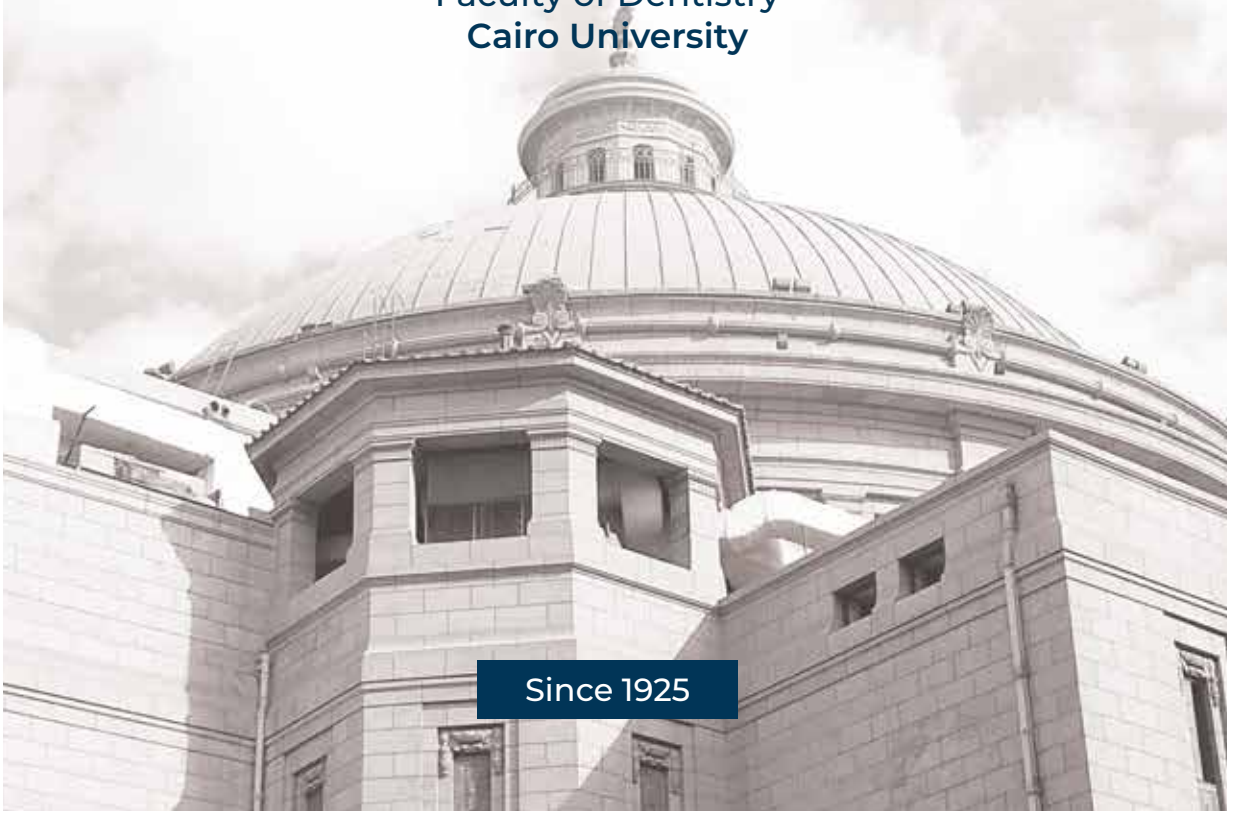
RESEARCH PLAN 2018-2023

Over **90** Years of Experience

Faculty of Dentistry
Cairo University



Since 1925

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Statement of purpose

The intent of this document is to encourage and support both individual and collaborative research as well as increase external funding for research support within the Faculty of Dentistry, Cairo University.

Methodology

1-Team assignment:

The structure of the working team was heterogeneous composed of 21 faculty members with wide age range nominated by the Head of the departments. At each step the progress was discussed during meetings of postgraduate affairs and research committee and approved by the Faculty council.

2-Time schedule:

The time framework was agreed upon by the team including all the activities.

3-Planning

I-Research development plan

- Provisional vision and mission statement
- SWOT analysis
- Final vision and mission statement
- TWOS matrix
- Setting action plan: strategic objectives, strategy, goals, action, responsibility, time of completion and budget.

II-Research plan

- Collecting data of researches carried during the last five years to define area of interest (down to up track)
- Reviewing the academy of scientific research and technology for areas of interest in health (up to down track)
- Reviewing Cairo University research plan (up to down track)
- Identifying national health problems that need further research
- Studying the community needs
- Defining faculty areas of interest
- Each department set its own research plan that fulfill the faculty plan

4- Dissemination:

- At each step documents were disseminated electronically for feedback and adjustment

5-Approval:

- Research plan was approved as a draft by the faculty council
- Final research plan was approved by the faulty council after discussion with all parties

Background

Faculty of Dentistry, Cairo University has a worldwide reputation for its high quality faculty members and educational programs which attract the best students at national and regional level. The faculty is a national leader in dental education with graduates assuming leadership positions in the dental profession.

In 1925, the Faculty was founded under the name of " School of Dental Medicine" which was under the supervision of Ministry of General Knowledge (Ministry of Education). The school joined the Medical school at Kasr El Eini and was one of its branches in 1928.A huge building was established for the Faculty of Dentistry in the late fifties. The continuous increase in the number of under and postgraduate students in addition to the increase of faculty departments reaching up to 12 departments result in a desperate need for new buildings to provide high quality educational process as well as dental care service for the public.

Since we believe that the needs of the public are best served if the profession is oriented primarily to general practice, the construction of the new Educational Dental Hospital was completed in 2004. The building is fully equipped with the most recent technology in dental practice, high standard operating room, digital library, conference hall, highly equipped production laboratories and store for dental supplies. In 2018 a huge extension of the Faculty of Dentistry in Elsheikh Zayed was established to provide the community with highly qualified specialist and researchers in all disciplines of Dentistry.

Research is an integral part of our mission owing to the given strength of the faculty members and the strong collaborative tradition in dental research. Our many award-winning researchers collaborate with colleagues at other faculties of dentistry, other faculties at Cairo University, and research institutes worldwide. The principal goal for the research activities is to set the pace for innovation, clinical application, and research training in an area that lies at the core of dental medicine.

Research Vision

To become recognized globally as a center of excellence in the field of dental research and to have all of its graduate programs accredited nationally, regionally and globally.

Research Mission

The research mission of the Faculty of Dentistry, Cairo University is to enhance the overall oral and dental health of Egyptian citizens through conduction of high standard research projects in the different fields of dentistry and contributory sciences. The Faculty is committed to provide the society with ethical and competent researchers enriched with the necessary knowledge, skills and behavior. Advancement in research and technology will be transferred to the global public domain aiming to an increased presence internationally.

