Professional Master's Degree

Assisted Reproduction

tech global university

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Professional Master's Degree
Assisted Reproduction

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/professional-master-degree/master-assisted-reproduction

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01

Introduction

Reproductive problems have become one of the most frequent situations in current society. It is a situation that has made assisted reproduction one of the fastest-growing medical specialities in recent decades. This demand is especially high in developed countries, where it is common to wait until later in life to have children. This has created a progressive increase in the average age for pregnancy and along with it, a list of complications. Rapid advances and the need for constant updating of information in all these aspects require professionals to make an intense effort to remain at the forefront of the field. This program provides you with all the necessary knowledge to be part of the medical pioneers in this area of intervention.

A high-level educational program created to improve the training of professionals in the field of Assisted Reproduction, including medical, laboratory and complementary areas"

Reproductive Medicine is a specialty that has been advancing by leaps and bounds in recent years thanks, fundamentally, to the improvement in laboratory techniques and the development of new genetic diagnostic techniques, which, on many occasions, can lead to the failure of previous reproductive treatments, offering new alternatives.

Physicians in this field should stay up to date on the area of diagnosis and treatment, but should also deepen their knowledge of the work that takes place in the laboratory. This helps to be able to transmit the necessary information to patients, especially if treatments aren't successful. Likewise, within the laboratory, there must be an understanding of the work of the practice, the types of stimulation and the different factors that can affect the outcome of the treatments. The teamwork of the Human Reproduction Unit is what will allow for more personalized treatments.

The objective of this Professional Master's Degree is to give a global vision to all professionals that allows them to keep up to date in the work of the entire Assisted Reproduction Unit.

With a duration of 12 months, this program is composed of 10 modules and more than 50 units, where important aspects will be addressed such as the advances in the study of the female factor, especially at the level of the endometrial factor, in-depth study of the male factor, applications of genetic techniques in improving results, improvements in the laboratory through time-lapse systems, culture media and quality control systems. All this has been designed by a team of leading specialists in Reproductive Medicine in each one of the aspects dealt with throughout the course.

This **Professional Master's Degree in Assisted Reproduction** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- The latest technology in online teaching software
- A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- Practical cases presented by practising experts
- State-of-the-art interactive video systems.
- Teaching supported by telepractice
- Continuous updating and recycling systems
- Autonomous learning: full compatibility with other occupations
- Practical exercises for self-evaluation and learning verification
- Support groups and educational synergies: questions to the expert, debate and knowledge forums.
- Communication with the teacher and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection
- Supplementary documentation databases are permanently available, even after the program

A unique specialization program that will enable you to acquire superior training for development in this field"

The teachers of this Professional Master's Degree have been selected based on two criteria: the excellence of their medical practice in the field of the creation, promotion and maintenance of the bariatric units, and their proven educational capacity: To offer you the high-quality program that you need"

Our teaching staff is composed of medical professionals, practising specialists. This way, we ensure that we deliver the educational refresher course we are aiming for. A multidisciplinary team of qualified and experienced professionals in different fields, who will develop the theoretical knowledge efficiently, but, above all, will provide the program with the practical knowledge derived from their own experience: one of the differential qualities of this Professional Master's Degree

This mastery of the subject is complemented by the effectiveness of the methodology used in the design of this course. Developed by a multidisciplinary team of *e-Learning* experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need for your training.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice learning: with the help of an innovative interactive video system, and *learning from an expert*, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

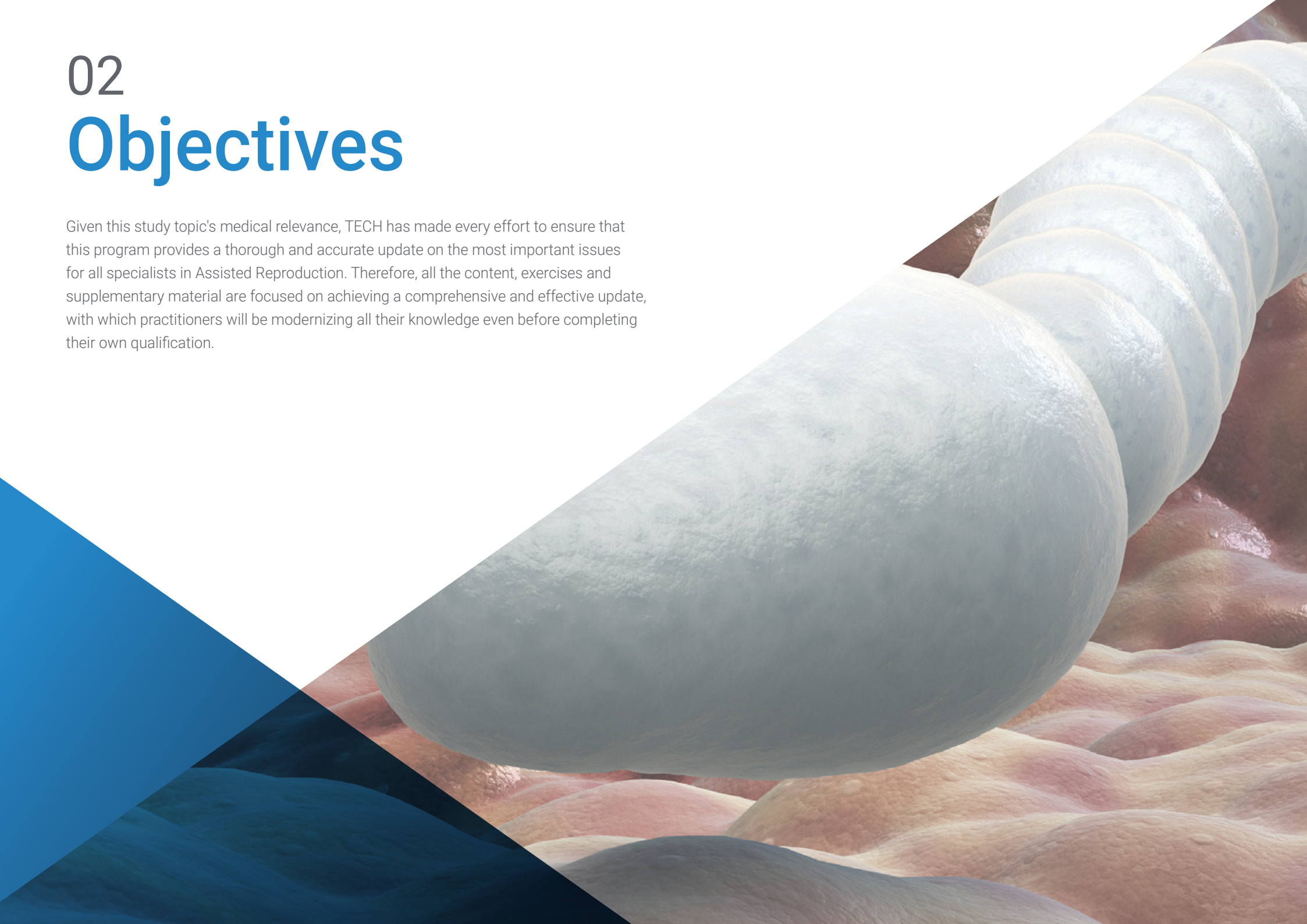
With a methodological design based on proven teaching techniques, this Professional Master's Degree will take you through different teaching approaches to allow you to learn in a dynamic and effective way.

