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# Essentials of Pharmacokinetics 药代动力学要论

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| 开课学院College | College of Pharmacy 药学院 |
| 任课教师Instructor’sInformation | 姓名Name | Aaron M. Mohs | 性别Gender | Male |
| 国籍Nationality | USA | 邮箱地址Email | aaron.mohs@unmc.edu |
| 职称/职务Title | Assistant Professor | 最终学位Degree | Ph.D. |
| 任职单位Work Place | University of Nebraska Medical Center |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Essentials of Pharmacokinetics |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学时Class Hour | 24 |
| 授课时间Lecture Schedule | July 9th- 16th | 考核方式Assessment Method | Exams, homework |
| 任课教师简介Resume(Brief) | Dr. Aaron M. Mohs, PhD,is an assistant professor of Pharmaceutical Sciences at the University of Nebraska Medical Center. He is also a member of the Fred and Pamela Buffett Cancer Center and the Center for Drug Delivery and Nanotechnology and the at UNMC. Dr. Mohs has a broad interest in nanotechnology and its use for image-guided procedures, drug delivery, and biosensing. Dr. Mohs received a B.A. in Chemistry from St. John's University (Collegeville, MN) in 2002. He then joined the lab of Prof. Zheng-Rong Lu at the University of Utah and received his Ph.D. in Pharmaceutics and Pharmaceutical Chemistry in 2006. His dissertation research was entitled, “Biodegradable Macromolecular Contrast Agents for MagneticResonance Imaging.” Subsequently, Dr. Mohs joined the lab of Dr. ShumingNie in the Department of Biomedical Engineering at Emory-Georgia Tech. The focus of Dr. Mohs’s postdoc research was on the development of fluorescence contrast agents and instrumentation for intraoperative imaging. Dr. Mohs established his independent career in the Department of Biomedical Engineering at Wake Forest University Health Sciences. In 2015, Dr. Mohs moved his lab to the Department of Pharmaceutical Sciences at the University of Nebraska Medical Center, where his research is devoted to three primary projects: (1) Develop fluorescent nanoparticles based on hyaluronic acid that highlight cancerous tissue image-guided tumor surgery, (2) Develop novel biosensing probes, and (3) Develop nanoparticle formulations of fatty acid synthase inhibitors for anticancer therapy. Dr. Mohs’s research has been continuously funded by the U.S. National Institutes of Health since 2010. He currently is the principle investigator on grants from the National Cancer Institute and the National Institute of Biomedical Imaging and Bioengineering. Additionally he serves as principle investigator of grants from the Nebraska Research Initiative and the Nebraska Department of Health and Human Services. His research has been published in Nature Nanotechnology, Advanced Drug Delivery Reviews, Theranostics, ActaBiomaterialia, Molecular Pharmaceutics, Bioconjugate Chemistry, among others. Dr. Mohs has presented his group’s research internationally, including Nanobio China 2016 (Nanjing), China Pharmaceutical University, World Biomaterials Congress (Montreal, Canada), and the International Society for Magnetic Resonance in Medicine (Kyoto, Japan). Dr. Mohs also has an active teaching role in the University of Nebraska Medical Center College of Pharmacy. He routinely lectures on compartment and noncompartment pharmacokinetics, modified-release PK, PK-PD relationships, micromeritics, and other related areas to pharmaceutical sciences.../../../../Pictures/Photos%20Library.photoslibrary/Masters/2016/10/21/20161021-043604/IMG_3175.JPG*Dr. Mohs at China Pharmaceutical University in October 2016.*  |
| 课程简介（中英文）Course Description | **Course Purpose:** By conducting the classroom instruction and discussion in English, the course will improve the ability of the students to communicate in English language about pharmaceutical sciences and to critically assess presented evidence.**Course Objective:**The **objective** of this course is to, in English, introduce biological and physico-chemical factors that control the blood concentrations of pharmaceuticals and present the theoretical and practical methods to pharmacokinetics and pharmacodynamics. **Course Description:** This course is based on principles of compartment and noncompartment pharmacokinetic analysis. This will include understanding zero and first-order equations, use of these equations to describe compartments. Alternatively, we will study noncompartment models through use of area-under the curve measurements. The advantages and disadvantages and limitations will be examined. To give contextual knowledge for deeper of understanding of the PK parameters calculated by these methods, the course will begin with an overview of absorption, distribution, metabolism, and elimination. The combination of ADME and PK will allow us to introduce advanced pharmaceutics concepts, including pharmacodynamics, controlled release PK, and in vitro in vivo extrapolation. We will mostly consider the cases of small molecule therapeutics, but the concepts from this course are fundamental to cutting-edge research hotspots, like gene and protein delivery or polymer-conjugated anticancer therapeutics, for example. This course is taught in English as a whole, so as to train students of pharmacy for academic English communication and writing. |
| 教学日历Syllabus | The course **teaches** key physicochemical and biological principles that control drug absorption, distribution, metabolism, and elimination (ADME). These factors determine that blood concentration of a pharmaceutical. The theoretical and practical use of mathematical models will then be applied to the time dependent blood concentration to yield important parameters, such as half-life, distribution volume, and elimination rate. Advanced topics will include modified release pharmacokinetics, pharmacokinetic-pharmacodynamic relationships, and in vitro in vivo extrapolation. Knowledge obtained in this course is fundamental for the students whose research is focused in pharmaceutics, preformulation studies, novel drug delivery systems, and pharmacokinetics/pharmacodynamics. The course will also provide fundamental basis to the students to help them in their current research but also prepare them for career in academia and pharmaceutical industries. The main **method** of instruction will be formal lectures. Other instructional methods will include group discussions, assigned readings, problem sets, written assignments, literature reviews and oral presentations.**Curriculum Schedule**1. Introduction to absorption, distribution, metabolism, elimination, and Drug Delivery (4)
2. Rate Parameters (2)
3. Pharmacokinetic Concepts and Approaches (1)
4. Compartment Models (4)
5. Noncompartment Models (2)
6. Modified Release PK (2)
7. In vitro in vivo PK (2)
8. PK-PD Relationships (2)

