



FACULTY OF
PHARMACY

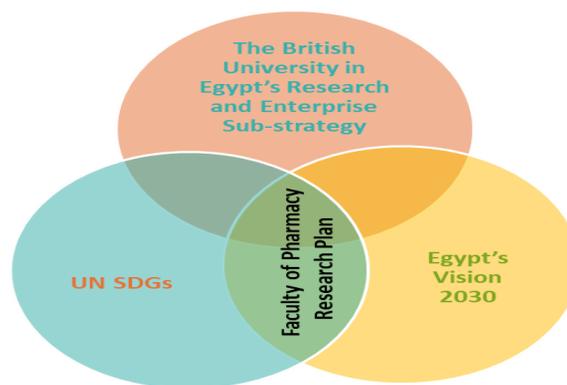


Research plan (2024/2028)

Faculty of Pharmacy the British University in Egypt

Introduction

The Faculty of Pharmacy at The British University in Egypt is deeply committed to impactful research that addresses real-world health challenges, exemplified by its focus on developing new drugs and improving healthcare access. This commitment is reflected in its comprehensive research program, which spans the entire drug development cycle, from initial design to optimized delivery. The faculty actively contributes to the University's broader Research and Enterprise Sub-strategy by fostering a collaborative environment, engaging in transdisciplinary research, and prioritizing ethical research practices. Notably, the Faculty of Pharmacy research plan (2024-2028) builds upon Egypt's Vision 2030 and focuses on contributing to the United Nation's Sustainable Development Goal 3 (SDG3) – ensuring healthy lives and promoting well-being for all. Through cutting-edge research in areas like drug delivery, pharmacogenomics, and natural product discovery, the faculty directly addresses globally significant health issues and supports Egypt's national needs, ultimately aiming to strengthen the pharmaceutical industry and sustainably utilize natural resources, thereby contributing to the university's goal of fostering sustainable prosperity.



The figure illustrates the alignment of the faculty's scientific research plan with the University's plan, Egypt's Vision 2030, and the Sustainable Development Goals

The aim of the Microbiology and pharmacognosy department is to recognize the burden of chronic and epidemic diseases on developing countries like Egypt, this department's research aligns with UN and national goals to find innovative solutions. Through multidisciplinary collaboration, they aim to discover new, safe natural and antimicrobial products for diseases like hepatitis, cancer, and diabetes. Utilizing advanced techniques, they explore natural products, improve existing antimicrobials, and study bacterial strains for potential benefits.

The pharmaceutical chemistry research group focuses on two main areas: drug discovery and development. For drug discovery, they design and synthesize new biologically active compounds using computer software and develop novel analytical methods such as spectroscopic and electrochemical techniques. These methods help identify and analyze potential drugs, diagnose diseases, and separate and analyze substances in various matrices. For drug development, they collaborate with other research groups in pharmacognosy, pharmacology, and biochemistry & microbiology to evaluate the biological effectiveness of these new compounds for potential use in treating and diagnosing diseases.

At its heart, the Pharmacology & Biochemistry plan rotates around finding new diagnostic tools and treatment options for different pathologies such as cancer, endocrine and hereditary disorders. From the screening of new chemical structures and natural compounds to repositioning of FDA approved medications, new molecular pathways will be examined, and new drug formulations will be assayed. Different drug-delivery options including nano-systems will be evaluated as well as the exploration of different therapeutic modalities such as stem cells. Special focus will be directed to genetic and epigenetic-based approaches to examine various disorders and come up with novel biomarkers and gene-based therapies. An in-depth look at nutrition-related health issues will also be given.