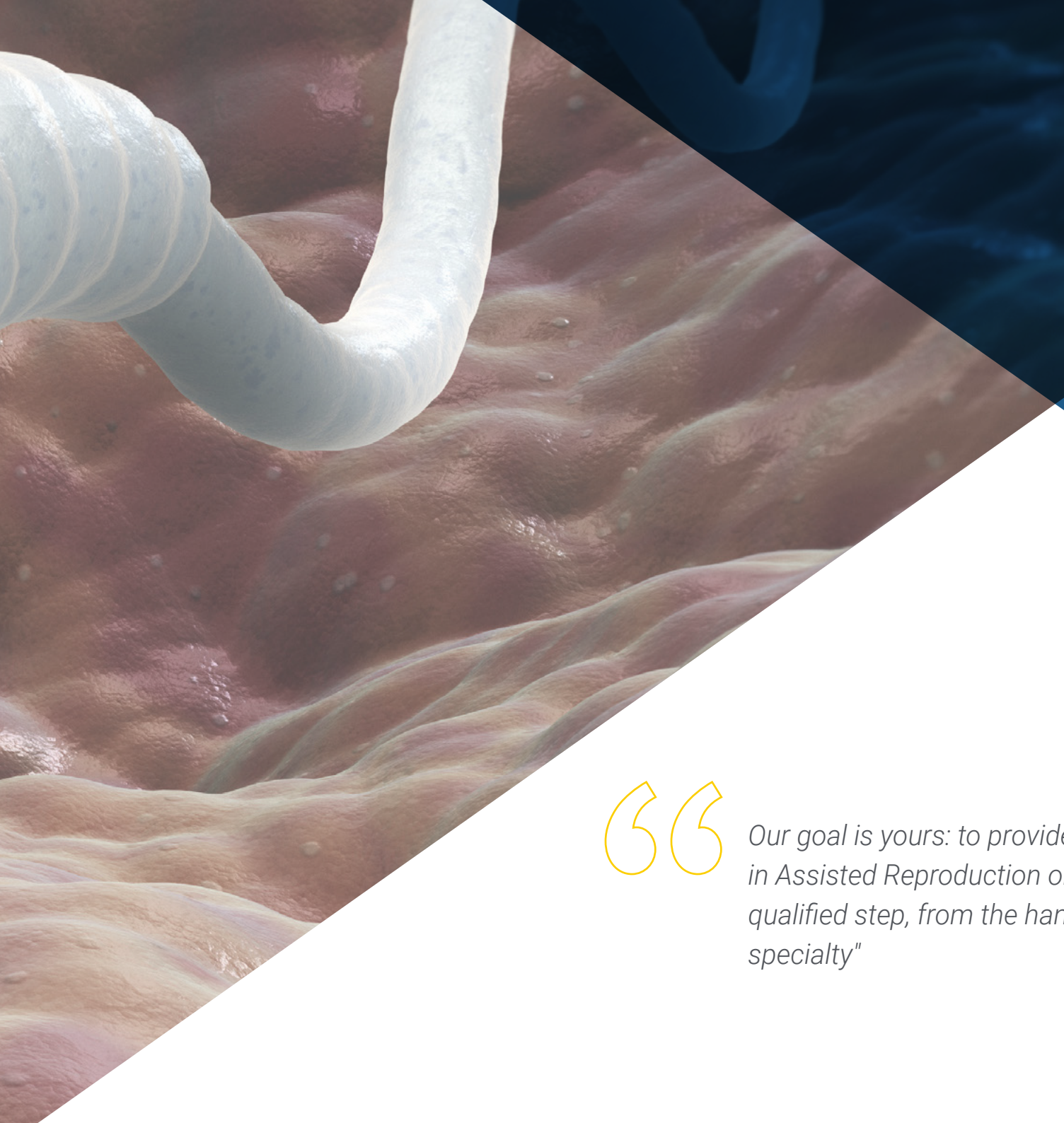
Identify new assisted reproduction techniques and apply them in your medical treatments, providing a higher success rate.

02

Objectives

Given this study topic's medical relevance, TECH has made every effort to ensure that this program provides a thorough and accurate update on the most important issues for all specialists in Assisted Reproduction. Therefore, all the content, exercises and supplementary material are focused on achieving a comprehensive and effective update, with which practitioners will be modernizing all their knowledge even before completing their own qualification.

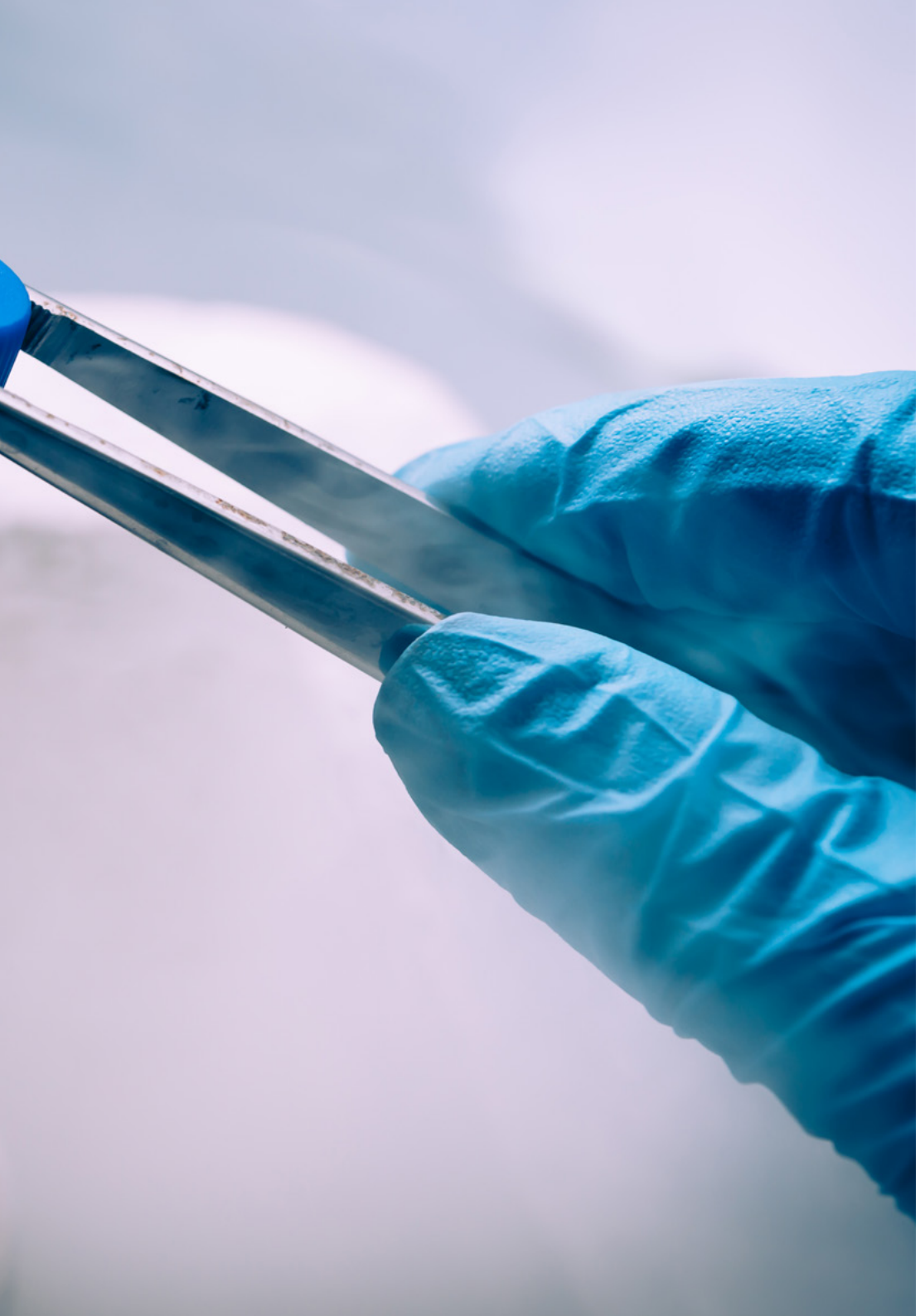




Our goal is yours: to provide you with the best online training in Assisted Reproduction on the educational market. A highly qualified step, from the hands of the best professionals in this specialty"

General Objectives

- Perform basic clinical examinations, and request and interpret complementary test results.
- Know the indications and surgical techniques that could improve the reproductive results of our patients. Uterine morphology disorders (congenital or acquired) Endometriosis Tubal surgery
- Know the techniques used in the Andrology, IVF and cryobiology laboratories. Diagnostic techniques and sperm selection techniques: Oocyte Evaluation. Embryonic Development
- Describe the types of genetic embryonic studies that are available, know their possible indications and be able to interpret the results.
- Know the main scientific and patient societies in the field of Reproductive Medicine



Specific Objectives

Module 1. Introduction. Anatomy. Physiology. Cellular Cycle

- Study the developments and advances throughout the history of Reproductive Medicine
- Examine the aspects related to female and male anatomy, in addition to those related to gametogenesis and oocyte fertilization by the spermatozoon
- Delve into the anatomy and embryology related to embryonic genesis and embryo implantation

Module 2. Gamete Interaction Fertilization Embryonic Development

- Differentiate the different reproductive techniques: ovulation stimulation, artificial insemination and In Vitro Fertilization with or without sperm microinjection
- Detail the indication of the different reproductive techniques
- Understand the possibility of using reproductive techniques with donor gametes
- Know the different adjuvant treatments that could be used in patients diagnosed with low ovarian reserve
- Manage the different types of ovulation induction according to the patient's profile
- Know the usual artificial insemination and vitro fertilization cycles

Module 3. Study of the Female Factor: Role of Surgery in Reproduction

- Study the possible relationship with tubal factor sterility and infertility
- Deepen in the histological, immunological and microbiological endometrial changes and in the current techniques for their evaluation
- Basic study of ovarian reserve
- Distinguish the factors that can affect female reproductive capacity at the level of decreased ovarian reserve
- Understand tubal patency assessment techniques

Module 4. Andrology Laboratory

- In-depth knowledge of the basic study at the male level
- Interpret normal values of a semen analysis
- Know the factors that may affect male reproductive capacity in terms of sperm quality, motility, morphology, aneuploidy or sperm DNA fragmentation
- Deepen the current specific studies for the male factor, as well as advanced techniques
- Develop the indications for testicular biopsy and its procedure