9. Group Projects (5)**Assessment and Grading Methods:**1. **Three** examinations will be given, including a final exam. The final course grade will be based on the **average** of the three examinations. 2. The scoring for each examination will be on a *percentile* basis. Each student’s percentile score reflects a comparison with the **average of the top three scores** on each exam.3. Exams are limited to course use and will not be returned. Any unapproved copying or distributing of material or content will be considered an act inconsistent with the CPU Honor Code and Academic Honesty Policy and will be handled as such. 4. Following examination students can schedule an appointment to review their tests during office hours within **one week** from the time the grades are posted. **No grades** will be altered after that time.5. The student’s final course grade will be assigned based on the **average** of their scores on the three examinations, in-class participation, and assigned homework according to the following percentile score distribution.The following grading scheme will be used: A+ 95% +A 90 – 94%B+ 85 – 89%B 80 – 84%C+ 75 – 79% C 70 – 74%F < 70% |
| 排课要求Requirement for Course Arrangement | 24 course hours totally for 4 days between July 9th- 16th |
| 选修要求Requirement for Enrolled Students  | (Grade,Major, GPA, Language, and Prerequisite Requirement)The students should1. .Finished fundamental course including Organic Chemistry, Physical Chemistry.
2. Passed CET-4 ( College English Test)
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# Health Care and Disease Prevention 医疗与疾病预防

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| 开课学院College |   The School of Basic Medical Sciences and Clinical Pharmacy基础医学与临床药学学院 |
| 任课教师Instructor’sInformation | 姓名Name | Allison Dering-Anderson | 性别Gender | Female |
| 国籍Nationality | USA | 邮箱地址Email | Ally.DeringAnderson@UNMC.edu |
| 职称/职务Title | Clinical Assistant Professor | 最终学位Degree | Doctor of Pharmacy |
| 任职单位Work Place | University of Nebraska Medical Center |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Health Care and Disease Prevention |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学时Class Hour | 24 |
| 授课时间Lecture Schedule | July 9th- 16th | 考核方式Assessment Method | Group Assessment2 Tests |
| 任课教师简介Resume(Brief) | **Teaching Activities:**Dr. Dering-Anderson is the coordinator of the Over-the-Counter Products & Self Care elective. She is also the primary preceptor for a 4th year elective in health policy. She is also the coordinator of the Point of Care Testing Elective, which offers a certificate of completion. Dr. Ally lectures in Pharmacy Law and Ethics, Pharmacotherapy, Pharmacy and Health Care, and Pharmaceutical Care II, all with a focus on community pharmacy. Dr. Ally also teaches the didactic portion of the Pharmacists Immunization Certificate Program for 2nd year students.**Research Activities and Interests:**Dr. Ally is the community pharmacy specialist on faculty and her research focuses on pharmacist services provided in community pharmacy. She is one of the developers of a Point of Care Testing Certificate program, training pharmacists to conduct point of care testing and provide follow-up care. Research into public policy and health laws allowing for pharmacist services in community pharmacies is on going. Dr. Ally is the college’s presenter on the policy issues surrounding the medical use of cannabis.**Dr. Ally Show:**Dr. Ally has been a guest on the 3-Eagles radio show “Problems and Solutions” for over 17 years. This live, call-in radio show is hosted by Cathy Blythe, a 2-time Marconi winner, and broadcast on 9 mid-west radio stations. Information may be found at KFOR website.**Recent Publications:**Akinwale, TP; Adams, AJ; **Dering-Anderson, AM**; Klepser, ME; Pharmacy-based point-of-care testing for infectious diseases: Considerations for the pharmacy curriculum; Currents in Pharmacy Teaching & Learning; Jan- Feb, 2015, volume 7, Issue 1, Pages 131-136Klepser, DG; Corn, CE; Schmidt, M; **Dering-Anderson, AM**; Klepser, ME; Health Care Resource Utilization and Costs for Influenza-like Illness Among Midwestern Health Plan Members; Journal of Managed Care & Specialty Pharmacy; 21(7), 568-573**Dering-Anderson, AM**; Risk Management in Precepting; Advanced Precepting – Pharmacy Library; APhA; posted June 2015**Dering-Anderson, AM**; Doyle, M; How to Safely Prescribe Upper Respiratory Symptom Relief for Hypertensive Patients; Contemporary Clinic; December 2015; 26-27**Dering-Anderson, AM**; Doyle, M; Challenges in the development of pharmacist- based point-of-care tests; Drug Target Review; Volume 2, Issue 4, 2015; 46-48Klepser, ME; Klepser, DG; **Dering-Anderson, AM**; Morse, JA; Smith, JK; Klepser, SA; Effectiveness of a Pharmacist-Physician Collaborative Program to Manage Influenza-like Illness; J Am Pharm Assoc 2016; 56: 14-21Klepser, DG; Klepser, ME; **Dering-Anderson, AM**; Morse, JA; Smith, JK; Klepser, SA; Community pharmacist-physician collaborative streptococcal pharyngitis management program; J Am Pharm Assoc 2016; 56(3): 323-329 |
| 课程简介（中英文）Course Description | This course will cover the ability of pharmacists and other members of the health care team to assist patients in disease prevention activities. Internationally, disease prevention takes on many forms and solves many societal problems. Exposure to the wide variety of contributions made by health care providers, especially pharmacists, in disease prevention increases creative problem solving and enhances basic pathology and population statistics principles.At the completion of this 24-hour course, the student will be able to:* Discuss the role of health care, with an emphasis on pharmacy, in disease prevention;
* Review pharmacist disease prevention activities around the world;
* Explore vaccinations policies and variations internationally
 |
| 教学日历Syllabus | **Course Outline**: (lecture, class discussion and group problem solving)* Discuss the role of pharmacists and other health care professionals in disease prevention

Public health – sanitation, community challengesSurveillanceResearchPersonal safetyHand washingHygiene practicesBlood borne pathogensSafety equipmentPatient understanding* Review pharmacist disease prevention activities around the world

Nicotine cessationAntimicrobial Stewardship – drug resistant infectionsDisease screening and early interventionsAnticoagulation and blood glucose managementDrug abuse and misuse* Explore vaccination policies and differences internationally

Commonly used vaccinesChinaCubaGreat BritainIndiaUnited StatesVaccination challengesVaccine stabilityVaccine supplyFormulation predictionsAnti-vaccine viewsFuture needs in vaccination |
| 选修要求Requirement for Enrolled Students  | I only speak English – basic understanding of English will be helpfulAll slides and tests will be written in EnglishAny student interested in health professions, especially pharmacy will be appropriate for this classPrerequisites – Physiology |