The Pharmaceutics & Pharmaceutical Technology Department research is based on resolving most of the poor therapeutic effect of some pharmaceutical agents, side by side with fostering the concept of co-loading, in addition to green formulation. This could be achieved by maximizing the absorption of the drug from all parts of the body as well as using different advanced nanotechnology approaches, which contributes to the improvement of bioavailability with a focus on absorption through the digestive system. Moreover, transdermal, topical ophthalmic and intranasal routes of administration via the skin and eye and nose. This aims to reduce the required treatment doses, which consequently decreases side effects and improves the patient's quality of life. Furthermore, it seeks to promote the pharmaceutical industry, a key pillar in advancing health care through the development and evaluation of modern drug delivery systems. It also aims to establish strategic partnerships between academia, industry, specialists, and other institutions to promote sustainability and integration within both the public and private health care systems.

The Clinical Pharmacy Practice Department research domains encompass a wide range of topics, including the development of new treatments and prevention methods for diseases, the study of cancer in various organs, and the development of new therapies. Additionally, the research domains also include the investigation of drug side effects and complications, and the study of health and Pharmacoeconomics. Furthermore, the research domains highlight the importance of technological applications in the medical field, such as the development of new information technology systems for integrated treatment and the exploration of new genetic and epigenetic factors in diagnosis and treatment. In addition, the research domains reflect the diverse and comprehensive nature of the research being conducted to improve healthcare systems, enhance diagnostic and therapeutic approaches, and promote overall well-being.

Collaborations between different departments will contribute to develop new treatments and prevention strategies, ultimately improving public health in Egypt. The faculty's research will generate publications and academic theses, fostering knowledge, and progress towards a healthier future.

Faculty Research Objectives

1. Study of cancer in various organs as well as other diseases including new diagnostic markers, molecular pathways, therapeutic options, and development of new therapies.
2. Investigate the pharmacological, biochemical and/or antimicrobial activity of chemical entities.
3. Study the potential applications of nano-systems and other drug delivery systems in diagnosis and treatment of cancer and other various diseases.
4. Molecular biology studies for health and environmental benefits.
5. Implementing modern immunological methods for vaccine design to combat diseases.
6. Application of new analytical techniques for the analysis of different compounds in different matrices.
7. Computer aided drug design and synthesis of classes of novel compounds and screening for active novel natural compounds with diverse biological effects, of beneficial use in the treatment of common diseases among Egyptians.
8. Acquiring a share of clinical trials research for the pharmaceutical industry in the Middle East and contributing to increasing Egypt's Exports of medicine.
9. Application of nanotechnology and other methods in the design of controlled drug delivery systems for enhancing the efficacy of drugs used to treat endemic and chronic diseases.
10. Evaluate new genetic and epigenetic factors/markers in diagnosis and treatment of various diseases.
- 11- Develop new therapeutic modalities such stem cells and gene therapy.

- 12- Investigate the impact of nutrition on health and disease.
- 13- Behavioral & Clinical Pharmacology-Biopsychology.
- 14- Acquiring drugs from naturally sustainable sources as alternative medications.
- 15- Health and Pharmacoeconomic studies.

Faculty Research Objectives vs Departmental Research domains

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
<p>1. Study of cancer in various organs as well as other diseases including new diagnostic markers, molecular pathways, therapeutic options, and development of new therapies.</p>	<ol style="list-style-type: none"> 1. Study of different types of cancer including the underlying molecular mechanisms of carcinogenesis, cancer stem cells, new diagnostic markers, development of new therapies including repurposed drugs, herbal medicines, chemotherapeutic agents and nanoparticles-based therapies and study of the resistance to current therapies. 2. Investigating new drugs, new side effects and complications of chemotherapy. 3. Predicting drug side effects of drugs and studying how to avoid them. 	<p>Pharmacology & Biochemistry + Clinical Pharmacy Practice Departments</p>