Module 5. Reproductive Treatments: Medication. Stimulation Protocols

- Manage the different drugs used in ovulation stimulation
- Know the different stimulation protocols according to the patient's characteristics
- Develop IVF/ICSI techniques (micromanipulation) from the beginning: SUZI, PZD, ROSI, ELSI, IMSI, PICSI, *assisted* hatching
- Explore culture media composition and requirements as a function of embryonic developmental stage
- Study embryo development and specific classification of embryo quality according to stages
- Delve into time-lapse technology and the different kinetic events affecting embryo division
- Study the automatic algorithms presented by each time-lapse technology and relate them to the reproductive results
- Develop additional lab techniques that allow possible improvement in embryo implantation (collapse, *hatching*)

Module 6. Micromanipulation Techniques

- Understand the need to establish general and specific quality indicators for each laboratory in order to maintain the best conditions in the laboratory
- Study the impact of fibroids on fertility
- Analyze the possible surgical indications in patients with fibroids and infertility
- Delve deeper into the impact of uterine malformations on fertility
- Analyze the possible surgical indications in patients with surgical malformations and infertility Metroplasties. Septoplasties
- Understand the role of tubal surgery in improving natural fertility
- Develop the surgical option of uterine transplantation, its indications and technique

Module 7. Gamete and Embryo Cryopreservation

- Study the "*freeze all*" indications
- Know and manage the possible complications derived from assisted reproduction treatments
- Analyze the medication used for the endometrial preparation of substituted embryo cryotransfer cycles
- Update the different luteal phase support protocols
- Develop gamete handling in the laboratory
- Know the embryo biopsy techniques according to the stage of embryo division
- Know the embryo biopsy techniques according to the technology used and the existing means in each laboratory
- Analyze the indications for fertility preservation in the male
- Study the techniques used in sperm cryopreservation and their efficiency
- Deepen the indications for fertility preservation in women
- Know the techniques used in oocyte cryopreservation and their efficiency
- Know the techniques used in ovarian tissue cryopreservation and their efficiency

Module 8. Fertility Preservation

- Study the European standards to establish the minimum criteria required in Reproduction

Units (ISO/UNE)

- Study in depth the definitions and indications for the study of the couple with repeated miscarriages or implantation failures
- Develop the level of evidence for each of the requested tests
- Gain knowledge the different treatment options
- Study the impact of endometriosis on fertility
- Analyze the possible surgical indications in patients with endometriosis and infertility
- Know the impact of adenomyosis on fertility
- Develop possible surgical indications in patients with adenomyosis and infertility
- Understand the impact of the hydrosalpinx on fertility and its surgical indication prior to In Vitro Fertilization

Module 9. Genetics in Reproduction

- Study the basic concepts of genetics
- Develop the basic concepts of reproductive genetics
- Analyze the concept of "epigenetics" and its influence on reproduction
- Know the different genetic diagnostic techniques, existing platforms and application of each of them according to the diagnostic objective
- Analyze the indications in reproductive medicine for diagnosis and screening of aneuploidy
- Interpret the results of genetic studies
- Understand the need for genetic counseling
- Knowledge of embryo biopsy techniques
- Study the results of the pre-implantation genetic diagnosis and *aneuploidy screening* program

Module 10. Legislation. Quality. Research and Future Techniques

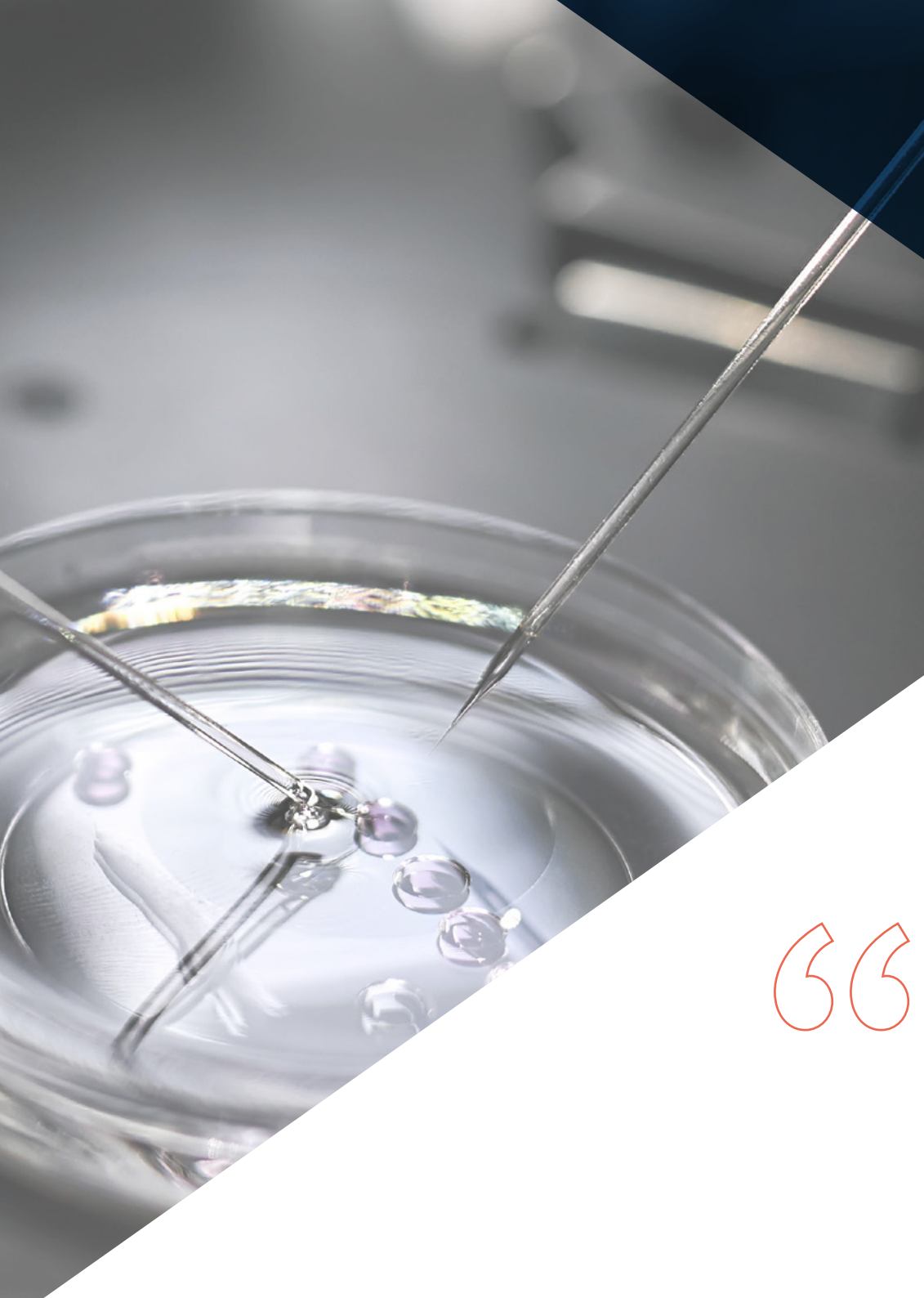
- Develop new techniques in genetic diagnosis (non-invasive tests, mitochondrial transfer) and their possible future applications

Reach your goals thanks to the best professionals in the field of Assisted Reproduction"

03

Skills

With an approach developed to propel medical professionals towards maximum expertise, this program will address the latest developments in the comprehensive study of the various infertility situations, both female and male factors. All this has been designed by a team of leading specialists in Reproductive Medicine in each one of the aspects dealt with throughout the course.



This highly effective Professional Master's Degree will allow you to acquire the necessary skills to address reproductive problems with the latest techniques in diagnosis and treatment"

General Skills

- Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
- Integrate knowledge and face the complexity of making judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
- Communicate its conclusions – and the ultimate knowledge and rationale behind them– to specialized and non-specialized audiences in a clear and unambiguous manner
- Acquire learning skills that will enable further self-directed and autonomous studying.

Specific Skills

- Acquire up-to-date concepts in anatomy, physiology, embryology and genetics, which will help to understand reproductive diagnostics and treatments.
- Know, in detail, all aspects related to the initial assessment of the infertile couple criteria for study and referral to reproduction units, basic clinical examination, request and interpretation of complementary test results
- Perform an adequate assessment and clinical orientation of the couple. Request for specific tests based on the above findings.
- Have an exhaustive knowledge of the different types of medical treatment, indications and their choice according to the profile of the patient and their partner

Get the competencies of a specialist with a high-level training process created to boost your progress and your professional practice"

04

Course Management

Within the concept of total quality of our program, we are proud to offer you a teaching staff of the highest level, chosen for their proven experience in the educational field. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

An impressive teaching staff, made up of professionals from different areas of expertise, will be your teachers during your studies: a unique opportunity not to be missed"

International Guest Director

Dr. Michael Grynberg is a prominent Obstetrician-Gynecologist whose research in Reproductive Endocrinology, Infertility and Andrology has achieved international impact. Likewise, this specialist has been a pioneer in fertility preservation in oncology patients. His avant-garde studies in this field have allowed people facing aggressive medical treatments to maintain options to preserve their reproductive capacity.