# Membrane Transport and Pharmacokinetics 跨膜运输与药代动力学

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| 开课学院College | 基础医学与临床药学学院 |
| 任课教师Instructor’sInformation | 姓 名Name | Ikumi Tamai |  |
| 性 别Gender | 男 |
| 国 籍Nationality | 日本 |
| 职称/职务Title | 教授 | 邮箱地址Email | tamai@p.kanazawa-u.ac.jp |
| 最终学位Degree | 博士 | 任职单位Work Place | 日本金泽大学 |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Membrane Transport and Pharmacokinetics |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 16 |
| 授课时间Lecture Schedule | 7.12-7.16 | 考核方式Assessment Method | 书面作业50%，演讲50% |
| 任课教师简介Resume(Brief) | Ikumi Tamai教授于1988年毕业于日本东京大学，获得药学博士学位，1989至1991年在美国芝加哥大学和密西根大学从事博士后研究。1992年起工作于金泽大学、东京理工大学药学院，目前任金泽大学药物跨膜转运及药物代谢研究室主任，主要研究方向为药物代谢动力学及药物转运体。曾任日本药动学会《Drug Metabolism & Pharmacokinetics》杂志主编，现任《Biopharmaceutics & Drug Disposition》副主编，同时为《Drug Metabolism & Disposition》、《Molecular Pharmaceutics》等四个国际知名杂志的编委。 |
| 课程简介（中英文）Course Description | 本课程主要将介绍药物代谢动力学以及膜转运体在生理上、药物代谢、药物治疗以及新药开发中的重要作用。课程将围绕药物代谢动力学和膜转运体的基本概念，利用各种案例阐明OATP, URAT等转运体的在药物相互作用、食物与药物相互作用、以及内源性物质转运中重要性。通过课程的学习，学生可掌握药物代谢动力学的基础知识，同时对药物转运体的作用有基本的了解。This class mainly deals with the bases of pharmacokinetics, membrane transport and importance of membrane transporters in drug absorption and disposition to understand pharmacokinetic properties of drugs, which should be important in drug development and pharmacotherapy. In addition, importance of membrane transporters for nutrients and physiological compounds are described, including urate and carnitine. More practically, classification of membrane transport process and transporter molecules are explained. Pharmacokinetic relevance of transporters are described. Transporter-based regulations of physiological compounds such as uric acid mainly and carnitine optionally are described. In addition, the mechanisms for altered serum uric acid levels by clinically used drugs are explained that are important to maintain normal serum uric acid level. Through this course, students learn current understanding of pharmacokinetics, membrane transport and transporters that are especially important for students who learn pharmaceutical sciences. |
| 教学日历Syllabus | 1: Introduction to ADME PK2: Basis of membrane transport and transporters3: Characteristics of drug transporters; MDR1, BCRP, MRPs, OATPs, OATs, OCTs4: Effect of food and PGx on transporters, OATP2B15: Mechanisms regulating SUA mainly by transporters including food effect and uric acid related diseases. |
| 排课要求Requirement for Course Arrangement | 7月12日开始，上午3学时/天，共5天 |
| 选修要求Requirement for Enrolled Students  | (Grade, Major, GPA, Language, and Prerequisite Requirement)大一至大三学生，专业不限，英语四级建议550分以上 |

# Biologics and biopharmaceuticals 生物制剂和生物制药

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| 开课学院College | School of Life Science and Technology  |
| 任课教师Instructor’sInformation | 姓名Name | Barbara Gatto | photo_Gatto_april2017 |
| 性别Gender | Female |
| 国籍Nationality | Italian |
| 职称/职务Title | Prof. | 邮箱地址Email | barbara.gatto@unipd.it |
| 最终学位Degree | PhD | 任职单位Work Place | Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Padova, Italy |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | **Biologics and biopharmaceuticals**生物制剂和生物制药 |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学时Class Hour | 24 |
| 授课时间Lecture Schedule | July 9-16, 2017 | 考核方式Assessment Method | Multiple choice test |
| 任课教师简介Resume(Brief) | Barbara Gatto is Associate Professor of Medicinal Chemistry at the School of Medicine, University of Padova, where she teaches medicinal chemistry and pharmaceutical biotechnologies, and has served President of the Master Degree in Pharmaceutical Biotechnologies from 2009 till 2015. BG graduated magna cum laude in Chimica e Tecnologie Farmaceutiche and earned a Ph.D. Degree in Pharmaceutical Sciences at the University of Padova. She worked as a post-doctoral fellow in the group of Prof. Dr. Leroy F. Liu at the Departments of Biological Chemistry, Johns Hopkins University Medical School, Baltimore, MD, USA and at the Dept. of Pharmacology, Robert Wood Johnson Medical School, UMDNJ, NJ, USA.The research developed in her laboratory relates to the discovery and development of aptamers and to the elucidation of the molecular mechanism of action of drugs interacting with nucleic acids and nucleic acid-protein complexes. She has been invited as speaker to national and international meeting, is author of several original research articles, reviews and book chapters and holds international patents. She was awarded the Special Mention at the "Biotech Award 1998 for Outstanding Italian Research in Molecular Biology applied to Biomedicine" (Amgen-Dompè).For an updated list of publication please refer to: [Barbara Gatto#SCOPUS](http://www.scopus.com/authid/detail.url?authorId=6701319668) |
| 课程简介（中英文）Course Description | 生物技术药物来源于生物体，因此比化学合成药物复杂很多。其生产和制作工艺对生物制剂的效价和免疫原性都有影响。而且生物技术药物的调控机制在很多方面都和小分子药物有差异。本课程涵盖了生物制药的生产和应用等多个方面，重点介绍重组蛋白和单克隆抗体。本课程分为以下章节：生物制剂的定义、发展历史和最新进展、分类；上游和下游的加工生产过程、污染物和免疫原性；监督管理的注意事项、罕见病用药和生物仿制药；单克隆抗体。Biotechnology-based drug products are more complex than chemically synthesized drugs, since they derive from living sources. The production and bioprocessing of biotech drugs therefore could impact both the potency and the immunogenicity of biologics. Furthermore, their regulation is different in many aspects from that of small molecule drugs.The course covers several aspects relative to the production and use of biopharmaceuticals, with emphasis on recombinant proteins and monoclonal antibodies. The course will analyze in details the following topics: definitions, discovery and development, classes of biologics; production (upstream and downstream processing), contaminants, immunogenicity; regulatory considerations, orphan drugs, biosimilars; monoclonal antibodies. |
| 教学日历Syllabus | **Objectives.** The course aims to enable students to develop a sound knowledge relative to the production, characterization, manipulation and development of biologics, i.e. biotech-derived agents) as human therapeutic agents.**Units Contents**: 1. Introduction to the course. Pharmaceutical Biotechnology: market and development of red biotech. General principles of biotech processes applied to the production of proteins for therapeutic use. Molecular Biotechnology. (*total day time: 3 hours*)
2. Legal requirements and normative for biotechnological drugs (EMA, FDA). Biosimilars, biobetters and orphan drugs.  (2,5 hours) Students discussion on biosilars’ related issues (30 minutes) (*total day time: 3 hours*)
3. Expression methods and criteria for the expression system choice. (*total day time: 3 hours*)
4. Production and downstream processing of Biotech Therapeutics (2 hours). Students’ discussion on “Innovation in production”. (1 hour) (*total day time: 3 hours*)
5. Immunogenicity, aggregation and glycosylation. (2 hours) Students’ discussion on EPO and on methods of recombinant EPO detection (1 hour). (*total day time: 3 hours*)
6. Monoclonal Antibodies in clinical use. (*total day time: 3 hours*)
7. Students’ presentations on selected biologics in therapeutic use (*total day time: 3 hours*)
8. Students’ presentations on selected biologics in therapeutic use (2 hours) + Final test (1 hour). (*total day time: 3 hours*)