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
<p>2. Investigate the pharmacological, biochemical and/or antimicrobial activity of chemical entities.</p>	<ol style="list-style-type: none"> 1. Exploring the potential of natural metabolites from waste as biotherapeutics. 2. The potential of novel chemical entities and natural products to be used as biomedicine. 3. Biological screening of newly isolated compounds from herbal medicinal products, new chemical entities, and repurposed drugs to assess biological activity in vitro and in vivo in various diseases. 4. Assess the pharmacological actions, mechanisms, potential targets and toxicities of chemical entities, new drug formulations and naturally derived compounds including repositioning of FDA approved drugs for treatment of various diseases. 	<p>Pharmacology & Biochemistry + Microbiology & Pharmacognosy Departments.</p>
<p>3. Study the potential applications of nano-systems and other drug delivery systems in diagnosis and treatment of cancer and other various diseases.</p>	<ol style="list-style-type: none"> 1. Study the potential diagnostic and therapeutic applications of nano-systems in various diseases. 2. Nanoparticles platforms in different techniques including green nanotechnology for different drug 	<p>Pharmacology & Biochemistry + Pharmaceutics & Pharmaceutical Technology Departments</p>

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
	<p>delivery systems via different routes of administration.</p> <p>3. Nanoparticles platforms for different drug delivery systems</p>	
<p>4. Molecular biology studies for health and environmental benefits.</p>	<p>1. Conduction of a comprehensive investigation into the biological activity of microorganisms, elucidating their potential benefits in the realms of medical and environmental sciences.</p> <p>2. Functional characterization of genes in standard bacterial strains for the improvement of human health and the environment.</p> <p>3. Metabolomics of primary and secondary metabolites to elucidate their role in biological processes.</p>	<p>Microbiology & Pharmacognosy Department.</p>
<p>5. Implementing modern immunological methods for vaccine design to combat diseases.</p>	<p>1. Application of immunological techniques in disease diagnosis and vaccine development.</p>	<p>Microbiology & Pharmacognosy Department.</p>
<p>6. Application of new analytical techniques for the analysis of different compounds in different matrices.</p>	<p>1. Development of novel spectroscopic and electrochemical analytical methods</p>	<p>Pharmaceutical Chemistry Department.</p>

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
	<p>used for drug discovery, drug analysis and diagnosis of diseases.</p> <p>2. Applying new chromatographic methods for separation and analysis of different substances and drugs in different matrices.</p>	
<p>7. Computer aided drug design and synthesis of classes of novel compounds and screening for active novel natural compounds with diverse biological effects, of beneficial use in the treatment of common diseases among Egyptians.</p>	<p>1. Design, synthesis, and biological evaluation for a number of biologically active novel compounds, aided with specialized computer software.</p> <p>2. Computer-aided screening of novel natural compounds for biological activity using high-throughput methods.</p>	<p>Pharmaceutical Chemistry + Microbiology & Pharmacognosy Departments.</p>
<p>8. Acquiring a share of clinical trials research for the pharmaceutical industry in the Middle East and contributing to increasing Egypt's Exports of medicine.</p>	<p>1. Studying the clinical Pharmacokinetics of different drugs and dosage forms</p>	<p>Clinical Pharmacy Practice Department</p>
<p>9. Application of nanotechnology and other methods in the design of controlled drug delivery systems for enhancing the efficacy of drugs used to treat endemic and chronic diseases.</p>	<p>1. Use of advanced delivery systems to enhance the efficacy of natural extracts.</p> <p>2. Enhancement of Transdermal/topical application of various drug</p>	<p>Pharmaceutics and Pharmaceutical Technology + Microbiology & Pharmacognosy Departments.</p>

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
	<p>3. Implementation of nano-delivery systems to enhance antimicrobial efficacy of natural and synthetic products and overcome microbial resistance, contributing to improved treatment outcomes.</p> <p>4. Enhancement of therapeutic efficacy of plant extracts by developing novel dosage forms that improve their bioavailability, stability, and delivery.</p>	
<p>10. Evaluate new genetic and epigenetic factors/markers in diagnosis and treatment of various diseases.</p>	<p>1. Exploring the genetic background, variants and biomarkers of various disorders including hereditary and endocrine diseases using molecular biology tools and next generation sequencing.</p> <p>2. Investigating cellular cross talks and cell signaling pathways using molecular, proteomic, and bioinformatics tools in health and disease.</p> <p>3. Studying genetic polymorphisms in different diseases.</p>	<p>Pharmacology & Biochemistry + Clinical Pharmacy Practice Departments</p>