Thanks to his extensive knowledge in this scientific area, Dr. Grynberg participated in the foundation of the French Oncofertility Society and later became its elected president. At the same time, he directs the Department of Reproductive Medicine and Fertility Preservation at the Antoine-Béclère University Hospital Center. At the same time, he is a member of the Reproductive Endocrinology Group of the European Society of Human Reproduction and Embryology (ESHRE). In addition, he runs the National College of Obstetricians-Gynecologists (CNGOF) in his country.

He has also published 3 books and accumulated more than 350 scientific publications in journals and conference presentations. In them he has addressed topics ranging from in vitro oocyte maturation in case of ovarian resistance, to investigating the role of ZO-1 in the differentiation of human placental trophoblast cells. Another of his contributions has been the description of the Follicular Outflow Rate (FORT) as a means to evaluate the sensitivity of follicles to FSH hormone. He is also the author of a disruptive proposal based on intraovarian administration of AMH to prevent follicular loss and fertility impairment after cyclophosphamide administration.

In terms of competency development, Dr. Grynberg has sustained intensive academic updating. He completed his specialization at the Lariboisière Faculty in Paris and, in turn, has a training stay at the Center for Reproductive Medicine of the New York Presbyterian Hospital.

Dr. Grynberg, Michael

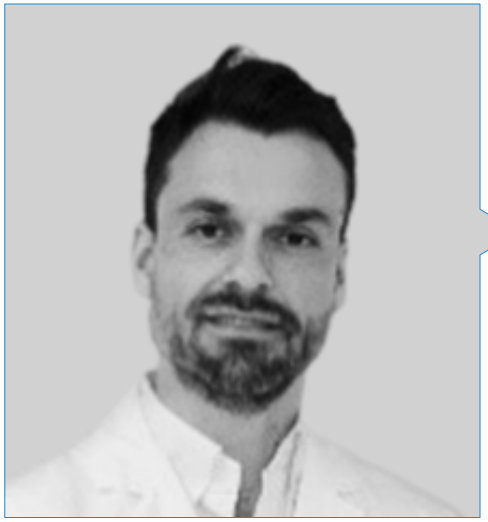
- Director of Reproductive Medicine at the Antoine-Béclère Hospital Center, Paris, France
- Head of the Department of Reproductive Medicine-Fertility Preservation at the Jean-Verdier de Bondy Hospital
- Director of the French National College of Obstetricians and Gynecologists
- President of the French Society of Oncofertility
- Doctor of Medicine at the Lariboisière Faculty in Paris
- Fellowship at the Center for Reproductive Medicine, New York Presbyterian Hospital
- Member of: European Society of Human Reproduction and Embryology (ESHRE)

Thanks to TECH you will be able to learn with the best professionals in the world"

Management

Dr. Iniesta Pérez, Silvia

- Coordinator the Reproduction Unit of Hospital Universitario
- Degree in Medicine and Surgery from the University of Alcalá, Madrid
- Specialist in Obstetrics and Gynecology, via MIR. Santa Cristina University Hospital, Madrid
- Doctorate Courses at the Autonomous University of Madrid
- Research Sufficiency in the Department of Obstetrics and Gynecology, Universidad Autónoma de Madrid, Qualification: Outstanding.
- Doctoral Thesis, Obstetrics and Gynecology Deparment, Autonomous University of Madrid Oustanding- Cum Laude
- Levels I, II, III and IV obstetric-gynecological ultrasound (SESEGO accreditation)
- Master's Degree in Human Reproduction IVI
- Master's Degree in Genomics and Medical Genetics 2nd edition, Granada University
- Online Master's Degree in Minimally Invasive Surgery in Gynecology. CEU Cardenal Herrera University
- Masterclass Patient-Centered Clinical Management. Deusto Business School, Madrid
- Area Specialist Doctor at the Santa Cristina University Hospital, Madrid
- Interim Labor Doctor, Hospital Infanta Sofía, Madrid
- Physician on Secondment at the Hospital Universitario La Paz



Dr. Franco Iriarte, Yosu

- Laboratory and scientific director, International Ruber Hospital
- Head of the Assisted Reproduction Laboratory of the Virgen del Pilar Health Centre in San Sebastián
- Head of the Assisted Reproduction Laboratory of Policlínica Guipúzcoa, including the laboratory of Clínica del Pilar
- Collaboration with the Assisted Reproduction Center, Navarro Medical Center
- Senior Embryologist at Cornell University Hospitals of New York and RMA of New Jersey
- Creation of the company Donostia Basque Institute of Fertility located in Onkologikoa. Managing Director.
- Managing Director of the Donostia Basque Institute of Fertility.
- Graduate in Biology, University of Navarra (Fundamental and Health Specialty)
- CAP Qualification (Certificate of Pedagogical Competency)
- PhD in Science from the University of Navarra. Thesis Title: "Genetic risk factors for venous thrombosis"
- University Specialist in Assisted Reproduction: Psychological and Legal Aspects from the Complutense University of Madrid.
- Discussion Table Moderator of the North Forum Reproduction Units on embryonic and oocyte morphological criteria and embryo freezing.
- University Diploma in Nursing. UPV-EHU "Donostia School of Nursing" Donostia- San Sebastián
- Master's Degree in "Genetic Counseling". San Pablo University CEU in Madrid

Professors

Ms. Sotos Borrás, Florencia

- Graduate in Biological Sciences. Specialist in Biochemistry and Molecular Biology. Autonomous University of Madrid
- Radioactive Facilities Supervisor Certification, Specialty in Biomedicine and Research. Infocitec
- IVF-Genetics-Andrology at Hospital Ruber Internacional.

Ms. Villa Milla, Amelia

- Senior Embryologist in the Assisted Human Reproduction Laboratory at Hospital Ruber Internacional, Madrid.
- Degree in Biological Sciences and Specialist in Biochemistry and Molecular Biology. Autonomous University of Madrid
- Biologist Specialist in Clinical Analysis in the Area of Genetics. Official Biologists College

Dr. Cuevas Saiz, Irene

- Accredited by the ASEBIR as a Specialist in Assisted Human Reproduction Clinical Embryology.
- Official Master's Degree in Biotechnology of Assisted Human Reproduction, University of Valencia
- Master's Degree in Human Reproduction
- Doctoral Candidate in Obstetrics, Gynecology and Regenerative Medicine, Research Plan Title: "Embryo selection by non-invasive techniques: combining morphology.

Ms. Fernández Díaz, María

- Director of Ergo Clinic and responsible for the Assisted Reproduction Department
- Degree in Biochemistry. Faculty of Medicine and Health Sciences,University of Oviedo.
- Degree in Chemistry. Faculty of Chemical Medicine, University of Oviedo
- PhD student in Molecular and Cellular Biology. University of Oviedo
- Official Master's Degree in Reproductive Biology and Technology University of Oviedo
- Master's Degree in Cancer Research University of Oviedo
- Postgraduate Degree in Medical Genetics. University of Valencia

Dr. Gayo Lana, Abel

- Co-Director of the ERGO Clinic. Embryology Laboratory Director
- Doctor in Biology (outstanding Cum Laudem), PhD Program in Biochemistry and Molecular Biology, Department of Functional Biology, University of Oviedo
- Master's Degree in Human Reproduction, Spanish Fertility Society (SEF) and Complutense University of Madrid
- Degree in Biology. Faculty of Biology Medicine, University of Oviedo
- Official Degree: Senior Embryologist of ESHRE
- ASEBIR Certification in Assisted Human Reproduction. Clinical Embryology

Dr. Carrillo de Albornoz Riaza, Elena

- Medical Director of the Reproduction Unit, Ruber International Hospital
- Gynecologist of the Gynecology and Obstetrics Service of Dr. Jiménez Ruiz's team at Ruber International Hospital
- Specialist in the Obstetrics and Gynecology Service, Del Aire University Hospital
- Honorary collaborator of the Department of Obstetrics and Gynecology, Faculty of Medicine, Complutense University of Madrid
- Degree in Medicine and Surgery from the Faculty of Medicine at the Complutense University of Madrid
- Specialist in Gynecology and Obstetrics issued by the Ministry of Education and Science
- Doctorate, Autonomous University of Madrid

Dr. Vegas Carrillo de Albornoz, Ana

- Medical Specialist in Obstetrics and Gynecology, Ruber International Hospital
- Assistant Physician in the Obstetrics and Gynecology Shift Team, Hospital Ruber International
- Medicine Graduate from the Faculty of Medicine of the Complutense University of Madrid.
- PhD in Medical and Surgical Sciences, Universidad Complutense de Madrid.
- Master's Degree in Human Reproduction, Complutense University of Madrid