**Evaluation**. The examination at the end of the course aims to test the student's ability to understan important aspects related to the discovery, development and use of biotech-derived protein drugs.**Final exam**: multiple choice test |
| 选修要求Requirement for Enrolled Students  | (Grade, Major, GPA)Knowledge of the English language is mandatory since the course will be in English, as well as the study material, which will consist for the most part of articles of up-to-date literature. The student should possess a sound knowledge of molecular biology, cell biology, immunology and pharmacology useful in understanding the development, use and the critical issues related to the use of recombinant proteins.  |

# Marketing 市场营销学

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| 开课学院College | School of International Pharmaceutical Business国际医药商学院 |
| 任课教师Instructor’sInformation | 姓 名Name | Gregory M BROEKEMIER |  |
| 性 别Gender | Male |
| 国 籍Nationality | United States |
| 职称/职务Title | Professor | 邮箱地址Email | broekemierg@unk.edu |
| 最终学位Degree | Ph.D. (Business) | 任职单位Work Place | University of Nebraska at Kearney |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Marketing 市场学 |
| 授课对象Open to | 2014、2015、2016所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 24 |
| 授课时间Lecture Schedule | 4.5 hours per day, July 10 to July 15 (6 days) in two-hour & 15 minute periods | 考核方式Assessment Method | 4 Multiple-Choice Exams (July 11, 12, 13, 14); and a short project (July 15)  |
| 任课教师简介Resume(Brief) | Dr. Broekemier has a PhD in Business from the University of Nebraska. He has 5 years of full-time retail managerial experience and 30 years of teaching experience at the university level. He teaches a variety of courses in Principles of Marketing, Advertising Management, Retail Management, Consumer Behavior, Marketing Research, Principles of Management, Small Business Management, etc. at both undergraduate and Masters levels. He has been invited twice to speak to master’s level business students in Bulgaria. Dr. Broekemier has published in numerous journals including the Journal of Service Marketing and presented his research findings in various conferences in the US and abroad. He has received the Teaching Award twice and the Student Research Mentoring Award three times. His department has won the prestigious University-wide Departmental Teaching Award across almost 300 departments in the university system. Dr. Broekemier is the chair of the Marketing/MIS/SCM department, a post he has held for the past 15 years. |
| 课程简介（中英文）Course Description | The course will inform students of the theories, principles, and methods involved in the transaction and organized exchange of goods and services. Discussion of the history and evolution of marketing, its present-day challenges, and strategies connected with developing, pricing, promoting, and distributing goods and/or services.本课程旨在帮助学生学习市场交易、商品及服务交换过程中所涉及的基本理论、原理和方法。讨论市场营销的发展历史及演变，现今的挑战，以及与新产品开发、价格、促销和分销有关的营销战略。 |
| 教学日历Syllabus | MARKETINGCPU, NanjingJuly 9-15, 2017**Instructor:** Dr. Greg Broekemier E-mail address: broekemierg@unk.edu  **Required Text:** *To be determined***Course Description:**The theories, principles, and methods involved in the transaction and organized exchange of value of goods and services such as pharmaceutical products. Discussion of present day problems and policies connected with developing, pricing, promoting, and distributing such goods and services.**General Course Objectives:**The textbook, assignments, discussions, and other materials and activities are designed to help students:1. Understand fundamental concepts and terminology used in marketing.2. Examine the social, political, and economic environments within which marketing  activities are carried on, and develop an understanding of their interrelationships.3. Apply marketing concepts and terminology in pharmaceutical business.4. Develop a foundation for further study in marketing and other business-related areas.**Tentative Course Schedule/Outline**

|  |  |
| --- | --- |
| TOPICS | DATES |
| World of Marketing | 10-Jul |
| Strategic Market Planning |
| Marketing Environment;  |
| Marketing Research |
| Consumer Behavior | 11-Jul |
| Business to Business Marketing |
| Supply Chain Management |
| Retailing | 12-Jul |
| Segmentation and Targeting |
| Creating Products; |
| Managing Products | 13-Jul |
| Services |
| Pricing |
| Catching the Buzz | 14-Jul |
| Advertising, Sales Promotion, and PR |
| Personal Selling, Sales Management, and Direct Marketing |
| **Projects/Exam** | 15-Jul |

The course schedule is flexible. If we need more time for a chapter, we will take the time. Conversely, we may get ahead of schedule at times. This information will be provided in class and it is your responsibility to be aware of any changes.**Expectations** 1. To be prepared for each exam or assignment. 2. To attend class.**Course Grades** 1. Final grades will be assigned on the basis of the final examination and project, according to the following weights:Final Examination 80%Project 20% 100%GRADING SCALE100 - 93 = A92 - 90 = A-89 - 87 = B+86 - 83 = B82 - 80 = B-79 - 77 = C+76 - 73 = C72 – 70 = C-69 - 67 = D+ 66 - 63 = D62 - 60 = D-< 60 = F |
| 选修要求Requirement for Enrolled Students  | No subject matter prerequisites required. English proficiency level: Intermediate preferred (CEFR B1 level - IELTS 4-5, TOEFL iBT 31-34, TOEIC 401-525, CAMBRIDGE PET) see <https://www.embassyenglish.com/resources/english-levels> |