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
11. Develop new therapeutic modalities such stem cells and gene therapy.	1. Study of various types of stem cells, stem cells derived exosomes and genetically modified stem cells and their applications in various diseases.	Pharmacology & Biochemistry Department.
12. Investigate the impact of nutrition in health and disease.	1. Investigate the preclinical /clinical impact of nutrition such as vitamin deficiencies in health and disease.	Pharmacology & Biochemistry Department.
13. Behavioral & Clinical Pharmacology-Biopsychology.	1. Addiction behavior in Egyptian population. 2. Investigating the pharmacological effects of different drugs in different diseases. 3. Knowledge, attitude, and practice surveys.	Clinical Pharmacy Practice Department.
14. Acquiring drugs from naturally sustainable sources as alternative medications.	1. Applications of different chromatographic techniques to develop new bio-guided assays for the discovery of drugs from natural sources. 2. Investigation of the potential of secondary metabolites from different plants to treat chronic and epidemic diseases in Egypt using different	Microbiology & Pharmacognosy Department.

Faculty Research Objectives	Departmental Research Domains	Academic Department(s) in charge
	techniques including their isolation and identification.	
15. Health and Pharmacoeconomic studies.	1. Practice of evidence- based health care studies.	Clinical Pharmacy Practice Department.

Faculty Research Objectives vs University Health Cluster Objectives

University Health Cluster Objectives	Faculty Research Objectives
<ul style="list-style-type: none"> • Developing new medicines and treatments. • Improving access to healthcare. • Promoting healthy living. 	1. Study of cancer in various organs as well as other diseases including new diagnostic markers, molecular pathways, therapeutic options, and development of new therapies.
	2. Investigate the pharmacological, biochemical and/or antimicrobial activity of chemical entities.
	3. Study the potential applications of nano-systems and other drug delivery systems in diagnosis and treatment of cancer and other various diseases.

University Health Cluster Objectives	Faculty Research Objectives
	4. Molecular biology studies for health and environmental benefits.
	5. Implementing modern immunological methods for vaccine design to combat diseases
	6. Application of new analytical techniques for the analysis of different compounds in different matrices.
	7. Computer aided drug design and synthesis of classes of novel compounds and screening for active novel natural compounds with diverse biological effects, of beneficial use in the treatment of common diseases among Egyptians.
	8. Acquiring a share of clinical trials research for the pharmaceutical industry in the Middle East and contributing to increasing Egypt's Exports of medicine.
	9. Application of nanotechnology and other methods in the design of controlled drug delivery systems for enhancing the efficacy of drugs used to treat endemic and chronic diseases.
	10. Evaluate new genetic and epigenetic factors/markers in diagnosis and treatment of various diseases.

University Health Cluster Objectives	Faculty Research Objectives
	11. Develop new therapeutic modalities such stem cells and gene therapy.
	12. Investigate the impact of nutrition in health and disease.
	13. Behavioral & Clinical Pharmacology-Biopsychology.
	14. Acquiring drugs from naturally sustainable sources as alternative medications.
	15. Health and Pharmacoeconomic studies.

Faculty Research Objectives vs National Vision 2015-2030

الأهداف الرئيسية لمحور الصحة بالاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	المشروعات البحثية للاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	Faculty Research Objectives
	1. اكتشاف الأدوية. 2. التشخيص المبكر للأورام السرطانية.	1. Study of cancer in various organs as well as other diseases including new diagnostic markers, molecular pathways, therapeutic options, and development of new therapies.