Dr. Sole Inarejos, Miquel

- Senior Embryologist of the In Vitro Fertilization Laboratory and Head of the Cryobiology Department, Dexeus University Hospital
- Degree in Biology and Biochemistry
- Doctorate in Cell Biology, Autonomous University of Barcelona

Dr. Gay, Rosina

- Senior Embryologist in the Assisted Reproduction Laboratory, Ruber International Hospital
- Biologist in the Genetics and IVF Laboratory Clinic.
- Biologist in the Genetics, IVF and Clinical Analysis laboratories, Madrid Institute of Integral Gynecology
- Degree in Biological Sciences with a major in Biochemistry, Complutense University of Madrid

Dr. Messeguer, Marcos

- Scientific Supervisor at IVI Team
- Senior Embryologist at IVI Valencia
- Professor of Biotechnology, University of Valencia
- Degree in Biological Sciences, University of Valencia
- D. cum laude in Biological Sciences and European Doctorate
- Master's Degree in Research Methods; Design and Statistics, Autonomous University of Barcelona

Dr. Hurtado de Mendoza, María Victoria

- Head of Quality Control of the IVF Laboratory and Senior Clinical Embryologist at Caremujer SL
- Responsible for the design and start-up of the first IVF laboratory in Andalusia
- Senior Clinical Embryologist at MásVidaReproducción, in Seville, Spain
- Medical Specialist in the Cell Culture Genetics and Cytogenetic Analysis Unit, Puerta del Mar University Hospital, Cadiz
- Degree in Biological Sciences, University of Seville, Spain

- Doctorate from the Faculty of Biology, University of Seville

Dr. Alcaide Raya, Antonio

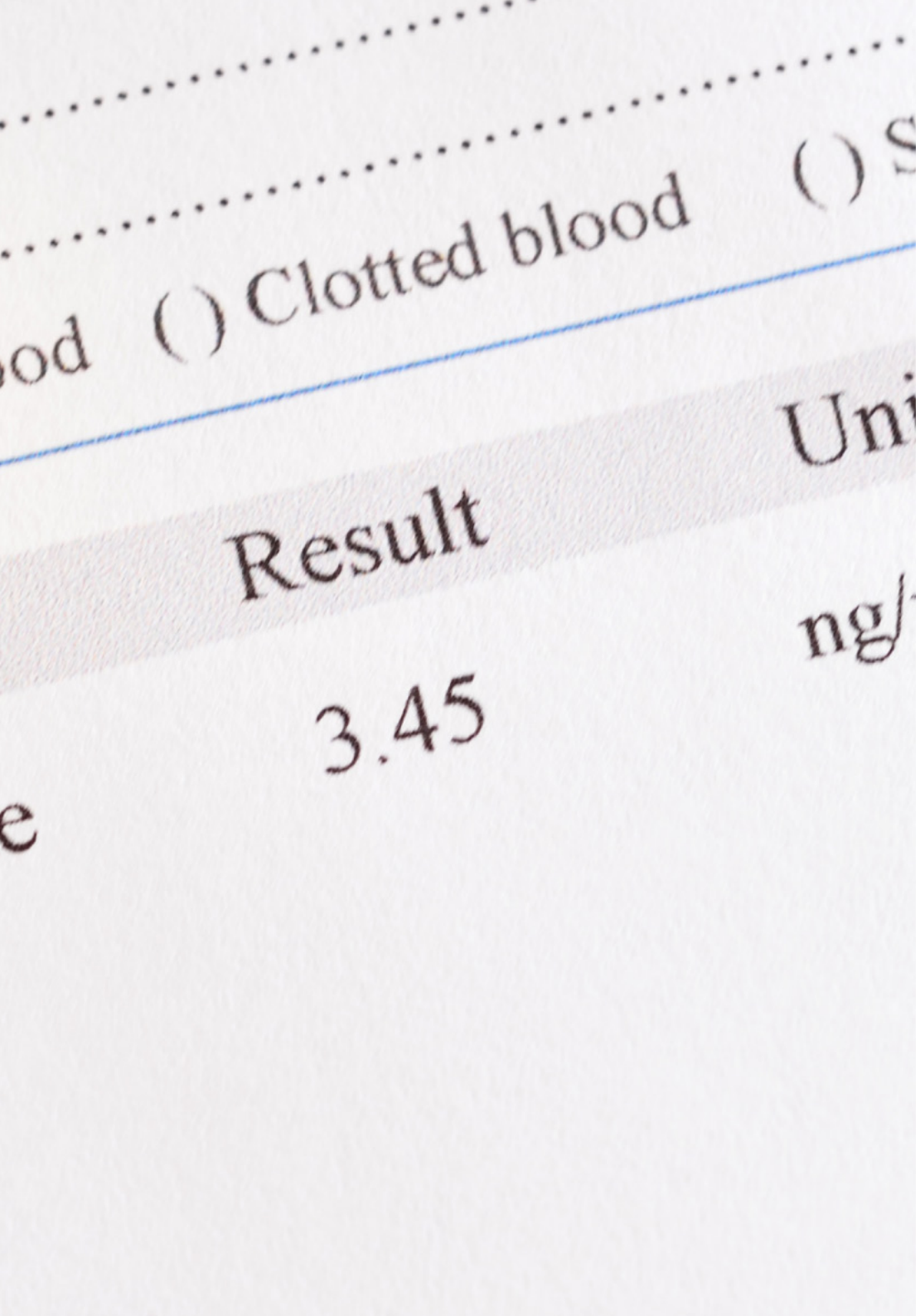
- CTO and co-founder of Assacell Biologist
- Partner, senior embryologist and cofounder of Reprofiv
- Senior Embryologist in charge of the Andrology and Embryology Laboratory at FIV Center Madrid
- Graduate in Biology, Complutense University of Madrid
- Specialist in Genetic Medicine, University of Alcalá de Henares, Madrid
- Master's Degree in Biological and Embryological Development, University of Valencia

Dr. Costa Borges, Nuno Luis

- Chief Scientific Officer and co-founder of Embryotools
- Clinical Embryologist, Valencian Institute of Infertility (IVI), Barcelona
- Assistant Professor, Autonomous University of Barcelona, Department of Cellular Biology
- Graduate in Biochemistry, University of Coimbra, Portugal
- Doctorate in Cell Biology, Autonomous University of Barcelona

Dr. Horcajadas, José A

- Founder of HoMu invest and Fullgenomics
- Scientific Director at Overture Life
- Consultant, scientific director and founder of SINAE Scientific Consulting in Seville, Spain
- Professor of Genetics, Pablo de Olavide University of Seville, Spain
- Research Professor, Eastern Virginia Medical School, Norfolk, Virginia



- Degree in Molecular Biology and Biochemistry, Autonomous University of Madrid
- D. in Biological Sciences, Autonomous University of Madrid

Dr. Eguizabal Argaiz, Cristina

- Head Researcher, Basque Transfusion and Human Tissue Center (CVTTH)
- Senior Researcher, Center for Regenerative Medicine, Barcelona, Spain
- Postdoctoral Research Fellow at The Gurdon Institute, University of Cambridge
- Degree in Biology, Fundamental Biology with a major in Microbiology, University of Navarra
- Doctorate in Cell Biology, University of the Basque Country

Dr. Vendrell Montón, F. Xavier

- Head of the Reproductive Genetics Unit of Sistemas Genómicos SL
- Responsible for reproductive genetic counseling and preconception at the Valencian Institute of Genetics
- Staff Biologist, Balearic Infertility Institute in Palma de Mallorca
- Degree in Biological Sciences, University of Valencia
- Ph.D. in Biological Sciences with Cum Laude distinction, University of Valencia.

Mr. Bescós Villa, Gonzalo

- Biologist at the Universidad Autónoma De Madrid
- Master's Degree in Genetics and Cell Biology , Interuniversity: Complutense University of Madrid, Autonomous University of Madrid and University of Alcalá de Henares
- Final thesis in luisa maria botella's group, Center for Biological Research of the Higher Council for Scientific Research.