Core Values

- **Integrity** : The quality of being honest and having strong moral principles.
- **Cooperation** : with empathy that is a universal team value promoting cooperation in the workplace.
- **Commitment** : to innovation and excellence.

FACULTY RESEARCH PLAN

Theme 1: Epidemiology

Epidemiologic studies are very important, not only to evaluate the actual burden of the disease but also to elucidate probable susceptibility differences among various populations. The research will provide information on oral health among Egyptian population over time and the findings will inform Government policy maker for better understanding and addressing dental health needs. The research will also enhance communication skills, attitudinal awareness, and working experiences essential for the successful fulfillment of collaboration and consultation responsibilities in oral epidemiologist future careers.

FACULTY OBJECTIVES

1-1. Detection of the prevalence and incidence of the most common oral and dental diseases in Egyptian population

- **PER 1-1-1:** Detect the prevalence and incidence of periodontal and peri-implant diseases at the faculty level (patients attending outpatient and specialty clinics).
- **PER 1-1-2:** Detect the prevalence and incidence of periodontal and peri-implant diseases in Egyptian population at the national level.
- **OMED 1-1-1:** Study prevalence or incidence of oral manifestations related to environmental factors and personal habits in the Egyptian population
- **OMED 1-1-2:** Study Incidence or prevalence of autoimmune and immunologically mediated disorders affecting oral cavity in the Egyptian population.
- **PEDO 1-1-1:** Detect the prevalence and incidence of dental caries and other common oral and dental diseases in Egyptian children at the faculty and national level.
- **OP 1-1-1:** Detect the prevalence and incidence of the most common oral pathological conditions in the Egyptian population.
- **PRO 1-1-1:** Assess the incidence of completely and partially edentulous patients and correlate it to their ages, possible local or systemic predisposing factors.
- **PRO 1-1-2:** Evaluate patient needs for the different prostheses and their satisfaction with treatment.
- **OMFS 1-1-1:** Study the prevalence of distribution of trauma, diseases of the orofacial region and distribution of tumors of the oro-facial region among Egyptian population.

- **OMFS 1-1-2:** Study the incidence of jaw deformities among Egyptian population.
- **OMFS 1-1-3:** Update the knowledge of the epidemiological data of different aspects of TMJ disorder over the last 10 years.
- **ORTH 1-1-1:** Study the prevalence of malocclusion and dento-facial orthopedics in different age groups.
- **ORTH 1-1-2:** Assess etiological factors underlying different malocclusion and dento-facial deformities.
- **ORAD 1-1-1:** Detect the prevalence and incidence of dental caries and periodontal diseases in Egyptian using low dose, varying parameters, varying FOV of CBCT as well as varying soft wares (both propriety and third party soft wares).
- **FPD 1-1-1:** Detect the prevalence and incidence of Temporomandibular joint disorders due to impaired occlusion at the faculty level (patients attending outpatient and specialty clinics).
- **FPD 1-1-2:** Detect the prevalence and incidence of Temporomandibular joint disorders due to impaired occlusion in Egyptian population at the national level.

1-2. Detection of risk factors for different oral and dental diseases

- **PER 1-2-1:** Detect risk factors for periodontal and peri-implant diseases.
- **OMED 1-2-1:** Study the relation between different environmental factors, personal habits or systemic condition and changes in oral health status.
- **PEDO 1-2-1:** Detect risk factors for dental caries and other common oral and dental diseases in Egyptian children.
- **OP 1-2-1:** Examine the role of genetic factors and other risk factors e.g. tobacco intake, ... etc. in oral pathological conditions.
- **OP 1-2-2:** Investigate new aspects in the molecular biology of oral premalignant and malignant lesions, odontogenic cysts and tumors as well as bone diseases.
- **PRO 1-2-1:** Study the correlation between the state of partial or complete edentulism and the incidence of temporomandibular joint disorders.
- **ORAD 1-2-1:** Detect the risk factors for dental caries and periodontal diseases using low dose, varying parameters, varying FOV of CBCT as well as varying soft wares (both propriety and third party soft wares).
- **OPER 1-2-1:** Detect different risk factors involved in caries incidence and develop new methods for caries risk assessment.
- **OPER 1-2-2:** Elucidate the risk factors involved in different non-carious lesions and develop new methods for its risk assessment.
- **FPD 1-2-1:** Detect risk factors for Temporomandibular joint disorder.

1-3. Prevention of dental caries as well as non carious lesions, temporomandibular joint disorders and periodontal diseases among Egyptian population

- **PER 1-3-1:** Prevent periodontal and peri-implant diseases among Egyptian population
- **PEDO 1-3-1:** Prevent dental caries and other common oral and dental diseases in Egyptian children.
- **OPER 1-3-1:** Evaluate and compare the performance of conventional and newly introduced preventive and therapeutic approaches used in clinical practice
- **OPER 1-3-2:** Establish innovative preventive measures
- **OPER 1-3-3:** Evaluate and compare different biological approaches in managing incipient dental caries
- **OPER 1-3-4:** Evaluate and assess different methods for prevention of dental non-carious lesions
- **OPER 1-3-5:** Evaluate and compare different approaches in managing dental non-carious lesions
- **FPD 1-3-1:** Prevent temporomandibular joint disorders due to impaired occlusion among Egyptian population.

1-4. Early detection and prevention of oral cancer

- **OMED 1-4-1:** Study Incidence or prevalence of potentially malignant and malignant lesions of the oral cavity in the Egyptian population
- **OMED 1-4-2:** Assess the efficacy and safety of chemopreventive interventions for malignant transformation
- **OB 1-4-1:** Apply highly updated technologies on a molecular level that enhance the screening, early detection and likelihood of oral tumors.
- **OB 1-4-2:** Use the molecular biological concepts in promoting prevention of the oral tumors
- **OB 1-4-3:** Correlate the oral tumors with the social and economic demographics to help minimize the prevalence of oral tumors.
- **OP 1-4-1:** Evaluate the effectiveness of different methods or markers used in the early detection of oral cancer.
- **OP 1-4-2:** Investigate the protective and therapeutic effects of some naturally available food substance in experimental animals.
- **ORAD 1-4-1:** Detect oral cancer early using recent innovations in MRI, CT, CBCT, and nuclear medicine.

Theme 2: Special needs patients

The research will focus on data collection and analysis of oral health status of patients with special needs. This will provide innovative methods for exploring changes in their oral and dental health aiming to prevent disease development and progress.

FACULTY OBJECTIVES

2-1. Detection of the prevalence of oral and dental diseases in patients (children and adults) with special needs and addressing their treatment needs

- **OMED 2-1-1:** Study prevalence or incidence of oral manifestations related to systemic conditions in the Egyptian population.
- **OMED 2-1-2:** Study prevalence or incidence of drug induced oral manifestations in the Egyptian population.
- **PEDO 2-1-1:** Detect the prevalence of oral and dental diseases in children with special needs.
- **ORAD 2-1-1:** Examine radiographically patients with special needs to collect and analyze radiographic data and findings to detect the prevalence of oral and dental diseases in these patients (children and adults) in collaboration with departments addressing their treatment needs.
- **OPER 2-1-1:** Detect caries prevalence and incidence of non-carious dental lesions in adult patients with special needs and address their treatment needs.
- **OPER 2-1-2:** Detect incidence of carious and non-carious dental lesions in geriatric patients and address their treatment needs.