# E-Business 电子商务

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| 开课学院College | 国际医药商学院 |
| 任课教师Instructor’sInformation | 姓名Name | Srivatsa **SESHADRI** |  |
| 性别Gender | Male |
| 国籍Nationality | United States |
| 职称/职务Title | Professor | 邮箱地址Email | seshadris@unk.edu |
| 最终学位Degree | Ph.D. (Business) | 任职单位Work Place | University of Nebraska at Kearney |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | E-Business（电子商务） |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学时Class Hour | 24 |
| 授课时间Lecture Schedule | 4 hours per day, July 10 to July 15 (6 days) in two-hour & 15 minute periods | 考核方式Assessment Method | 4 Multiple-Choice Exams (July 11, 12, 13, 14); and a short project (July 15) |
| 任课教师简介Resume(Brief) | Dr. Seshadri has a PhD in Business from the University of Arkansas and a baccalaureate degree in Mechanical Engineering. He has 13 years of full-time industry experience and 25 years of teaching experience at the university level. He teaches a variety of courses in E-Business, E-Marketing, Philanthropy: Learning to Give, Strategic Marketing Management, Services Marketing, Business to Business Marketing, Sales Management, Strategic Product Management, Marketing Research etc. at both undergraduate and Masters levels. Dr. Seshadri has taught in India, Bulgaria, and South Korea as invited visiting professor. Dr. Seshadri has published in several journals and presented his research findings in various conferences in the US and abroad. He has received the Teaching Award twice and the Student Research Mentoring Award once. His department won the prestigious University-wide Departmental Teaching Award across almost 300 departments in the university system. Dr. Seshadri is the Director of the MBA program at the University of Nebraska at Kearney since 2011. |
| 课程简介（中英文）Course Description | The pragmatic aspects of E-Business to achieve overall organization goals,technology underpinnings for e-business, impact on other information systems within a business, impact on business strategy including how business strategy shapes and is now being shaped by threats and opportunities in e-business, impact on the pharmaceuticaland other industries and markets, business models for e-business.电子商务课程旨在实现组织整体目标，课程主要包括电子商务的技术基础；在商业领域内对相关信息系统的影响；对商业战略的影响，包括经营战略如何形成以及电子商务目前受到的机遇与挑战；对医药及其他行业和市场的影响和电子商务的商业模式等。 |
| 教学日历Syllabus |  E-BUSINESS CPU, Nanjing July 9-15, 2017**Instructor:** Dr. Sri Seshadri E-mail address: seshadris@unk.edu  **Required Text:** Introduction to e-Business (pdf copy provided for free)**Course Description:**The pragmatic aspects of E-Business to achieve overall organization goals, technology underpinnings for e-business, impact on other information systems within a business, impact on business strategy including how business strategy shapes and is now being shaped by threats and opportunities in e-business, impact on the pharmaceutical and other industries and markets, business models for e-business.**General Course Objectives:**The textbook, in-class assignments, discussions, and other materials and activities are designed to help students:1. Understand fundamental concepts and terminologies used in e-business.2. Examine the social, political, legal, and economic environments within which e-business activities are carried out.3. Leveragee-businesstechnologies in the pharmaceutical business.**Tentative Course Schedule/Outline**

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| TOPICS | DATES |
| Introduction to e-business | 10-Jul |
| E-Business Technologies |
| E-Business Markets and models |
| E-business economies |
| E-Marketing | 11-Jul |
| The Internet: Legal and security issues |
| Managing E-Business |
| E-Business strategies | 12-Jul |
| E-Business strategy implementation |
| E-Business strategy evaluation | 13-Jul |
| E-Business sustainability | 14-Jul |
| E-Business: the future |
| **Projects/Exam** | 15-Jul |

The course schedule is flexible. If we need more time for a chapter, we will take the time. Conversely, we may get ahead of schedule at times. This information will be provided in class and it is your responsibility to be aware of any changes.**Expectations** 1. To be prepared for each exam or assignment. 2. To attend class.**Course Grades** 1. Final grades will be assigned on the basis of the average of the four examinations, percentage of written assignments completed, and class attendance; according to the following weights:Final Examination 80%Project 20% 100%GRADING SCALE100 - 93 = A92 - 90 = A-89 - 87 = B+86 - 83 = B82 - 80 = B-79 - 77 = C+76 - 73 = C72 – 70 = C-69 - 67 = D+ 66 - 63 = D62 - 60 = D-< 60 = F |
| 选修要求Requirement for Enrolled Students  | No subject matter prerequisites required. Computer Proficiency expected of students.English proficiency level: Intermediate preferred (CEFR B1 level - IELTS 4-5, TOEFL iBT 31-34, TOEIC 401-525, CAMBRIDGE PET) see <https://www.embassyenglish.com/resources/english-levels> |

# Biomaterials and Their Applications 生物材料及其应用

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| 开课学院College | 工学院 |
| 任课教师Instructor’sInformation | 姓 名Name | Liping Tang | images |
| 性 别Gender | 男 |
| 国 籍Nationality | 美国 |
| 职称/职务Title | Professor | 邮箱地址Email | ltang@uta.edu |
| 最终学位Degree | PhD | 任职单位Work Place | University of Texas at Arlington |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Biomaterials and Their Applications生物材料及其应用 |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 24 |
| 授课时间Lecture Schedule | 7.9-7.17 | 考核方式Assessment Method | Exam |
| 任课教师简介Resume(Brief) | Dr Liping Tang received his BS in Biology from Tunghai University and MS in Marine Biology from National Taiwan University. He subsequently obtained PhD degree in Biomedical Engineering and Chemical Engineering from University of Minnesota. After finishing postdoctoral training at Albany Medical College, he became Assistant Professor at the Department of Pediatrics at Baylor College of Medicine Houston Texas. Currently he is a Professor at the Department of Bioengineering at UTA. He has served as many study sections at National Institute of Health American Heart Association and many private foundations. He also served as a reviewer for more than 20 peerreview journals. He is the recipient of the Young Investigator Award from the Society for Biomaterials on 2001 and UTA College of Engineering Excellent in Research Award on 2010. His research interest is on the development of bioactive materials which enhance tissue regeneration associated with a variety of diseases. His expertise covers a broad area of biomaterials, tissue engineering, drug delivery and stem cell therapies. |
| 课程简介（中英文）Course Description | Biomaterials are synthetic or natural materials that are used to directly replace, change or improve the living tissues which have been damaged by diseases, trauma, accidents, etc. This biomaterial can be single or in combination with other materials which are used in living tissues at different times. Although a lot of efforts have been done on improving the quality and efficiency of biomaterials, there is a long way to achieve an ideal biomaterial with minimum side effects. This course is an overview of the types of biomaterial (such as bioceramics, biopolymers, metals and biocomposites) and especially nano-biomaterials, their applications in different tissues (drug delivery systems, tissue engineering, implants, etc.) and also to give an overall view in new trends in the biomaterial field the during last decades.本课程将主要给大家介绍不同类型的生物材料，以及这些生物材料特别是纳米材料在生物医学方面的应用，包括载药系统应用、组织工程、移植等方面。同时，还会给大家介绍生物材料近年来的最新研究进展和应用。 |
| 教学日历Syllabus | 1. Introduction of biomaterials
2. Application of biomaterials
3. New trends in biomaterials
 |
| 排课要求Requirement for Course Arrangement | 3学时/天 |
| 选修要求Requirement for Enrolled Students  | (Grade, Major, GPA, Language, and Prerequisite Requirement)英语六级以上，听说能力突出 |