- Internship in Maria Blasco's group, National Oncology Research Center, Spain.
- Extracurricular internship in the genetics department of the Ruber International Hospital

Dr. Sáez de la Mata, David

- Assistant physician of the Assisted Reproduction Unit of the Infanta Sofía University Hospital of the Community of Madrid
- Physician of the Assisted Reproduction Unit of Ginemed Madrid Center
- Degree in Medicine from the University of Alcalá de Henares
- Master in Contraception and Sexual and Reproductive Health
- Master's Degree in Human Reproduction IVI
- Expert in Gynecological Exploration and Mammary and Vulvar Pathology
- Expert in Uterine Pathology, Menopause and Reproduction
- Expert in Obstetric Diagnosis and Pathology and Expert in Childbirth, Puerperium and Lactation by the Institute of Continuing Education of the University of Barcelona

Dr. Fernández Pascual, Esaú

- Member of the Spanish Association of Urology
- Andrology and Sexual Medicine at the La Paz University Hospital
- Degree in Medicine from the Autonomous University Madrid.
- Co-Editor-in-Chief of the International Journal of Andrology

Ms. Carmen Cañadas, María

- Biologist in the IVF laboratory and coordinating the genetic counselling department at Ginefiv
- Lecturer in the area of genetics and assisted reproduction

Dr. Escribá Pérez, María José

- Clinical Embryologist at IVIRMA-Valencia's In Vitro Fertilization Laboratory
- PhD in Biology from the Polytechnic University of Valencia
- Researcher in the area of reproductive biotechnologies

Dr. Duarte Perez, Manuel

- Specialist in the Reproduction Section and in the Obstetrics and Gynecology Service of the La Paz University Hospital
- Master's Degrees in Human Reproduction (IVI-University of Valencia/ADEIT) and in Gynecological Endoscopic Surgery by IVI-University of Valencia/ADEIT
- Master's Degree in Human Reproduction by IVI-University of Valencia/ADEIT

Dr. Armijo, Onica

- Assistant Specialist in Gynecology and Obstetrics at La Paz Hospital Human Reproduction Unit
- Professor of the Faculty of Medicine of the UAM

Dr. García, Myriam

- Attending Physician at La Paz University Hospital
- Graduate in Medicine and Surgery from the University of Seville
- Felowship Gynecologic Oncology accredited by ESGO
- Internal Medical Specialist at the Virgen del Rocío University Hospital in Seville

Dr. Fernández Prada, Sara

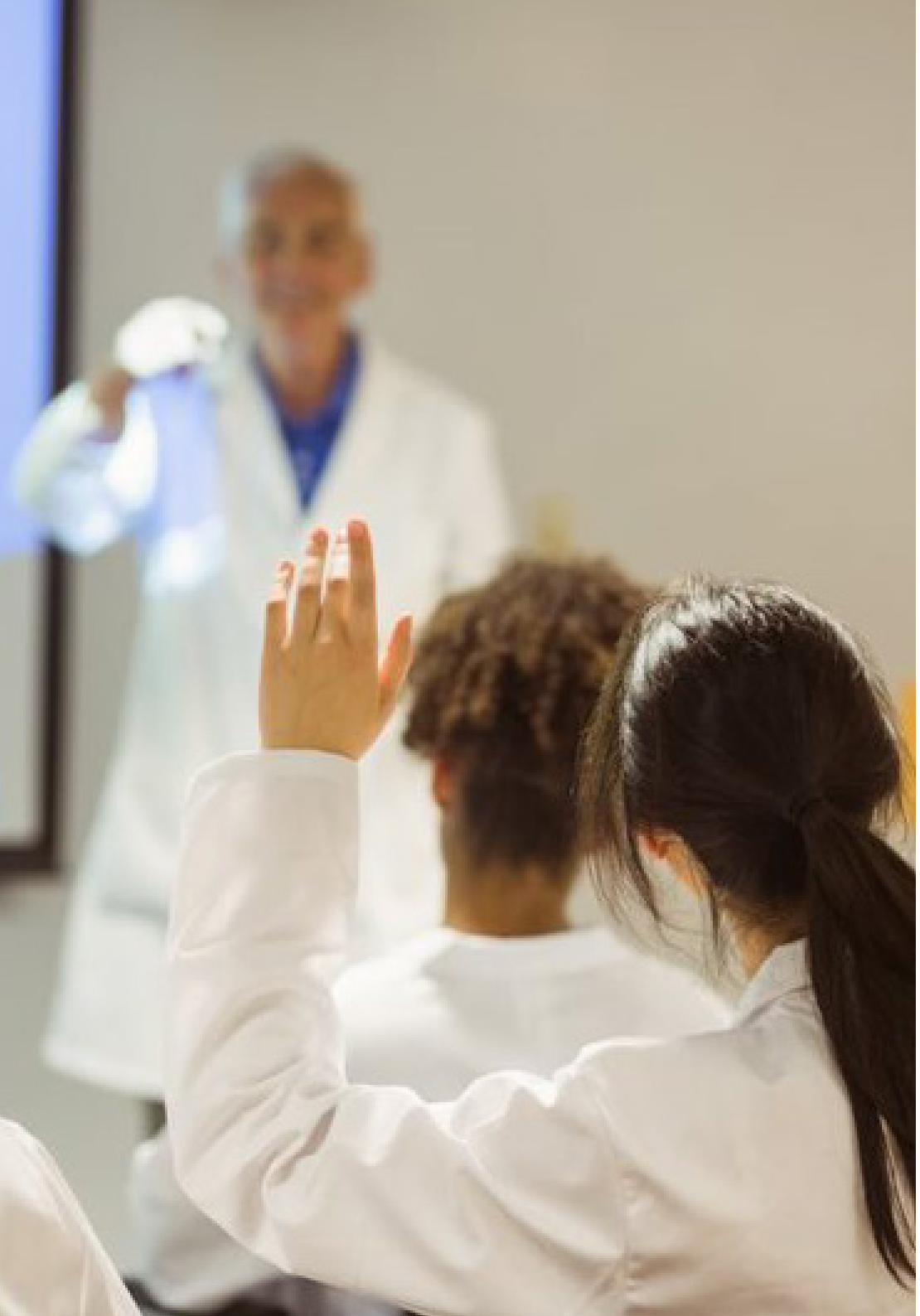
- Human Reproduction Section, La Paz University Hospital, Madrid, Spain
- Doctor specialized in Obstetrics and Gynecology
- Master's Degree in Assisted Reproduction from Rey Juan Carlos University

Dr. Sánchez Hernández, María José

- Specialist in Obstetrics and Gynecology at the Reproduction Unit of Hospital Universitario La Paz, Madrid

Dr. Silva Zaragüeta, Patricia

- Specialist in Obstetrics and Gynecology at La Paz University Hospital
- PhD in Medicine and Surgery from the Autonomous University of Madrid
- Dedicated to reproductive medicine since 2012 at Hospital Universitario La Paz.



Dr. Álvarez Álvarez, Pilar

- Gynecology and Obstetrics Area Specialist at Infanta Sofia University Hospital
- PhD in Gynecology and Obstetrics from the Autonomous University of Madrid
- Professor of Health Sciences at the European University of Madrid
- Master's Degree in Human Reproduction from Rey Juan Carlos University

Dr. Cabezuelo Sánchez, Vega María

- Gynecologist and Obstetrician Expert in Assisted Reproduction
- Gynecologist and Obstetrician at the Ruber International Hospital
- Researcher in Human Reproduction at the Ruber Internacional Hospital
- Collaborator in several publications and scientific communications
- Member: Spanish Fertility Society (SEF), Spanish Society of Gynecology and Obstetrics (SEGO)

Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

05

Structure and Content

The contents of this Professional Master's Degree have been developed by the different experts of this program, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. Knowledge that will enable the student to respond in an efficient way to each and every one of the needs in this area of medicine.

A comprehensive teaching program, structured in well-developed teaching units, oriented towards learning that is compatible with your personal and professional life"

Module 1. Introduction. Anatomy. Physiology. Cellular Cycle

1.1. Introduction. Concepts. Assisted Reproduction. Epidemiology. Reproductive Problems
  1.1.1. Concepts of Reproductive Medicine
  1.1.2. Epidemiology
1.2. Female Anatomy and Physiology
  1.2.1. Ovogenesis
  1.2.2. Ovarian Cycle: Follicular Recruitment Waves
1.3. Male Anatomy and Physiology
  1.3.1. Spermatogenesis
1.4. Gametogenesis Meiotic Cycle
1.5. Ovogenesis: Ovogenesis-Foliculogenesis Relationship
1.6. Oocyte Quality Markers
1.7. Factors Affecting Oocyte Quality
1.8. Spermatogenesis and Sperm Production
1.9. Semen Quality Markers
1.10. Factors Affecting Seminal Quality

Module 2. Gamete Interaction Fertilization Embryonic Development

2.1. Interaction of Gametes in the Female Tract
2.2. Acrosomal Reaction and Hyperactivation
2.3. Sperm-Oocyte Interaction
2.4. Sperm-Oocyte Fusion: Oocyte Activation
2.5. Embryonic Development
2.6. Main Features in Pre-Implantational Development
2.7. Implantation: Embryo-Endometrium Interaction
2.8. Pathology of Fertilization and Embryo Classification
2.9. Embryo Culture. In Vitro Embryo Culture Systems. Culture Media, Environmental Conditions and Supplements *One Step* and Sequential Cultures Renewal of Culture Media and Needs of the Embryo
2.10. In Vitro Embryonic Development Evaluation: Morphology and Morphokinetics Classical Embryonic Morphology Time-Lapse Systems Embryonic Morphokinetics Embryonic Classification