2-2. Establishment of innovative preventive measures of oral and dental diseases in patients with special needs as well as treatment

- **OMED 2-2-1:** Assess the efficacy and safety of preventive interventions for oral complications of cancer treatment.
- **PEDO 2-2-1:** Prevent and treat oral and dental diseases in children with special needs.
- **OPER 2-2-1:** Establish innovative preventive measures that are suitable for adult patients with special needs.
- **OPER 2-2-2:** Elucidate different biological and surgical approaches used to manage dental lesions in adult patients with special needs.
- **OPER 2-2-3:** Establish innovative preventive measures for carious and non-carious lesions in geriatric patients.
- **OPER 2-2-4:** Evaluate and compare different approaches in managing carious and non-carious lesions in geriatric patients.

Theme 3: Evaluation and innovation in dental instruments techniques, medicine and materials

The on-going search for a biologically acceptable restorative material has brought a confusing variety of materials in the dental market. Basic information on the physical, antimicrobial as well as the biomechanical properties of dental and craniofacial biomaterials are important in the development of successful clinically acceptable dental materials. Various treatment modalities and techniques are recently introduced for management of oral, dental and maxillofacial disorders and diseases. The evaluation of the new approaches and the innovation in the field would provide better patient satisfaction and enhancement of dental practice.

FACULTY OBJECTIVES

3-1. Biocompatibility evaluation as obtained by the cell culture techniques, organ-culture host environment and mimicry to the reactions obtained when the materials are tested under conditions which reflect their clinical use

- **OB 3-1-1:** Explore the effectiveness and safety of new materials, equipment and technologies in such a way to improve dental and medical health care, as well as improve the personal and social status.
- **OP 3-1-1:** Assess tissue response to newly developed materials and drugs used in management of various dental and oral conditions.
- **ENDO 3-1-1:** Investigate cytotoxicity and/or neurotoxicity and/or biocompatibility of different/new irrigants, sealers, repair materials, obturation materials or bleaching agents.
- **FPD 3-1-1:** Evaluate new materials from biological aspects.

3-2. Assessment of the behavior of dental materials based on macro/micro/nano structure

- **OB 3-2-1:** Develop new modalities in assessment of the biocompatibility and behavior of the used dental material on a micro and nano level.
- **OP 3-2-1:** Compare tissue response to dental materials and drugs based on nano structure with those based on macro structure.

3-3. Innovation and evaluation of recent techniques and designs in dental practice

- **PER 3-3-1:** Evaluate new techniques in management of gingival deformities.
- **PER 3-3-2:** Evaluate new techniques in management of periodontal defects (horizontal, intra-osseous, furcation defects).
- **PEDO 3-3-1:** Evaluate new techniques in management of dental caries and other common oral and dental diseases in Egyptian children.
- **OP 3-3-1:** Evaluate tissue response to recent techniques in dental practice.

- **PRO 3-3-1:** Innovate and evaluate new techniques and designs for occlusal appliance therapy.
- **PRO 3-3-2:** Innovate and evaluate new designs and treatment modalities in removable and maxillofacial prostheses.
- **PRO 3-3-3:** Innovate and evaluate new appliances for sleep disordered breathing.
- **PRO 3-3-4:** Introduce new treatment concepts and application in extra and intra oral maxillofacial prosthodontics.
- **PRO 3-3-5:** Introduce 3 D printing in prosthodontics field.
- **OMFS 3-3-1:** Investigate the utilization of tissue engineering in maxillofacial reconstruction.
- **OMFS 3-3-2:** Assess the application of advanced distraction osteogensis in maxillofacial deformities.
- **OMFS 3-3-3:** Innovate different modalities for management of TMJ diseases.
- **OMFS 3-3-4:** Assess the response of different aspects of neuromuscular and skeletal system in relation to orthognathic and TMJ surgery
- **OMFS 3-3-5:** Evaluate the advanced techniques in facial implants and to evaluate its use in facial reconstruction and rehabilitation.
- **OMFS 3-3-6:** Investigate new modalities for treatment of tumors and relevant reconstruction.
- **OMFS 3-3-7:** Investigate new and improved advanced techniques in orthognathic surgery.
- **OMFS 3-3-8:** Clarify the effect of new modalities of cleft lip and palate surgery on adjacent and distant structures.
- **OMFS 3-3-9:** Investigate the efficacy of new techniques, drugs and computer controlled local anaesthesia in pain control.
- **OMFS 3-3-10:** Evaluate the computer guided soft and hard tissue in oral and maxillofacial surgical reconstruction and applications of navigation system.
- **OMFS 3-3-11:** Evaluate and modify current methods used in management of infection in orofacial head and neck region.
- **OMFS 3-3-12:** Clarify the surgical immune competence in response to different interventions in OMFS.
- **OMFS 3-3-13:** Evaluate and modify updates in maxillary sinus problems and approaches.
- **OMFS 3-3-14:** Evaluate different innovative bone augmentation techniques in reconstruction of jaw bone.
- **OMFS 3-3-15:** Investigate the response of oro-facial and neck soft tissue to different interventions of maxillofacilal trauma in children.
- **OMFS 3-3-16:** Innovate and evaluate new simplified techniques in management of

trauma in children.

- **OMFS 3-3-17:** Evaluate and innovate advanced technology and technique for management of post-traumatic residual deformities.
- **ORTH 3-3-1:** Evaluate different TMD treatment modalities.
- **ORTH 3-3-2:** Assess new techniques like soft laser, use of Botox and new appliance deigns.
- **ORTH 3-3-3:** Evaluate clinically and through animal model different enhancement techniques used to maximize orthodontic treatment effects.
- **ORTH 3-3-4:** Set evidence-based treatment protocols for different malocclusion.
- **ORTH 3-3-5:** Evaluate the use of miniscrews and mini-plates in different treatment applications.
- **ORTH 3-3-6:** Assess different aspects of miniscrews and miniplates stability and causes of failure.
- **ORAD 3-3-1:** Assess radiographically the reliability and efficacy of techniques in dental practice as surgical techniques, tissue engineering techniques, etc.....
- **OPER 3-3-1:** Evaluate advanced designs in tooth preparations.
- **OPER 3-3-2:** Introduce innovative designs in tooth preparation in accordance with recent modifications in restorative materials.
- **OPER 3-3-3:** Evaluate the effect of recent caries removal concepts and techniques on recurrent caries, pulp and periodontal tissue.
- **OPER 3-3-4:** Evaluate mechanical behaviour of recent restorative materials and techniques under different oral environmental conditions.
- **OPER 3-3-5:** Evaluate different esthetic treatment modalities used for correction of shape, size and color of different esthetic disorders.
- **OPER 3-3-6:** Evaluate and assess long-term durability and prognosis of different restorative materials and clinical treatment modalities.
- **ENDO 3-3-1:** Investigate shaping ability with new instruments and/or biomechanical preparation techniques under various conditions e.g. different degree of curvatures or in oval canals.
- **ENDO 3-3-2:** Investigate smear layer removal and/or debridement and/or apical extrusion of debris after different/new irrigation techniques or instrumentation techniques or retreatment techniques.
- **ENDO 3-3-3:** Investigate the dissolution of different obturating materials and the efficiency of their removal on using different procedures.