الأهداف الرئيسية لمحور الصحة بالاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	المشروعات البحثية للاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	Faculty Research Objectives
*تطوير المنظومة الصحية واستحداث طرق جديدة للعلاج والوقاية من الأمراض.	3. تطوير علاج لسرطان الثدي والكبد. 4. التخليق الكيميائي للخامات الدوائية.	2. Investigate the pharmacological, biochemical and/or antimicrobial activity of chemical entities.
	5. استنباط أمصال للوقاية من الالتهاب الكبدي الوبائي.	3. Study the potential applications of nano-systems and other drug delivery systems in diagnosis and treatment of cancer and other various diseases.
	6. أبحاث الخلايا الجذعية.	4. Molecular biology studies for health and environmental benefits.
	7. لاستحواذ على نسبة من بحوث التجارب الإكلينيكية لصناعة الدواء في الشرق الأوسط. والمساهمة في زيادة صادرات مصر من الدواء إلى دول الشرق	5. Implementing modern immunological methods for vaccine design to combat diseases
	8. الأوسط وأفريقيا.	6. Application of new analytical techniques for the analysis of different compounds in different matrices.
		7. Computer aided drug design and synthesis of classes of novel compounds and screening for active novel natural compounds with diverse biological

الأهداف الرئيسية لمحور الصحة بالاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	المشروعات البحثية للاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	Faculty Research Objectives
		<p>effects, of beneficial use in the treatment of common diseases among Egyptians.</p> <p>8. Acquiring a share of clinical trials research for the pharmaceutical industry in the Middle East and contributing to increasing Egypt's Exports of medicine.</p>
*اكتشاف تطبيقات تكنولوجيا حديثة في المجال الطبي التشخيصي والعلاجي.	<p>1. توطين تطبيقات النانو تكنولوجي في صناعة الدواء 2. الأدوية الموجهة</p> <p>3. تطوير تكنولوجيا النانو لتشخيص وعلاج السرطان. 4. تصحيح الجينوم.</p> <p>5. دراسات لتطوير نظم تكنولوجيا المعلومات للعلاج المتكامل بأحدث النظم الطبية.</p>	<p>9. Application of nanotechnology and other methods in the design of controlled drug delivery systems for enhancing the efficacy of drugs used to treat endemic and chronic diseases.</p> <p>10. Evaluate new genetic and epigenetic factors/markers in diagnosis and treatment of various diseases.</p> <p>11. Develop new therapeutic modalities such stem cells and gene therapy.</p> <p>12. Investigate the impact of nutrition in health and disease.</p> <p>13. Behavioral & Clinical Pharmacology-Biopsychology.</p>
* تعميق وتقنين بحوث الطب البديل.	1. استخلاص الخامات الدوائية من المصادر الطبيعية.	14. Acquiring drugs from naturally sustainable sources as alternative medications.

الأهداف الرئيسية لمحور الصحة بالاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	المشروعات البحثية للاستراتيجية القومية للعلوم والتكنولوجيا والابتكار (2015-2030)	Faculty Research Objectives
*الارتقاء بالوعي الصحي (بشكل عام ولدى فئات مستهدفة) ، وخاصة دراسات الصحة النفسية والبيئية والاقتصاد الصحي، ودور المنظومة الرياضية.		15. Health and Pharmacoeconomic studies.

Faculty Research Objectives vs SDGs

SDGs (3- Ensure healthy lives and promote well-being for all at all ages)	Faculty Research Objectives
3.4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	1. Study of cancer in various organs as well as other diseases including new diagnostic markers, molecular pathways, therapeutic options and development of new therapies.
3.3. By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. 3.4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	2. Investigate the pharmacological, biochemical and/or antimicrobial activity of chemical entities.
3.4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	3. Develop new therapeutic modalities such stem cells and gene therapy.
3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.	4. Investigate the impact of nutrition in health and disease.
	5. Application of new analytical techniques for the analysis of different compounds in different matrices.