# Introduction to Biostatistics 生物统计简介

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| 开课学院College | 理学院 |
| 任课教师Instructor’sInformation | 姓名Name | Depeng Jiang |  |
| 性别Gender | 男 |
| 国籍Nationality | 加拿大 |
| 职称/职务Title | 副教授 | 邮箱地址Email | f.r.yan@163.com |
| 最终学位Degree | 博士 | 任职单位Work Place | 加拿大曼妮托巴大学 |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | 生物统计简介（Introduction to Biostatistics） |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学时Class Hour | 24 |
| 授课时间Lecture Schedule | 2017.7.9-2017.7.16每天上午3节 | 考核方式Assessment Method | 考试 |
| 任课教师简介Resume(Brief) | Depeng Jiang Associate Professor, Department of Community HealthSciences, College of Medicine, Faculty of Health Sciences, University of Manitoba, Winnipeg, Canada.Research Interests:Longitudinal data analysis and multilevel modelingPerson-centered statistical approaches in health sciencesLatent variable analysis and structural equation modelsClinical trial design and intervention evaluation Mental health of children and youth |
| 课程简介（中英文）Course Description | 生物统计简介，主要讲解医药生命科学研究中的一些常见统计方法，是生物统计课程的入门课程，对学生开展研究工作，进行基础数据分析具有积极的意义。 |
| 排课要求Requirement for Course Arrangement | 天上午3节 |

# History of Drug Discovery and Case Studies 药物发现史及药物合成实例探究

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| 开课学院College | 理学院JL-smile- |
| 任课教师Instructor’sInformation | 姓 名Name | 李杰Jie Jack Li |  |
| 性 别Gender | 男Male |
| 国 籍Nationality | 美国United States of America |
| 职称/职务Title | 副教授Associate Professor | 邮箱地址Email | jjli@usfca.edu |
| 最终学位Degree | 博士PhD | 任职单位Work Place | 美国旧金山大学University of San Francisco |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | 药物发现史及药物合成实例探究History of Drug Discovery and Case Studies |
| 授课对象Open to | 2014、2015级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 24 |
| 授课时间Lecture Schedule | 7月9日-16期间9:00am-11:30am2:00pm-4:30pm | 考核方式Assessment Method | Quiz |
| 任课教师简介Resume(Brief) | Jie Jack Li (李杰), 1964年生于江苏铜山。分别于1983 和1987 在南京大学获化学学士和硕士学位。1995 年，他在印地安那大学获得博士学位。在麻省理工学院做完博士后，他于1997-2012分别辉瑞和施惠宝制药公司从事药化研究。从2013年起，他在旧金山大学作任化学副教授至今。他出版了25本关于有机化学、药物化学、和药物发明历史方面的书。他的书“有机人名反应”现在已出到第五版。**Jie Jack Li** received his BS and MS degrees in 1983 and 1988, respectively, from Nanjing University in China and earned his PhD in organic chemistry in 1995 at Indiana University. After a stint as a postdoctoral fellow at MIT, he worked as a medicinal chemist at Pfizer and Bristol-Myers Squibb from 1997 to 2012. Since then he has been an Associate Professor of Chemistry at the University of San Francisco, teaching organic and medicinal chemistry. He has published 25 books ranging from organic and medicinal chemistry, to the history of drug discovery. His book “Name Reactions: A Collection of Detailed Mechanisms and Synthetic Applications” is now in its fifth edition. Research in the Li group focuses on two areas: C–H bond functionalization and medicinal chemistry in the therapeutic area of oncology.  |
| 课程简介（中英文）Course Description | 这个课程涵盖主要治疗领域的药物史，重点是人文的一面。五种重要药物十五种重要药物的合成将作为案例研究讨论。This class cover the history of drugs in major therapeutic areas, with an emphasis on the human side. The syntheses of fifteen important drugs are discussed as case studies. |
| 教学日历Syllabus | ***1, Anti-Bacterials***1 Lister and Carbolic Acid2 Dr. Ehrlich’s Magic Bullet3 Domagk and Sulfa Drugs4 Fleming, Florey, Chain, and Penicillin5 Waksman, Schatz, and Streptomycin6 Duggar, Conover, and Tetracycline7 Quinolones and ZyvoxCase Study 1: Discovery of linezolid (Zyvox), Inhibitor of the initial phase of bacterial protein synthesis***2, Cancer Drugs***1. The Etiology
2. Nitrogen Mustard
3. Antimetabolites
4. Platinum Drugs
5. Vinca Alkaloids
6. Taxol
7. Protein Kinase Inhibitors,

 -Monoclonal Antibodies -Small Molecules 8. Velcade and SAHA Case Study 2: Discovery of Imatinib Mesylate (Gleevec), a Protein Kinase Inhibitor***3, Cardiovascular Drugs***1 Harvey and blood circulation2 Withering and digitalis3 Sobrero, Nobel and nitroglycerin4 Vogl and diuretics5 Black and beta-blockers1. Snake venom and ACE inhibitors