- **ENDO 3-3-4:** Investigate apical extrusion of debris after different/new irrigants/irrigation techniques or intracanal medication or instrumentation techniques or obturation or retreatment techniques.

- **ENDO 3-3-5:** Investigate pain and/or periapical healing with different/new irrigation techniques, or instruments/instrumentation techniques, or obturation techniques, or retreatment techniques, or single versus multiple visits.

- **FPD 3-3-1:** Apply novel construction techniques for crowns and fixed partial dentures.

- **FPD 3-3-2:** Evaluate new designs from physical, mechanical and biological aspects.

- **FPD 3-3-3:** Apply optimal management of mutilated vital teeth reconstruction.

- **FPD 3-3-4:** Maintain the integrity of mutilated non-vital teeth through the employment of various reinforcing materials and techniques.

- **FPD 3-3-5:** Formulate esthetic treatment modalities using latest digital smile designing technology

- **FPD 3-3-6:** Assess new protocols for different restorations.

- **FPD 3-3-7:** Evaluate advances in restorative esthetic field.

- **FPD 3-3-8:** Apply digital technology in various aspects of fixed prosthodontics.

3-4. Innovation and evaluation of physical properties of new materials, instruments and devices used in dental armamentarium

- **PRO 3-4-1:** Innovate and evaluate new materials for occlusal appliance therapy.

- **OPER 3-4-1:** Evaluate and assess recent dental instruments and tools used in Conservative dentistry.

- **OPER 3-4-2:** Establish innovative instrumentation for tooth preparation and restoration.

- **ENDO 3-4-1:** Investigate physicochemical properties of different/new endodontic obturation materials, sealers and root repair materials.

- **ENDO 3-4-2:** Investigate surface topographic changes of different endodontic enlarging instruments on exposure to various conditions e.g. autoclave sterilization, irrigants, canal preparation.

- **FPD 3-4-1:** Evaluate new materials from physical aspects.

3-5. Experimental and computational analysis of biomechanical stress as obtained for example by finite element (FE) modeling

- **ENDO 3-5-1:** Investigate different/ new endodontic instruments in terms of biomechanical behavior (e.g. fracture resistance; flexural cyclic fatigue, torsional strength) under different conditions of canal curvatures, irrigation, and sterilization and/or cutting efficiency conditions.
- **ENDO 3-5-2:** Investigate different/ new endodontic sealers or obturation materials or repair materials in terms of bond strength to dentin and/or its degradation under different conditions.
- **ENDO 3-5-3:** Investigate root resistance to fracture using new/different endodontic materials or reinforcing protocols.
- **ENDO 3-5-4:** Investigate changes in root dentin, such as development of microcraks, using different chemicals, materials or instrumentation techniques.
- **FPD 3-5-1:** Evaluate new materials from mechanical aspects.

3-6. Evaluation of the antimicrobial and immunologic effects of new dental materials or techniques

- **OP 3-6-1:** Determine the effect of new materials and drugs on the type and number of inflammatory cells.
- **ENDO 3-6-1:** Investigate the antimicrobial and/or immunologic effect of different/ new irrigants, or chelators, or herbal extracts or intracanal medication.
- **ENDO 3-6-2:** Investigate the antimicrobial effect of innovated sealer types or core materials.
- **ENDO 3-6-3:** Assess microbial eradication potential of different/ new irrigation and/ or instrumentation techniques.

3-7. Assessing the efficacy of new materials and medicines in vitro and in clinical trials

- **OMED 3-7-1:** Evaluate and innovate medicines and technologies for treatment of oral diseases.
- **OMED 3-7-2:** Assess the efficacy and safety of herbal medicine or alternative technologies to treat oral mucosal lesions
- **OMED 3-7-3:** Assess the efficacy and safety of interventions managing oral complications of cancer treatment.
- **DBM 3-7-1:** Evaluate, characterize and optimize novel dental materials and techniques: Nano-dental materials, Remineralizing materials, Direct and indirect restorati-

ve materials and Dental adhesives.

- **DBM 3-7-2:** Utilize natural alternatives and/or natural additives to commercially available dental materials.
- **OB 3-7-1:** Boost the innovation of various hard and soft tissue grafts in reconstruction of hard and soft tissue defects.
- **OB 3-7-2:** Update the knowledge about new materials, equipment and technologies in treatment of most dental and oral diseases.
- **PRO 3-7-1:** Investigate the in vitro behavior and clinical treatment outcome of injectable flexible resin peek, pekk in removable and maxillofacial prostheses.
- **ORTH 3-7-1:** Evaluate clinically and through animal model different new materials used to maximize orthodontic treatment effects.
- **ORAD 3-7-1:** Assess radiographically both chemical and physical properties of new materials used in clinical trials by radiographic analysis of the effect of such materials whether on bone formation , volume gain, healing, etc.
- **OPER 3-7-1:** Evaluate the esthetic stability of recent anterior esthetic restorative materials.
- **OPER 3-7-2:** Evaluate the effect of new restorative materials on recurrent caries, pulp and periodontal tissue.
- **ENDO 3-7-1:** Investigate pain and/or periapical healing with different/new intracanal medication, or therapeutics, irrigation materials or obturation or retreatment materials.
- **ENDO 3-7-2:** Investigate pulp reaction and/or maturogenisis using new capping materials or bleaching agents.
- **ENDO 3-7-3:** Investigate smear layer removal and/or debridement and/or apical extrusion of debris after different/new irrigants or intracanal medication or retreatment materials (solvents).
- **FPD 3-7-1:** Assess bonding materials for different restorations.

Theme 4: Oral health in the perspective of systemic health

Systemic health is often closely linked to the state of the oral cavity; many systemic diseases and conditions have oral manifestations. Likewise, oral microbiological infections may also affect one's general health status. Better understanding of this correlation will help both dental and medical professionals to determine the best approach to patient care.

FACULTY OBJECTIVES

4-1. Investigation of the impact of oral and dental diseases on systemic health to integrate oral health promotion and care with other health sectors using the common risk factor approach.

