/Andrologist  
Regional Hospital, The Netherlands

Regional Hospital's mission was to develop a full service In-Vitro Fertilization Laboratory from the ground floor up.

During the first four years, hormone stimulation was performed in addition to embryology and andrology. First with CC/hMG/hCG, and thereafter with LHRH-analogs/hMG/hCG.

Also during this developmental stage of the new IVF Center at Regional Hospital, the use of luteal support with hCG and/or progesterone was begun, as well as ovulation induction.

The IVF Center, per year, produced 300 IUI procedures and 350 IVF cycles (100 transport IVF). Statistics of personal coordination of procedures is 1200 cycles for IUI and 860 cycles for IVF. Out of the 860 cycles, 337 pregnancies resulted. Interestingly, 4800 oocytes were collected and inseminated with the culturing of more than 1840 embryos.

By 1991, this fully functional IVF center employed six reproductive health professionals. A "complete" package for the treatment of infertility was offered. Due to the percent of

pregnancies that resulted from these programs, the IVF Center acquired national acclaim.

***Research study of cryopreservation/vitrification:(12 months)***

Since the publication of Rall et.al. in 1987 regarding vitrification of embryos (with a high carcinogenic cryoprotectant) no real progress has been made in this area. Although the ultimate solution for vitrification has not been discovered, the solution to one of the larger problems has been solved in this research, e.g., a new and nontoxic cryoprotectant for vitrification.

In a study involving mouse embryos, it is now shown as possible to vitrify zygotes (human 3 pronuclei) and 4 and 8 cell mouse embryos without "reducing" their viability. About 40% of the frozen mouse embryos in this study hatched which is an unprecedented achievement.

Techniques used: retrieving oocytes and embryos from the fallopian tube (in mice), fertilizing mouse oocytes in vitro, culturing mouse embryos, freezing and vitrifying of mouse embryos.

1985

**Osteoclast Research:(6 months).**  
The Netherlands

The object of this research was to acquire more insight into the cause of osteoclasts (bone reabsorbing cells) and the influence of vitamin D on the development of these cells. On the one hand, in vitro, a study was made of the influence of the hormone on the development of bone marrow cells (these cells can differentiate into osteoclasts). On the other hand, in vitro, the influence of vitamin D on the development of osteoclast growth and activity was studied, such as those seen in mice embryos.

Techniques used: dissection of embryonic tissue, cultivation of macrophages and bones, measurement of calcium (radio active) absorption and issue of cultivated bones, fixing, tissue sectioning with a microtome and staining these sections for histological use.

## **CONTINUING EDUCATION:**

- 2006                    39th Annual American Society for Reproductive Medicine  
Moving Toward Single-Embryo Transfer: Minimizing Risks and  
Maximizing Outcomes.  
New Orleans, Louisiana
- 2005                    Serono Symposia International online CME for Reproductive  
Health Medicine  
Phoenix, Arizona
- 2004                    37th Annual American Society for Reproductive Medicine  
Fertility Preservation; Present and Future  
Philadelphia, Pennsylvania
- 2003                    ASRM  
IVF Laboratory Protocols  
San Antonio, Texas
- 2002                    35th Annual American Society for Reproductive Medicine  
New Discoveries In Early Embryo Development  
Seattle, Washington
- 2000                    33rd Annual American Society for Reproductive Medicine  
ART In the New Millennium: Challenges and Controversies In  
Science and Practice  
San Diego, California
- 1998                    31st Annual American Society for Reproductive Medicine  
Maximizing the potential of every Embryo to Minimize Multiple  
Embryo transfer  
San Francisco, California
- 1997                    30th Annual American Society for Reproductive Medicine  
Current Techniques and New Frontiers In Cyopreservation and  
Micromanipulation  
Cincinnati, Ohio
- 1997                    From Genotype to Phenotype: Fertility across the Reproductive  
Lifecycle  
Phoenix, Arizona

- 1995 28th Annual American Society for Reproductive Medicine  
State of the Art  
Seattle, Washington
- 1995 Tufts University School of Medicine  
Micromanipulation Workshop  
Boston, Massachusetts
- 1994 27th Annual American Fertility Society  
Advances In Assisted Reproductive Technology  
San Antonio, Texas
- 1993 26th Annual American Fertility Society  
Controversies In Reproductive Biology and Technology  
Montreal, Canada
- 1991 24th Annual American Fertility Society  
Assisted Reproductive Technologies - An Advanced Course  
Orlando, FLorida
- 1984-1990 Various Workshops and Symposia  
The Netherlands