7 Fleckenstein and calcium channel blockers8 Sodium and potassium channel blockers/openersCase Study 3: Discovery of Amlodipine (Norvasc), A Calcium Channel Blocker ***4, CNS Drugs***1. CNS Drugs and Our Culture
2. Minor Tranquilizers
3. Antidepressants

 MAO Inhibitors Tricyclic Antidepressants SSRIs4. Antipsychotics Chlorpromazine Haloperidol Typical antipsychotics Atypical antipsychotics 5. Epilepsy DrugsCase Study 4: Discovery of Duloxetine (Cymbalta) A Serotonin and Norepinephrine Reuptake Inhibitor (SNRI)***5, Anti-Inflammatory Drugs***1 Cortisone2 Non-steroidal anti-inflammatory drugs 2.1 Aspirin 2.2 Ibuprofen 2.3 Celebrex3 Anti-asthmatics 3.1 Flonase 3.2 Serevent* 1. Singulair
1. Biologics

5 A Case Study: MMP-13 InhibitorsCase Study 5: Discovery of (varenicline (Chantix), An42 Nicotinic Receptor Partial Agonist for Smoking Cessation***6, Anti-Viral Drugs for HBV and HCV***1. What Is A Virus?
2. Vaccines
3. Interferon
4. Hepatitis B
5. Hepatitis C

Case Study 6: Discovery of Sofosbuvir (Sovaldi), an HCV NS5B Polymerase Inhibitor***7, Cholesterol Drugs, From Niacin to Lipitor*** 1. Cholesterol
2. Cholesterol and Cardiovascular Diseases
3. Early Cholesterol Drugs
4. Endo and the Birth of Statins
5. Merck’s Mevacor and Zocor
6. Sandoz’s Lescol and Parke-Davis’s Lipitor
7. Bayer’s Baycol and Novartis’s Crestor
8. CETP Inhibitors

Case Study 7: Syntheses of Atorvastatin (Lipitor)***8, Blood Thinners, from Heparin to Plavix*** 1. Heparin and Warfarin
2. Aspirin
3. From Ticlid to Plavix
4. Beyond Plavix: Pradaxa, Xarelto and Eliquis

Case Study 8: Syntheses of Rivaroxaban (Xarelto): A Factor Xa Inhibitor for the Treatment of Thrombotic Events***9, Anti-Ulcer Drugs***1 James Black and Discovery of Tagamet 2 Zantac, “Me-Too” But “Me-Better”3 Pepcid and Axid 4 Prilosec, A Proton Pump Inhibitor 5 Nexium and Chiral switch 6 Prevacid, Protonix, and Aciphex 7 The Saga Continues — Ulcer Is Caused by a Bacterium!Case Study 9: Discovery of Esomeprazole (Nexium), A Proton Pump Inhibitor for Treating GERD***10, Diabetes Drugs***1 Understanding Diabetes2 The Discovery of Insulin3 Insulin Aftermath 4 Oral Diabetes Drugs:  4.1 Sulfonylureas  4.2 Biguanides (Metformin) 4.3 Acarbose  4.4 PPAR Inhibitors 4.4 DPP4 InhibitorsCase Study 10: Discovery of sitagliptin (Januvia), a DPP-4 inhibitor for treating diabetes |

# Evidence-Based Medicine for Pharmacists 药剂师必备的循证医学知识

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| 开课学院College | 国际处 |
| 任课教师Instructor’sInformation | 姓 名Name | Bradley Mitchelmore | 性 别Gender | Male |
| 国 籍Nationality | Canada | 邮箱地址Email | brmitche@dal.ca |
| 职称/职务Title | Manager, Clinical Research | 最终学位Degree | BSc. (Pharm), ACPR, PharmD |
| 任职单位Work Place | Canadian Agency for Drugs and Technologies in Health (CADTH) |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Evidence-Based Medicine for Pharmacists |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 24 hours |
| 授课时间Lecture Schedule | July 9 - 16 | 考核方式Assessment Method | Journal Club Presentation |
| 任课教师简介Resume(Brief) | Dr. Bradley Mitchelmore has a Bachelor of Science (Pharmacy) from Dalhousie University (2007), completed a hospital residency at The Ottawa Hospital (2008), and completed a Doctor of Pharmacy (PharmD) (2012) at the University of Toronto. He is currently a Clinical Research Manager at the Canadian Agency for Drugs and Technologies in Health (CADTH). He currently lectures in the Masters of Science (Epidemiology) program at the University of Ottawa and continues to practice pharmacy in a community pharmacy. Previously, Dr. Mitchelmore has been a Clinical Assistant professor at the Faculty of Pharmacy & Pharmaceutical Sciences at the University of Alberta, Manager, Pharmacare Business Solutions with the Nova Scotia Department of Health and Wellness, and held various clinical pharmacy positions in critical care and primary care.  |
| 课程简介（中英文）Course Description | In this course, students will learn the principles of evidence-based medicine (EBM). Students will learn how to find and interpret medical literature, and apply the findings of clinical studies to patient cases.  |
| 教学日历Syllabus | **Course Objectives:**At the end of this course, students should be able to:1. Define evidence-based medicine.
2. Identify sources of medical literature.
3. Develop a clinical question using the PICO (patient, intervention, comparator, outcome) format.
4. Develop a search strategy to find literature to answer a clinical question, including using databases such as PubMed.
5. Describe different types of clinical study designs, and strengths and limitations of each.
6. Identify which type of study design is best suited to answer a specific clinical question.
7. Critically appraise a randomized controlled trial.
8. Apply the results of a randomized controlled trial to a specific patient case.
9. Critically appraise a systematic review.
10. Describe the process to develop clinical practice guidelines.
11. Present the findings of a clinical trial, including the strengths and limitations of the trial, and apply the results to a specific patient case.

**Course Outline:**The course will follow a progression of how to answer a clinical question. Topics of seminars will include the following:1. Principles of Evidence-Based Medicine
2. Study Designs and Hierarchy of Evidence
3. Developing a Search Strategy
4. Critical Appraisal of Randomized Controlled Trials
5. Systematic Reviews and Clinical Practice Guidelines
6. Journal Clubs

**Pre-Readings:*** Students will be provided studies in advance of class to read and appraise. Students should be prepared to discuss these studies in class.