- **PER 4-1-1:** Investigate the impact of periodontal diseases on cardiovascular diseases, rheumatoid arthritis, pulmonary diseases and renal diseases.
- **PER 4-1-2:** Investigate the impact of systemic diseases and conditions on periodontitis including obesity, stress and nutritional deficiencies.
- **PEDO 4-1-1:** Investigate the impact of dental caries and other common oral and dental diseases in children and children with special health care needs.
- **ORAD 4-1-1:** Search for evidence of association between oral health and general health status using radiographic assessment.
- **OPER 4-1-1:** Investigate the influence of dental hard tissue lesions on health promotion of patients with systemic diseases.
- **OPER 4-1-2:** Evaluate the influence of systemic diseases and their treatment side effects on dental caries incidence and prevention.
- **OPER 4-1-3:** Elucidate the influence of systemic diseases and their treatment side effects on Conservative dentistry treatment modalities.

4-2. Evaluation of the impact of treatment of diseases of oral and craniofacial origin on minimizing the development of physical and psychosocial diseases.

- **PER 4-2-1:** Evaluate the impact of treatment of periodontal diseases on individuals' quality of life.
- **PEDO 4-2-1:** Evaluate the impact of full oral rehabilitation on children's quality of life.
- **OP 4-2-1:** Study the side effects of different treatment modalities and medications adopted during treatment of different oral diseases and neoplasms.
- **OPER 4-2-1:** Investigate the influence of treatment modalities of dental hard tissue lesions on health promotion of patients with systemic diseases

Theme 5: Stem cells in reconstruction of hard and soft tissues

Researches in this theme attempt to refine alveolar and facial reconstruction from planning to completion and write a blueprint for the management and correction of dental and craniofacial deformities. Research is both laboratory-based and clinically grounded. Much of the work involves the entire patient pathway and, as a consequence, is translational in its nature and effect.

FACULTY OBJECTIVES

5-1. Development of suitable three-dimensional scaffold for the maintenance of cellular viability and differentiation for applications in tissue engineering

- **DBM 5-1-1:** Prepare, characterize and optimize tissue engineering scaffold.
- **OPER 5-1-1:** Study cellular viability and its differentiation when using different scaffolds with pulp-derived cells.

5-2. Evaluation of the constructed scaffolds by the analysis of microscopic structure, porosity, and cytocompatibility

- **OPER 5-2-1:** Investigate the effectiveness of different scaffolds in regenerative procedures of enamel, dentin and pulp.

5-3. Monitoring seeded cell attachment, morphology, viability, and metabolic activity

- **OP 5-3-1:** Examine and monitor changes in cell viability, morphology and functions, following the use of stem cells in the reconstruction of hard and soft tissue.

5-4. Evaluation of the safety and effectiveness of the tissue engineered product in experimental animals

- **PER 5-4-1:** Evaluate safety and effectiveness of tissue-engineered product in induced and naturally occurring periodontal and peri-implant defects in experimental animal models.
- **OP 5-4-1:** Investigate the effect of tissue engineered products on oral tissues and salivary glands in experimental animals.
- **ORAD 5-4-1:** Assess reconstructed and tissue engineered hard and soft tissues in experimental studies.
- **FPD 5-4-1:** Evaluate safety and effectiveness of tissue-engineered product in edentoulous ridge resorption and peri-implant defects in experimental animal models.

5-5. Investigating suitable methods for isolation and culturing of stem cells to provide sufficient cells for translation of this technology into the clinic

- **OB 5-5-1:** Select and isolate stem cells with dentinogenic potentialities to provide a tangible approach to develop new regenerative therapies for dental and oral tissues.

5-6. Evaluation of using stem cells in various hard and soft tissue regeneration

- **PER 5-6-1:** Evaluate the use of stem cells in regeneration of gingival deformities and periodontal defects (intra-osseous, furcation defects).
- **OMED 5-6-1:** Use of stem cells in management of different oral mucosal lesions
- **OMED 5-6-2:** Introduce new drug delivery methods to maximize the effect of the use of stem cells treatments.
- **OB 5-6-1:** Use the stem cells as a regenerative substitute for diseased dental and oral tissues.
- **ORAD 5-6-1:** Assess radiographically reconstructed hard and soft tissues using stem cells.
- **ENDO 5-6-1:** Integrate the tissue engineering discipline in regeneration of pulp and periapical tissues in immature or immature teeth primarily through clinical investigation of periapical healing and/or maturogenesis and/or tooth survival using different regenerative protocols or scaffolds. Supplemental laboratory investigation may be needed for assessment of cellular viability, differentiation and origin.
- **FPD 5-6-1:** Evaluate the use of stem cells in regeneration of residual ridge defects.

Theme 6: Dental implants

It is imperative that the routine clinical use of any implant system should be based entirely on an evaluation of the outcome of that specific system in prescribed scrutiny of long-term follow-up clinical investigations. The immediate and delayed loadings as well as different bone augmentation techniques were studied in the literature. Future focus is directed to the improvement of implant therapy in a patient oriented approach minimizing time and pain while maximizing esthetics and long-term outcome.

FACULTY OBJECTIVES

6-1. Evaluation of different innovative techniques of guided implant surgery

- **PRO 6-1-1:** Evaluate the application and accuracy of computer aided implant surgical guide (3 D printing versus milled).
- **ORAD 6-1-1:** Evaluate radiographically different innovative techniques of guided implant surgery.

- **FPD 6-1-1:** Apply and assess computer-guided planning for implant placement in conjunction with abutment and supra-structure designs.
- **FPD 6-1-2:** Assess biomechanics of different implant supra-structures.

6-2. Investigation and innovation in prosthodontics aspect of dental implants

- **PRO 6-2-1:** Innovate and evaluate new strategies for implant placement and restoration.
- **PRO 6-2-2:** Evaluate biomechanical technical risks in implant prosthodontics.
- **PRO 6-2-3:** Evaluate new occlusal consideration in implant prosthodontics.
- **ORAD 6-2-1:** Evaluate post-prosthetic implant imaging to reveal any alveolar bone changes.
- **FPD 6-2-1:** Evaluate different materials and designs for implant supra-structures.

6-3. Investigation of new surgical techniques and implant design to achieve better bone and soft tissue quality and patient satisfaction at implant site

- **PER 6-3-1:** Investigate new techniques for implant site development and management of alveolar defects.
- **PER 6-3-2:** Investigate new surgical techniques to improve esthetics and patient satisfaction at implant sites.
- **PER 6-3-3:** Evaluate novel implant materials and surface modification techniques for dental implant in vivo.
- **DBM 6-3-1:** Evaluate, characterize and optimize novel implant materials and surface modification techniques for dental implant in vitro.
- **OB 6-3-1:** Assess the tissue reaction in response to the implant
- **OP 6-3-1:** Evaluate tissue response to newly developed implant surgical techniques and materials.
- **PRO 6-3-1:** Evaluate the treatment outcome of new implant designs.
- **ORAD 6-3-1:** Evaluate radiographic imaging planning in varying computer-guided and aided surgeries.
- **FPD 6-3-1:** Investigate new techniques for implant site development and management of alveolar defects.
- **FPD 6-3-2:** Investigate new surgical and prosthodontic techniques to improve white and pink esthetics which leads to patient satisfaction.
- **FPD 6-3-3:** Evaluate different materials and designs for implants.