SDGs (3- Ensure healthy lives and promote well-being for all at all ages)	Faculty Research Objectives
	6. Molecular biology studies for health and environmental benefits.
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.	7. Implementing modern immunological methods for vaccine design to combat diseases
	8. Computer aided drug design and synthesis of classes of novel compounds and screening for active novel natural compounds with diverse biological effects, of beneficial use in the treatment of common diseases among Egyptians.
	9. Acquiring a share of clinical trials research for the pharmaceutical industry in the Middle East and contributing to increasing Egypt's Exports of medicine.
3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being. 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol. 3.8.1 Coverage of essential health services	10. Study the potential applications of nano-systems and other drug delivery systems in diagnosis and treatment of cancer and other various diseases.

SDGs (3- Ensure healthy lives and promote well-being for all at all ages)	Faculty Research Objectives
<p>3.b.2 Total net official development assistance to medical research and basic health sectors.</p> <p>3.b.3 Proportion of health facilities that have a core set of relevant essential medicines available and affordable on a sustainable basis.</p>	
<p>3.b Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all.</p>	<p>11. Application of nanotechnology and other methods in the design of controlled drug delivery systems for enhancing the efficacy of drugs used to treat endemic and chronic diseases.</p>
<p>3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases.</p> <p>.3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.</p>	<p>12. Evaluate new genetic and epigenetic factors/markers in diagnosis and treatment of various diseases.</p>

SDGs (3- Ensure healthy lives and promote well-being for all at all ages)	Faculty Research Objectives
<p>3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.</p> <p>3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.</p>	<p>13. Behavioral & Clinical Pharmacology-Biopsychology</p>
<p>3.3 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases</p>	<p>14. Acquiring drugs from naturally sustainable sources as alternative medications.</p>
<p>3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.</p>	<p>15. Health and Pharmacoeconomic studies.</p>

Faculty action plan and the expected research outcomes

Academic Department (s) in charge	Research domains	2024			2025				2026			2027				2028		
		MSc.	PhD	Articles	MSc.	PhD	Articles	Patent	MSc.	PhD	Articles	MSc.	PhD	Articles	Patent	MSc.	PhD	Articles
Pharmacology & Biochemistry Department	1. Study of different types of cancer including the underlying molecular mechanisms of carcinogenesis, cancer stem cells, new diagnostic markers, development of new therapies including repurposed drugs, herbal medicines, chemotherapeutic agents and nanoparticles-based therapies and study of the resistance to current therapies.	4		6	1	1	6			1	7		1	6			1	6
	2. Biological screening of newly	1		4	1	1	4				2			4				2

	isolated compounds from herbal medicinal products, new chemical entities, and repurposed drugs to assess biological activity in vitro and in vivo in various diseases.																
Pharmacology & Biochemistry Department	3. Assess the pharmacological actions, mechanisms, potential targets and toxicities of chemical entities, new drug formulations and naturally derived compounds including repositioning of FDA approved drugs for treatment of various diseases.	2		4	1		5				5			3			4
	4. Study the potential diagnostic and therapeutic applications of			4			1	1						1	1		2

	nano-systems in various diseases.																
	5. Exploring the genetic background, variants and biomarkers of various disorders including hereditary and endocrine diseases using molecular biology tools and next generation sequencing.	1		4		5				4			4				3
Pharmacology & Biochemistry Department	6. Investigating cellular cross talks and cell signaling pathways using molecular, proteomic, and bioinformatics tools in health and disease.	1		1		1				1			1				2
	7. Study of various types of stem cells, stem cells derived exosomes and genetically modified stem cells and their			2		1	2						1			1	1

	applications in various diseases.																	
	8. Investigate the preclinical /clinical impact of nutrition such as vitamin deficiencies in health and disease			2						1							1	
Pharmaceutical Chemistry Department	1. Design, synthesis, and biological evaluation for a number of biologically active novel compounds, aided with specialized computer software.	1		4	1		4		1		5	2		5		1	1	4
	2. Development of novel spectroscopic and electrochemical analytical methods used for drug discovery, drug analysis and diagnosis of diseases.	2		3		1	3		1		3	1	1	4		1		4