**Suggested Textbook:*** Ajetunmobi O. Making Sense of Critical Appraisal. New York: Oxford University Press, 2002.

**Assessment:*** In-Class Participation: 25%
* Journal Club Presentation: 75%

At the end of the course, the students will present a journal club in small groups. This will involve a short presentation that critically appraises a study and applies the findings to a specific patient case. In class participation will be based on participation in class discussion with the instructor and completing pre-readings in advance of class. |

# Pharmaceutical Care in China 药学服务在中国

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| 开课学院College | 国际处 |
| 任课教师Instructor’sInformation | 姓 名Name | Hoan Linh Banh | 性 别Gender | Female |
| 国 籍Nationality | Canada | 邮箱地址Email | hoan@ualberta.ca |
| 职称/职务Title | Associate Professor | 最终学位Degree | BSc.Pharm, Pharm.D. |
| 任职单位Work Place | University of Alberta |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Pharmaceutical Care in China |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 24 |
| 授课时间Lecture Schedule | July 9 - 16 | 考核方式Assessment Method | Oral Presentations |
| 任课教师简介Resume(Brief) | Dr. Hoan Linh Banh is an Associate Professor at the University of Alberta, Faculty of Medicine and Dentistry. She received her Bachelor of Science in Pharmacy in 1995 (Philadelphia College of Pharmacy and Sciences), and Doctor of Pharmacy (University of Oklahoma) in 1997. Dr. Banh also completed a Specialty Residency in Primary Care (University of Oklahoma) in 1998.  Dr. Banh has over 15 years of teaching experience in therapeutics topics such as asthma, COPD, Gastrointestinal disorders, infectious diseases and clinical pharmacokinetics. She has supervised numerous pharmacy students and pharmacy residents in clinical settings since 1998.   Dr. Banh’s areas of research include: clinical pharmacy, pharmacy education and interdisciplinary team work.  |
| 课程简介（中英文）Course Description | This course will introduce community pharmacy services to pharmacy students. In addition, pharmacy students will be familiar with the available chronic disease management programs by pharmacists in Alberta and throughout Canada. Pharmacy students will learn how to justify and implement chronic disease management in a community pharmacy. Finally, pharmacy students will learn how to create a learning environment in a community pharmacy for pharmacy students. |
| 教学日历Syllabus | 1. Pharmacy services in community pharmacy
2. Pharmacy operations – workflow, practice activities
3. Management of chronic diseases by pharmacists in Canada
4. Management of chronic diseases that can be provided by pharmacists in China
5. Justifying and planning pharmacy services
6. How to develop and evaluate pharmacy services
7. Achieving and measuring patient satisfaction
8. How to create a teaching environment for pharmacy students in a community pharmacy
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#  Pharmacology and Drug Discovery药理学与药物发现

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| 开课学院College | 中药学院 The TCM college |
| 任课教师Instructor’sInformation | 姓 名Name | James.Barrett |  |
| 性 别Gender | Male |
| 国 籍Nationality | USA |
| 职称/职务Title | Professor | 邮箱地址Email | James.Barrett@DrexelMed.edu |
| 最终学位Degree | Ph.D | 任职单位Work Place | Drexel University |
| 课程信息CourseInformation | 课程名称(中英文对照)Course Name | Pharmacology and Drug Discovery药理学与药物发现 |
| 授课对象Open to | 2014、2015、2016级所有专业本科生以及2013级临床药学专业本科生 | 学 时Class Hour | 16 hours |
| 授课时间Lecture Schedule | Two hour lectures for 8 days | 考核方式Assessment Method | Essay Examination |
| 任课教师简介Resume(Brief) | Dr. Barrett is Professor of Pharmacology and Physiology and Founding Director of the Drug Discovery and Development Program at Drexel University College of Medicine. He currently directs the Clinical and Translational Research Institute. He received his Ph.D. from Pennsylvania State University that was followed by a Postdoctoral Fellowship at the Worcester Foundation for Experimental Biology. He was on the faculty of at the Uniformed Services University of the Health Sciences before moving to the pharmaceutical industry where he was first Head of Neuroscience Discovery at Wyeth Pharmaceuticals. Just prior to returning to academia as Chair of the Department, and after 15 years in the pharmaceutical industry, he was Sr. VP, Chief Scientific Officer at Adolor Corporation. He has published more than 300 scientific articles and abstracts, along with 6 books in the area of neuropharmacology, behavioral pharmacology, translational research and neuroscience. He has served as President of the Behavioral Pharmacology Society, the American Society for Pharmacology and Experimental Therapeutics and the Association of Medical School Pharmacology Chairs. He has received a number of awards that include the Solvay-Duphar Award for research on affective disorders, the George B. Koelle Award for contributions to teaching and research, the P.B. Dews Lifetime achievement award and the Torald Sollmann Award in pharmacology for significant contributions to the advancement and extension of knowledge in the field of pharmacology. His current research emphasis is in the area of pain, its co-morbid pathologies and on basic mechanisms and biomarkers for the development of new therapeutics. |
| 课程简介（中英文）Course Description | The course will cover basic principles of pharmacology specifically as they relate to the discovery and development of new therapeutics. The main focus will be on how new drug targets are identified, how drugs are discovered based on those findings, and then validated and developed for approval by the regulatory authorities. Lectures will take the students through the entire process from early discovery to commercial approval and will include preclinical toxicology, clinical trials and regulatory considerations.  |
| 教学日历Syllabus | Lecture 1: Introduction and overview of the course – Where do new drugs come from? The Process of Drug Discovery – Historical Perspectives & Current Status Project teams and organizationLecture 2: Target based drug discovery – Target identification and Validation Screening for drug leads – High throughput screening, phenotypic screening Drug lead identification and optimizationLecture 3: Preclinical Assessment – In vitro and in vivo systems The role of animal models ADME/PK/PD – Drug absorption, distribution and metabolism Lecture 4: Safety pharmacology and Toxicology Regulatory Issues and requirementsLecture 5: Case Study: The development and commercialization of alvimopan (Entereg©) Preparing for Phase I studies: The Investigational New Drug (IND) Phase I Studies – First in Human Safety studiesLecture 6: Clinical Research – Phase II-III – Safety and Efficacy Clinical trial design – adaptive trials Translational Medicine & BiomarkersLecture 7: New Developments:  “Precision medicine” – pharmacogenomics, metabolomics & pharmacogenetics PharmacoepidemiologyLecture 8: Final Examination |
| 选修要求Requirement for Enrolled Students  | (Grade, Major, GPA, Language, and Prerequisite Requirement)GPA> 3.0; English comprehension; physiology |