Module 3. Study of the Female Factor: Role of Surgery in Reproduction

3.1. Reproductive Study Indications: Basic Study of Both Partners
3.2. Ovarian Reserve Study
3.3. Tubal Permeability Assessment Techniques
3.4. Endometrial Assessment
3.5. SOP: Ovarian Drilling
3.6. Endometriosis and Adenomyosis
3.7. Uterine Myomas and Fertility
3.8. Hydrosalpinx Tubal Surgery in Tubal Reconstruction Techniques and Fertility Restoration
3.9. Uterine Disorders: Metroplasties. Septoplasties
3.10. Repeated Miscarriages: Implantation Failure

Module 4. Andrology Laboratory

4.1. Basic Semen Analysis: WHO 2010 Criteria
4.2. Sperm Mobility and Morphometry Analysis Using Automated Systems (CASA/CASMA)
4.3. Sperm DNA Analysis: TUNEL, SCD, COMET, SCSA. Relationship with Fertility
4.4. Oxidative Damage Assessment Determination of Antioxidants, Free Radicals and Evaluation of Lipid Peroxidation
4.5. Sperm Functionality by Molecular Markers: Apoptosis (AnnexinV, Caspases, Memrane Permeability), Ubiquitination, Protein Phosphorylation
4.6. Epigenetic Disorders in Spermatozoa
4.7. Selection and Control of Semen Donors
4.8. Managing a Sperm Bank
4.9. Cleaning the Sperm in Patients with HIV or Hepatitis
4.10. Preparation of Semen in Artificial Insemination

Module 5. Reproductive Treatments: Medication. Stimulation Protocols

5.1. Evolution of Reproductive Treatments Throughout History
5.2. Drugs Involved in Ovarian Stimulation: Ovulation Induction
5.3. Artificial Insemination: Techniques. Results
5.4. In Vitro Fertilization: Ovarian Stimulation Protocols in High, Normal and Low Responders. Luteal Phase Stimulation
5.5. Adjuvant Treatments Used in Low Ovarian Reserve
5.6. In Vitro Fertilization: Cycle Tracking. Ovarian Puncture Embryo Transfer
5.7. Embryo Cryotransfer: Endometrial Preparation in Substituted Cycles
5.8. Egg Donation: Embryoreception. Surrogacy
5.9. Complications in Assisted Reproduction Treatments
5.10. Multiple Pregnancy Reduction Policy

Module 6. Micromanipulation Techniques

6.1. IVF-ICSI
6.2. Use of Polarized Light Microscopy in Oocytes
6.3. Embryo Biopsy: Types of Biopsy. Corpuscule, Blastomere, Trophoectoderm
6.4. Collapse, *Hatching*, Fragment Aspiration
6.5. Improving Embryo Quality: Transfer of Nucleus and Cytoplasm
6.6. Cloning in Mammals: Background. Basic Principles of Cloning. Applications in Medicine
6.7. Problems with Cloning Epigenesis Reprogramming
6.8. Genetic Modification: *CRISPR*
6.9. Improving the Cytoplasmic Quality of the Oocyte
6.10. *In Vitro Gamete Production*

Module 7. Gamete and Embryo Cryopreservation

7.1. Cryobiology: Cryobiological Principles and Cryoprotective Agents. Cryopreservation Systems. Factors Affecting the Freezing Process. Additives and Application of Cryobiology
7.2. Sperm Cell Structure and Functionality: Physicochemical Processes that Induce Freezing in the Spermatozoon. Factors Determining Sperm Fertilization and Viability after Thawing
7.6. Cryopreservation of Ovarian Tissue: Laboratory Technique
7.7. Cryopreservation of Testicular Tissue: Laboratory Technique
7.8. Factors Affecting Performance in a Cryopreservation Program
7.9. How to Manage and Organize a Biobank and Its Safety
7.10. Ethical and Legal Aspects of Cell and Tissue Cryopreservation

Module 8. Fertility Preservation

8.1. Fertility Preservation: Cancer Epidemiology Age and Reproduction
8.2. Fertility Preservation for Non-Medical Reasons
8.3. Fertility Preservation for Oncologic Reasons
8.4. Fertility Preservation for Non-Oncologic Medical Reasons
8.5. Oocyte Vitrification: Technique and Results
8.6. Ovarian Cortex Cryopreservation
8.7. Cryopreservation of Semen
8.8. In Vitro Maturation of Oocytes
8.9. Other Methods of Fertility Preservation: Conservation Surgery in Gynecologic Cancer: Ovarian Transposition
8.10. Treatment with GnRH Analogues Prior to Gonadotoxic Treatments

Module 9. Genetics in Reproduction

9.1. Important Concepts in the Genetics of Reproduction
9.2. Epigenetics: Influence on Reproduction
9.3. Genetic Diagnostic Techniques
9.4. Genetic Anomalies Related to Male and Female Sterility

9.5. Indications for Genetic Studies in Assisted Reproduction
9.6. Screening for Recessive Diseases: Genetic *Matching*
9.7. Pre-Implantational Genetic Diagnosis in Monogenic Diseases
9.8. Pre-Implantational Genetic Screening in Assisted Reproduction Techniques
9.9. Mosaicisms
9.10. Genetic Counseling and Advice

Module 10. Legislation. Quality. Research and Future Techniques

10.1. Importance of Traceability in the Laboratory Electronic Traceability Systems
10.2. Research in Assisted Reproduction
10.3. Future of Reproduction: Automation
10.4. Non-Invasive Pre-Implantational Genetic Diagnosis
10.5. Artificial Intelligence
10.6. Ovarian Rejuvenation

A unique, key, and decisive program to boost your professional development"

06

Methodology

This academic program offers students a different way of learning. Our methodology follows a cyclical learning process***: Relearning.***

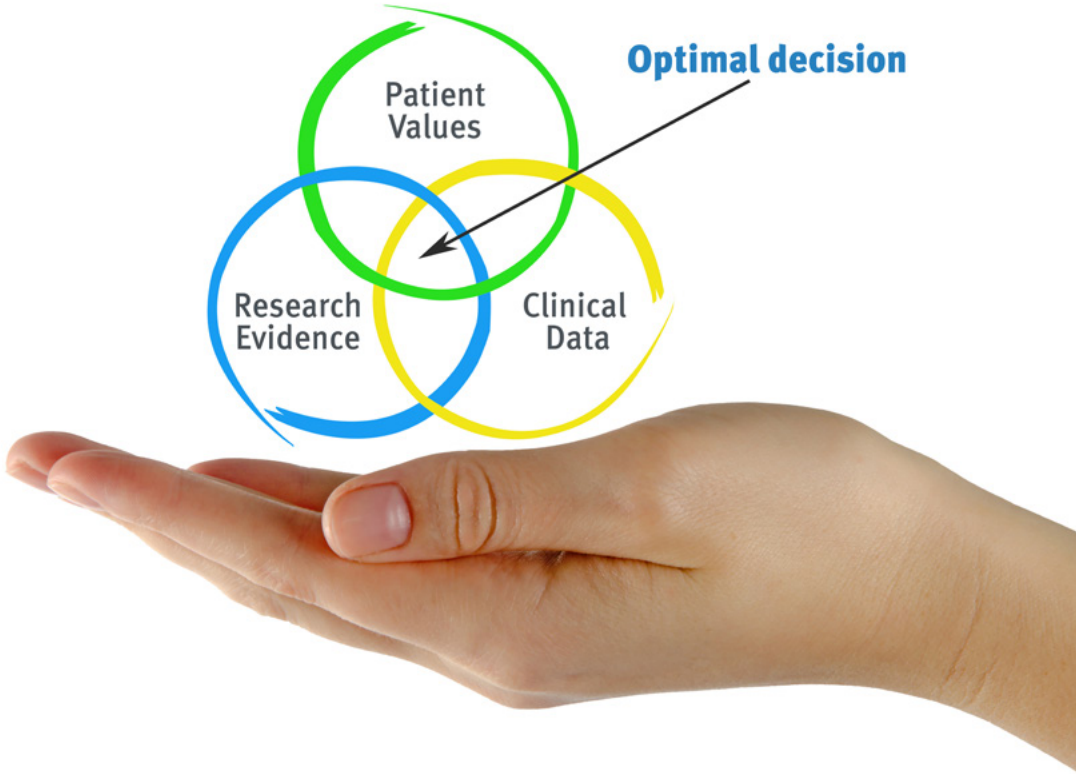
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH, we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method.