6-4. Utilization of innovative techniques in management of peri-implantitis

- **PER 6-4-1:** Evaluate innovative techniques and approaches to manage peri-implantitis.

Theme 7: Diagnostic research

This research area aims at developing innovative ways of detecting and diagnosing dental diseases and conditions such as caries, periodontal diseases, pulp and apical diseases with emphasis on the assessment of the sensitivity and specificity of the evolved diagnostic tools and techniques.

FACULTY OBJECTIVES

- **7-1. Assessment of new diagnostic techniques in dentistry**
- **OMED 7-1-1:** Measure the sensitivity and specificity of noninvasive techniques, devices, and biological markers in screening malignant changes in oral mucosal lesions.
- **PEDO 7-1-1:** Assess new diagnostic techniques in pediatric dentistry.
- **OP 7-1-1:** Evaluate the accuracy of new techniques applied in diagnosis of different pathological conditions.
- **ORTH 7-1-1:** Evaluate and compare 2D, 3D, and 4D imaging techniques in orthodontic diagnosis, treatment planning and prediction of treatment outcomes.
- **ORTH 7-1-2:** Use stereo- photogrammetry soft tissue analysis for orthodontic patients with different skeletal and dental malocclusion, facial asymmetry and comparing pre and post treatment changes.
- **ORAD 7-1-1:** Assess the role of new diagnostic imaging techniques in diagnosis and follow-up of oral and maxillofacial diseases and abnormalities
- **OPER 7-1-1:** Assess the performance of recent diagnostic tools for early detection of dental caries.
- **OPER 7-1-2:** Evaluate the performance of different diagnostic tools and techniques for detection of recurrent caries.
- **OPER 7-1-3:** Assess recent diagnostic tools and techniques for caries examination of deep carious dentin during cavity preparation.

- **7-2. Development of innovative diagnostic techniques in dentistry**
- **PER 7-2-1:** Evaluate and develop chair side tests for detection of biomarkers associated with the pathogenesis of periodontal and peri-implant diseases.

- **PER 7-2-2:** Evaluate and develop chair side tests for assessment of microbiologic and immunologic effects of treatment of periodontal diseases.

- **OMED 7-2-1:** Identify new diagnostic criteria using mainly molecular diagnostic biological markers for autoimmune and immunologically mediated disorders affecting oral cavity.

- **PEDO 7-2-1:** Develop new diagnostic techniques in pediatric dentistry.

- **ORAD 7-2-1:** Develop innovative diagnostic imaging techniques in diagnosis and follow-up of oral and maxillofacial diseases and abnormalities.

- **OPER 7-2-1:** Develop innovative diagnostic tools and techniques for early detection of dental caries.

- **OPER 7-2-2:** Develop innovative diagnostic tools and techniques for diagnosis of last layer of carious dentin during cavity preparation.

- **FPD 7-2-1:** Apply diagnostic and analytic tools of occlusion and load distribution of natural dentition and artificial fixed restorations.

- **FPD 7-2-2:** Assess of the therapeutic role of fixed prosthodontics in management of occlusion problems.

KEY FOR CODING (DEPARTMENT CODE- CODE NUMBER)

- ORAL PATHOLOGY – OP
- ORAL BIOLOGY – OB
- DENTAL MATERIALS – DBM
- ORTHODONTICS – ORTH
- PEDO DONTICS and public health – PEDO
- ORAL AND MAXILLO – FACIAL SURGERY – OMFS
- ORAL RADIOLOGY – ORAD
- ORAL MEDICINE – OMED
- PERIODONTOLOGY – PER
- FIXED PROSTHODONTICS – FPD
- OPERATIVE DENTISTRY – OPER
- ENDODONTICS – ENDO
- PROSTHETIC DENTISTRY – PRO

First digit : Theme
Second digit : Faculty objective
Third digit : Department objective

SWOT analysis for research plan

Strength

- **S_1 :** Highly qualified staff members with experience in different fields of dental research.
- **S_2 :** Enrollment continues to increase in graduate programs in different dental disciplines.
- **S_3 :** Land – grant mission with huge number of outpatients and access to higher education.
- **S_4 :** Renowned Dental Faculty among all national and regional dental faculties.
- **S_5 :** Wide array of master's and doctoral program.
- **S_6 :** Strong faculty research that include publications in international journals and presentations at international meetings.
- **S_7 :** Rewarding policy for high quality researches and international publications.

Weakness

- **W_1 :** Lack of research training program for staff members.
- **W_2 :** Lack of support office services offered by qualified staff such as support for writing grants, assessing the validity of the information with enhancement of statistical aspects
- **W_3 :** Underutilization and lack of organization for technology.
- **W_4 :** Lack of data base and inadequate dispersal of information by administration.
- **W_5 :** Lack of financial support for faculty scholarship and increased fees for graduate program may prohibit the recruitment of qualified students.
- **W_6 :** Poor quality of facilities and lack of repair and maintenance.
- **W_7:** Lack of infrastructure including physical (laboratories) and human resources.
- **W_8:** Researches could be publicized in non-peer reviewed journals.
- **W_9:** Inadequate support of students by their supervisors.
- **W_{10}:** Time demands on faculty members owing to workload of teaching, patient service, administrative tasks, professional development and training efforts.
- **W_{11} :** Researchers do not have enough facilities to stay in the faculty for extended hours in case of executing a long-time experiment (e.g. staff rooms, lockers, parking lots, restaurants.....).
- **W_{12} :** Limited access to journals in digital library.

Opportunities

- **O1:** Interdisciplinary research supervision between different research centers.