	3. Applying new chromatographic methods for separation and analysis of different substances and drugs in different matrices.																		
Microbiology & Pharmacognosy + Pharmaceutics & Pharmaceutical Technology Department	Implementation of nano-delivery systems to enhance antimicrobial agents' efficacy and overcome microbial resistance, contributing to improved treatment outcomes.										1	1			1				
Microbiology & Pharmacognosy Department	Conduction of a comprehensive investigation into the biological activity of microorganisms, elucidating their potential benefits in the realms of										1							1	

	medical and environmental sciences.																	
	Functional characterization of genes in standard bacterial strains for the improvement of human health and the environment.			1			1						1					
Pharmacognosy	Metabolomics of primary and secondary metabolites to elucidate their role in biological processes.			2	1													
Microbiology	Application of immunological techniques in disease diagnosis and vaccine development.												1			1		
Pharmacognosy	Exploring the potential of natural metabolites from waste as biotherapeutics.			2					1									
	Computer-aided screening of novel			1									1					

	natural compounds for biological activity using high-throughput methods.																	
	The potential of novel chemical entities and natural products to be used as biomedicine.			1			1				1							
	Enhancement of therapeutic efficacy of plant extracts by developing novel dosage forms that improve their bioavailability, stability, and delivery.						1											
Pharmacognosy	Applications of different chromatographic techniques to develop new bio-guided assays for the discovery of drugs from natural sources.			1	1	1	1											3
	Investigation of the potential of			2	1						1	1						

	secondary metabolites from different plants to treat chronic diseases in Egypt using different techniques including their isolation and identification.																	
Pharmaceutics and Pharmaceutical Technology Department	1. Use of advanced delivery systems to enhance the efficacy of natural extracts.			4			2											1
	2. Enhancement of Transdermal/topical application of various drug.	1		3			1			1	1			1				2
	3. Study the potential application of nano-systems in cancer therapy as well as other diseases.												1	1				1
	4. Nanoparticles platforms for different drug delivery systems.						1		1	1	4			2				3

	5. Nanoparticles platforms in different techniques including green nanotechnology for different drug delivery systems via different routes of administration.	1		3		2	3				1			1			
Clinical Pharmacy Practice Department	Investigating new drugs, new side effects and complications of chemotherapy.			1			1				1			1			1
	Predicting drug side effects of drugs and studying how to avoid them.			1			1				1			1			1
	Studying genetic polymorphisms in different diseases				1									1			
	Addiction behavior in Egyptian population.			1													
	Investigating the pharmacological effects of different drugs in different diseases.						1									1	

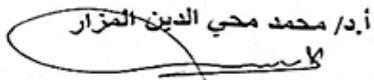
	Knowledge, attitude, and practice surveys							1					1						
	Practice of evidence- based health care studies.												1			1			
	Studying the clinical Pharmacokinetics of different drugs and dosage forms															1			1

Sources of Funding:

- The Budget of the Drug Research and Development Group (DRD-G).
- Research Grants from external Resources such as Science and Technology Development Funds (STDF) and Academy of Scientific Research and Technology (ASRT) Grants.
- University Funding for Young Investigator Research (YIRG) Grants.
- University Funding for Publication Fees according to the specified rules by university administration.
- University Funding of International Conference Grants.
- Researchers self-funding.
- Various scientific awards.
- University Funding for the animal house.
- University Funding for the tissue culture unit.

عميد الكلية

أ.د/ محمد محي الدين المزار



رئيس فريق معيار البحث العلمي
د/ دينا ندا





FACULTY OF PHARMACY