The effectiveness of the method is justified by four fundamental achievements:

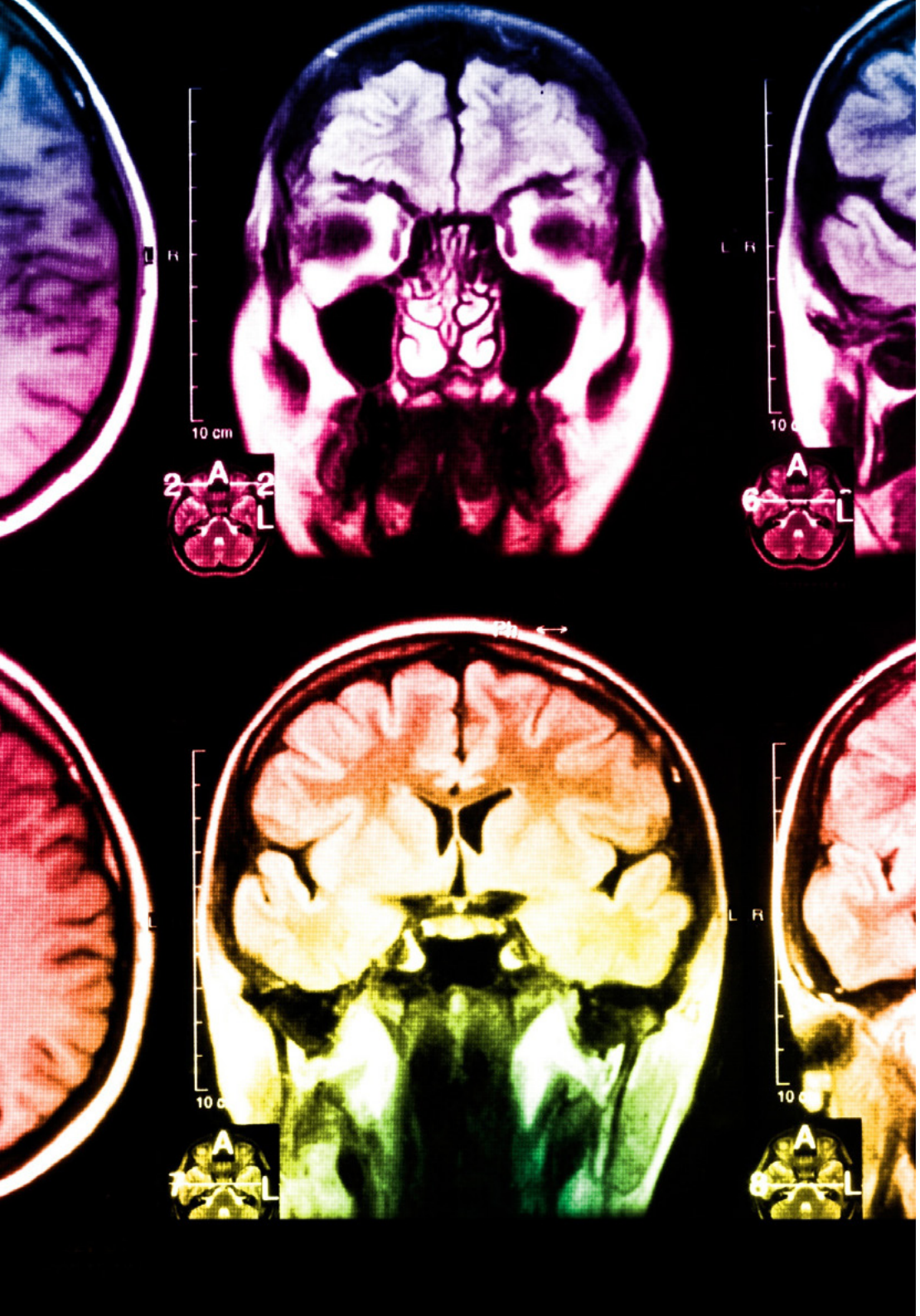
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then adapted in audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

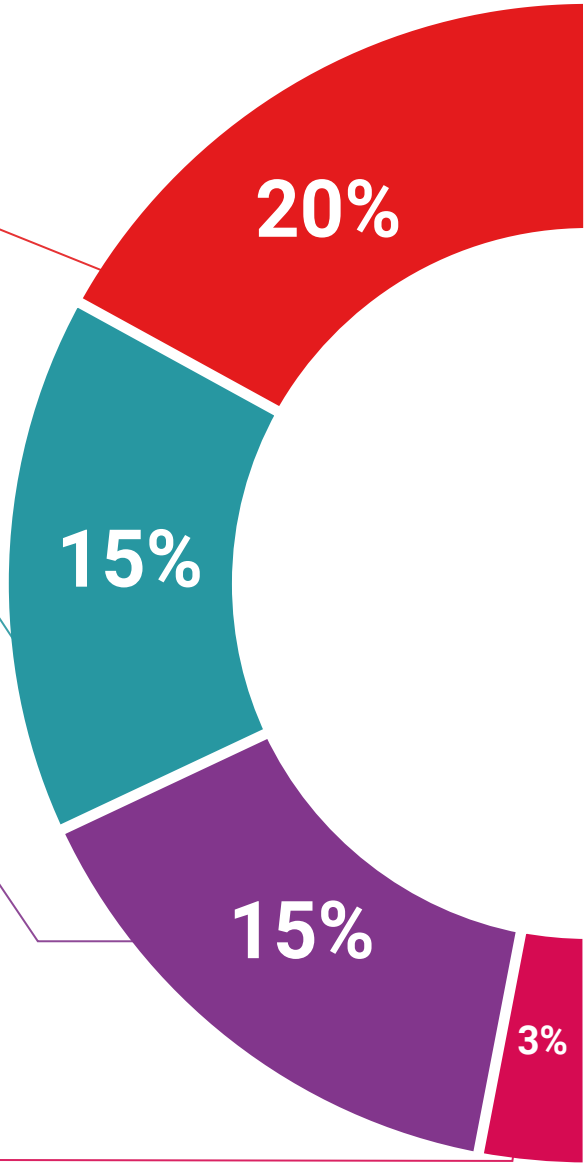
Interactive Summaries

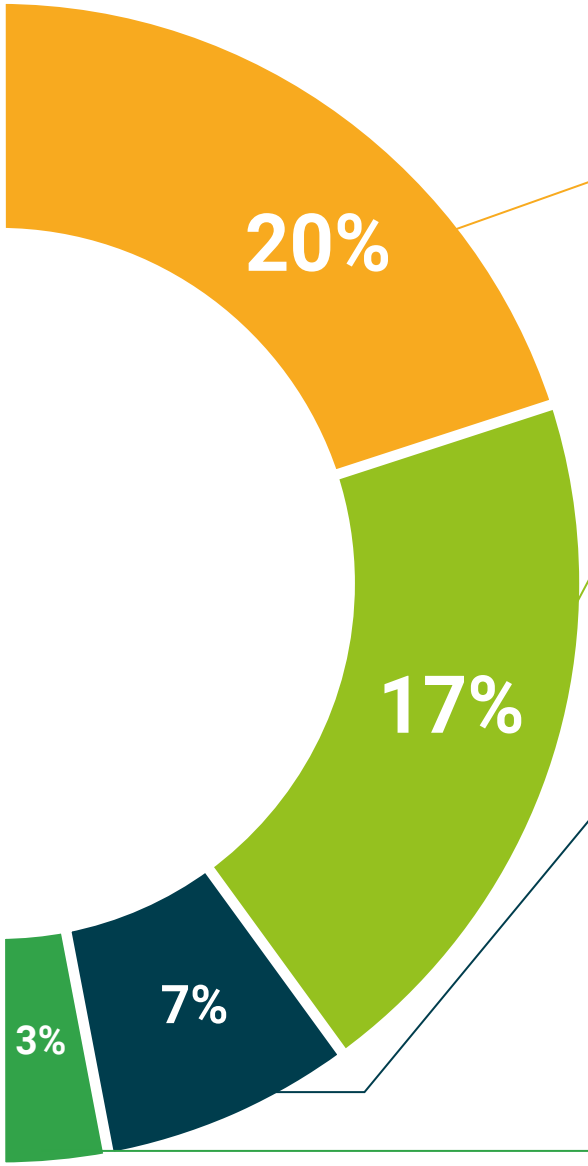
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

07

Certificate

The Professional Master's Degree in Assisted Reproduction guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Global University.

Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This private qualification will allow you to obtain a **Professional Master's Degree diploma in Assisted Reproduction** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Assisted Reproduction**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Professional Master's Degree in Assisted Reproduction

This is a private qualification of 1,800 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Professional Master's Degree in Assisted Reproduction

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	1,800
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,800

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Introduction. Anatomy. Physiology. Cellular Cycle	6	CO
1º	Gamete Interaction Fertilization Embryonic Development	6	CO
1º	Study of the Female Factor: Role of Surgery in Reproduction	6	CO
1º	Andrology Laboratory	6	CO
1º	Reproductive Treatments: Medication. Stimulation Protocols	6	CO
1º	Micromanipulation Techniques	6	CO
1º	Gamete and Embryo Cryopreservation	6	CO
1º	Fertility Preservation	6	CO
1º	Genetics in Reproduction	6	CO
1º	Legislation. Quality. Research and Future Techniques	6	CO

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Dean

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Professional Master's Degree

Assisted Reproduction

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

Assisted Reproduction

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