- **O_2:** Multidisciplinary approach in evaluation of the newly developed natural and synthetic materials, that can be implemented in the dental practice.
- **O_3:** Courses provided by Faculty and leadership development center to faculty researchers.
- **O_4:** Conferences held by different faculties and research centers.
- **O_5:** Highly developed national and international research centers, with potential for co-operation protocols provide access to faculty researchers to the physical resources.
- **O_6:** Recruitment of foreign researchers as a part time job.
- **O_7:** Internationally ranked journal by Cairo University (Journal of Advanced Research).
- **O_8:** Presence of legislation obliging Ph.D. students to publish internationally in indexed journal for promotion to a higher post.
- **O_9:** Submission to projects provided by the ministry of high education.
- **O_{10}:** Establishment of outreach mobile dental unit to assess the community needs for information, education program and for applied research.
- **O_{11}:** Renewal of national accreditation by the National Authority of quality assurance and accreditation in education.
- **O_{12}:** Competition for enrollment among students is strong and likely to increase. This provides an advantage to set up high level of selection criteria for students' enrollment.
- **O_{13}:** Availability of national academic standards of graduate program.
- **O_{14}:** The top priorities of the government's national research is the endemic disease among Egyptian population including periodontal diseases, dental caries,.....
- **O_{15}:** Faculty members are encouraged to attend and present their researches at international congress.
- **O_{16}:** Increasing financial support for researchers by the University.
- **O_{17}:** Ministry of higher education offers scholarship for faculty members based on competitiveness.
- **O_{18}:** Funds of international projects and national bodies (Science and Technology Development Fund).
- **O_{19}:** Establishment of private - public partnership.
- **O_{20}:** Growth of research and graduate programs in the international University Extension.
- **O_{21}:** Wide range of services provided by the Egyptian Knowledge bank (EKB).

Threats

- **T_1:** Competition with the regional rapidly growing universities.
- **T_2:** Dental research is not on top of the priorities of funding agencies.
- **T_3:** Lack of legislation correlating the faculty member performance with the amount of research grants he attains for the faculty.

- **T_4:** Risk of losing prominent faculty members for better opportunities at other national or regional Universities.
- **T_5:** Declining resources and increasing dependence on tuition revenue.
- **T_6:** Increased competition from low-cost providers as costs rise for high quality dental units, machines, devices, instruments and materials.
- **T_7:** Initial investment in infrastructure and equipment, replacement costs; technical support costs, and employee training costs always overwhelm the faculty budget.
- **T_8:** International accreditation requires undoubtedly raised standards in graduate program and research.

TOWS Strategic Alternative Matrix

TWOS analysis helps to get a better understanding of the strategic choices .The combination of strength and opportunities helps to use strength to take advantages of the opportunities (SO). The strength can be used to avoid real and potential threats (ST). The weakness experienced can be overcome by the opportunities (WO). Minimizing the weakness to avoid the threats is concerned with defensive strategies that not to rely on for success (WT).

	External Opportunities	External Threats
Internal Strength	S_1,O_1,O_2,O_5 S_3,O_{10},O_{14} S_1,S_4,S_5,S_6,O_{11} S_2,O_{12},O_{20} S_1,O_{21} S_4, O_5 S_1, O_{14}	S_1,T_1 S_6,T_2 S_7,T_3 S_5,T_5 S_4,T_6 S_2,S_5,T_7 S_1,S_4,S_5,S_6,T_8 S_7,T_4 S_3,T_2
Internal Weakness	W_1,O_3,O_4 W_2,O_5,O_6 W3,W4,O9 W_5,O_{19} W_6,O_9 W_7,O_{16},O_{18},O_{19} W_8,O_7,O_8,O_{15} W_9,O_{13} W_{10},O_3,O_{17} W_{12},O_9	$W_6,W_7,W_{11},W_{12},T_7$ W_1,W_2,W_9,T_4 W_3,W_4,W_5,T_1

Prioritizing and reducing the list of strength to the main distinctive competencies and most debilitating weakness. Strategies are derived from the faculty mission, vision and external opportunities/threats and internal strength/weakness.

	External Opportunities	**External Threats**
	O_1: Interdisciplinary research supervision between different .research centers **O_2:** Multidisciplinary approach in evaluation of the newly developed natural and synthetic materials, that can be implemented in the dental .practice **O_3:** Courses provided by Faculty and leadership development center to faculty .researchers **O_9:** Submission to projects provided by the ministry of .high education **O_{12}:** Competition for enrollment among students is strong and likely to increase. This provides an advantage to set up high level of selection criteria for students' enroll- .ment **O_{13}:** Availability of national academic standards of graduate .program **O_{14}:** The top priorities of the government's national research is the endemic disease among Egyptian population including periodontal diseas- .....,es, dental caries **O_{18}:** Funds of international projects and national bodies (Science and Technology De- .(velopment Fund **O_{20}:** Growth of research and graduate programs in the international University Ex- .tension **O_{21}:** Wide range of services provided by the Egyptian .(Knowledge bank (EKB	**T_1:** Competition with the regional rapidly growing uni- .versities **T_2:** Dental research is not on top of the priorities of funding .agencies **T_4:** Risk of losing prominent faculty members for better opportunities at other national- .al or regional Universities

Internal Strength **S_1:** Highly qualified staff members with experience in different fields of dental research **S_2:** Enrollment continues to increase in graduate programs in different dental disciplines **S_3:** Land – grant mission with huge number of outpatients and access to higher education **S_7:** Rewarding policy for high quality researches and international publications	S_1,O_1,O_2 S_2,O_{12},O_{20} S_1, O_{21} S_1, O_{14}	S_1,T_1 S_7,T_4 S_3, T_2
Internal Weakness **W_6:** Poor quality of facilities and lack of repair and maintenance **W_7:** Lack of infrastructure including physical (laboratories) and human resources **W_9:** Inadequate support of students by their supervisors **W_{10}:** Time demands on faculty members owing to workload of teaching, patient service, administrative tasks, professional development and training efforts	W_6,O_9 W_7, O_{18} W_9,O_{13} W_{10},O_3	

Based on the TWOS recommended strategy is :

- Grow and build
- Hold and maintain
- Harvest and divest

Internal External (IE) Matrix

	Internal assessment			
		Excellent	Average	Weak
External Assessment	Excellent	Grow/Build	**Grow/Build**	Hold/maintain
	Average	Grow/Build	Hold/maintain	Harvest/Divest
	Weak	Hold/maintain	Harvest/Divest	Harvest/Divest

The recommended strategy is to grow / build.

The faculty members have substantial clinical and administrative responsibilities and are committed to teaching and research and it would be beneficial to develop effective research programs in collaboration with research centers to increase their competitiveness when seeking national and international funding for research.

Specific training programs are needed to ensure that early career researchers acquire the skills necessary to achieve success with research and to ensure their publications are submitted to high quality peer reviewed journals.

Despite success in recent years in growing students number and publications, the change in the external environment poses a challenge that face the faculty. At a national level the faculty must be prepared for renewal of accreditation by the national authority of quality assurance and accreditation for education (NAQAAE). The faculty must also continue to address the government research priorities and must identify Cairo University research plans. Areas of research strength and opportunities relative to national standards must be clearly identified with emphasis on new research areas that will be important in the next decade.

Faculty research activities could be funded from diverse sources and the income it generates would make a substantial contribution in research income. Faculty must underpin and grow funding for the provision of infrastructure support directly to researchers.

Action plan of research development

Strategic Objective 1: Increase the research productivity of the faculty with emphasis on internalization			
Strategy 1: Submission to projects provided by the ministry of high education for financial support for the quality assurance and accreditation process to ensure high quality of facilities and regular repair and maintenance (W6, O9)			
Goal	**Action**	**Responsibility**	**Completion date**
Ensure that active researchers have infrastructure needed to undertake the research.	1- Review laboratory infrastructure for different disciplines.	Devices and Laboratories committee	September 2018
	2- Establish funding unit to facilitate appropriate infrastructure and space allocation for researchers	Recruitment of active staff, provide the needed training to qualify them and launch the establishment of the fundraising unit	December 2018
Strategy 2: Train researchers to overcome demands on faculty members owing to work load of teaching, patient service, administrative tasks, professional development and training efforts (W10,O3)			
Goal	**Action**	**Responsibility**	**Completion date**
1- Provide training for researchers.	1- Identify training needs and estimate costs of training and reward/recognize/encourage excellent performance. (4 programs/year)	Training center	May 2019 and ongoing
2- Ensure that researchers have the time to undertake research.	2-Establish time schedule with emphasis on research activities	Head of department	October 2018

Strategy 3: Highly qualified staff members with experience in different fields of dental research carry multidisciplinary and Interdisciplinary research supervision between different research centers (S1,O1,O2)			
Goal	**Action**	**Responsibility**	**Completion date**
1-Encourage interdisciplinary research seeking to ensure alignment with national research priorities. 2-Establish a multidisciplinary team and identify area of strength and those potential for development	1-Review and document the extent to which interdisciplinary and inter-faculty research is being undertaken by faculty members and give higher priority in applications seeking financial support from the university to interdisciplinary and multidisciplinary research 2-Undertake a review with other dental faculties documenting areas of research strength and those mapping the national research priorities.	Establish mechanism for motivation of researchers to work interdisciplinary and rewarding best interdisciplinary research Meeting with vice deans for postgraduate studies and research in other dental faculty and identify areas of possible cooperation based on national needs	September 2018 September 2019

Strategy 4: Funds of international projects and national bodies (STDF) to establish the infrastructure including physical (laboratories) and human resources (W7,O18)			
Goal	**Action**	**Responsibility**	**Completion date**
Provide targeted support for attracting major external research income	1-Review all sources of research funding 2- Develop process to better target researchers with relevant information to maximize their chances of success in attracting funding.	Fundraising unit Postgraduate committee	January 2019 and progress September 2019

Performance indicators:

1. Achievement of annual research income
2. Number of publications in peer reviewed journals considering the impact factor
3. Number of staff receiving financial support from local, national or international funding bodies
4. Citation index by each researcher

Strategic Objective 2: Improve the effectiveness of the graduate program			
Strategy 1: The increase in the enrollment in graduate programs in different dental disciplines provides an advantage to set up high level of selection criteria for students' enrollment (S2,O12)			
Goal	**Action**	**Responsibility**	**Completion date**
The number of high caliber postgraduate students commensurate with the available facilities.	1-Review available physical and human resources	Postgraduate studies committee	January 2019
	2-Establish the enrollment plan according to the faculty and community needs.	Postgraduate studies committee	February 2019
	3-Set selection criteria for the enrolled students	Postgraduate studies committee	March 2019
Strategy 2: Enrollment increase in graduate programs inspires the need for the growth of research and graduate programs in the international University Extension (S2,O20)			
Goal	**Action**	**Responsibility**	**Completion date**
Ensure that the number of places in the faculty meets the increase in the enrollment of graduate students	Establishment of the international dental division at Elsheikh Zayed and research center	Dean of the faculty Head of departments Postgraduate committee	May 2020

Strategy 3: Adoption of national academic standards of graduate program that ensure adequate support of students by their supervisors (W9,O13)			
Goal	**Action**	**Responsibility**	**Completion date**
Postgraduate students complete their program on time	1-Develop process to ensure that the program coordinators, academic advisors and supervisors have sufficient time to undertake their role.	Postgraduate committee	November 2018
	2-Develop process to ensure that program coordinator, academic advisor and supervisor activities are appropriately recognized and rewarded by the faculty.	Dean of the faculty	June 2019 and progress annually
	3- Review and regularly update of policy, procedure and existing structured and continuing programs.	Postgraduate committee	September 2019 and progress annually

Performance indicators:

1. Number of academic staff supervising graduates
2. Percentage of students who complete their program within the required time period
3. Nature of work postgraduates undertaken after program completion
4. Performance in postgraduate exit survey

Strategic Objective 3: Establishment of research support center and preparation of distinguished staff in research domain and

Strategy 1: Staff development by training of staff on evidence based dentistry and best practice in research domain through cooperate with EKB to nurture faculty members' knowledge and experience by continuous training on evidence based dentistry and upgrade their research skills (S1, O21)

Goal	Action	Responsibility	Completion date
Upgrade faculty members skills in research domain	Training on evidence based Dentistry	Qualified staff members	September 2018 and progress twice annually
	Training on publication strategy, effective academic writing, publication strategy, statistical analysis, ...	EKB	September 2018 and progress
Provide support for researchers in submitting high quality protocols following ethical regulation and award grants	Establish research support center that integrate: Center for evidence base dentistry (CEBD), Medical biostatistics unit (MBU), research ethics committee/institutional review board (IRB) and Fundraising and grant award unit (FGU)	Faculty council	September 2018

Performance indicators:

1. Number of staff attending the workshop
2. Satisfaction of the attendees
3. Establishment of research support center

Strategic Objective 4: Enhancement of cooperation with national and international parties

Strategy 1: Make benefit of faculty members who have high H index and are well known as international speakers to develop memorandum of understanding with regional and international Universities and research centers (S4, O5)

Goal	Action	Responsibility	Completion date
Exchange of experience and resources aiming to support innovation	Identify collaborations research faculty members have with overseas universities and consider establishment of memorandum of understanding (MOUs)	Recruitment of staff members who have international relations aiming to develop MOU with different international parties	January 2020

Key performance indicator:

Number of effective/productive collaborations established

Strategic objective 5: Update research plan to be aligned with community needs

Strategy 1: The huge number of outpatients and convoys to many governorate support the feasibility of studying the community needs to direct the research for the best interest and welfare of patient health (S3, T2)

Goal	Action	Responsibility	Completion date
Address the most common health problem from the patients perspectives	Design a study to identify the community needs	Community service committee	September 2018

Strategy 2: Distinguished staff members focus on the top priorities of the government's national research is the endemic disease among Egyptian population (S1, O14)

Goal	Action	Responsibility	Completion date
Direct research activity to fulfill the community needs for the welfare of dental patients	Prepare the research plan 2018-2023 with main domain for epidemiologic/ preventive studies	Scientific departments and postgraduate and research committee	November 2018

Key performance indicator:

1. Updated research plan that fulfill the community needs
2. Sound data for policy makers
3. Decreased prevalence of oral and dental diseases
4. Cost effective innovative therapy and techniques in dental field

RESEARCH PLAN 2018-2023

Over **90** Years of Experience

Faculty of Dentistry
Cairo University