NOTE to STUDENTS: If you need any accommodations related to attending/enrolling in this course, please contact one of the Graduate School's 504 Coordinators, Cheryl Spitzenberger or Natalie Sirisaengtaksin. We ask that you notify GSBS in advance (preferably at least 3 days before the start of the semester) so we can make appropriate arrangements.

Term and Year: **FALL 2024** Course Number and Course Title: **GS06 1103: Emerging Concepts in Immunology** Credit Hours: **3** Meeting Location: **UT-GSBS** Building/Room#: **BSRB S3.8367 (Gallick Classroom)** WebEx/Zoom Link: **N/A**	Program Required Course: **Yes** Approval Code: **Yes** (If yes, the Course Director or the Course Designee will provide the approval code.) Audit Permitted: **Yes** Classes Begin: **August 27, 2024** Classes End: **November 7, 2024** Final Exam Week: **No exam**

Class Meeting Schedule

Day	Time
Tuesday	**3:00-5:00 PM**
Thursday	**3:00-5:00 PM**

Course Director

Name and Degree: **Askar M. Akimzhanov, PhD**

Title: **Associate Professor**

Department: **Molecular Biology & Biochemistry**

Institution: **UTH**
Email Address: ***Askar.M.Akimzhanov@uth.tmc.edu***

Contact Number (office): **713-500-7686**

Contact Number:

NOTE: Office hours are available by request. Please email me to arrange a time to meet.

Course Instructors

1. Pamela Wenzel, Ph.D.
UTHealth Houston Integrative Biology & Pharmacology
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2. Travis I. Moore, Ph.D.
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4. Shervin Assassi, M.D., M.S.
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5 Michael Curran, Ph.D.
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6. R. Eric Davis, M.D.
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	7. Scott Evans, M.D., FCCP, ATSF MDACC Pulmonary Medicine Seevans@mdanderson.org **8. Jin Seon Im, M.D., Ph.D.** MDACC Stem Cell Transplantation and Cellular Therapy JIm@mdanderson.org **9. Qing Ma, Ph.D.** MDACC Stem Cell Transplantation-Research qma@mdanderson.org **10. Seyed (Peyman) Moghaddam, M.D.** MDACC Pulmonary Medicine smoghadd@mdanderson.org **11. Kristen E. Pauken, Ph.D.** MDACC Immunology KEPauken@mdanderson.org **12. Askar Akimzhanov, Ph.D.** UTHealth Houston Biochemistry and Molecular Biology Askar.Akimzhanov@uth.tmc.edu **13. Vahid Afshar-Kharghan, M.D.** MDACC Pulmonary Medicine vakharghan@mdanderson.org

Course Description:
This course is designed to expose students to the most recent research in the field of immunology. The literature-based curriculum relies heavily on the expert opinions of the faculty lecturers to identify the most impactful and significant research in their respective fields. Students prepare presentations of original research articles in conjuction with support from the faculty, thereby providing immersion in highly specialized areas of immunology.

Textbook/Supplemental Reading Materials (if any)

- Original research articles assigned by faculty instructors

Course Objective/s:
This course will provide an understanding of emerging concepts in immunology. From current literature, students will explore new areas of research in antigen processing, cytokines, development of T and B lymphocytes, antigen recognition by T lymphocytes, cellular activation, and cell interactions. Each student will read and critically assess selected papers in molecular and cellular immunology. Students prepare several oral presentations and gain experience leading scientific discussions in a small group setting. Papers presented in this course can be used as the basis for developing a proposal in the GSBS Scientific Writing course.

Competencies to be acquired in this course include all core competencies of the Immunology Program, with emphasis on critical thinking and presentation skills.

***Specific Learning Objectives*:**

1. Learn about cutting-edge discoveries and techniques used in the field of immunology.
2. Learn to critically evaluate tools, experimental results, and conclusions in scientific publications.
3. Learn to identify study rationale.
4. Acquire effective presentation skills needed to describe immunological model systems and interpret data generated from experiments testing immunological concepts.
5. Develop essential skills for leading and participating in scientific discussions about immunology in a small group setting.

Student Responsibilities and Expectations:

Students enrolled in this course will be expected to perform the following activities each week.

1. Read 2-4 research papers (e.g., original research articles and optional review articles).
2. Attend twice weekly class sessions. Online sessions require video on and/or active engagement via chat.
3. Participate in and contribute to discussions during class sessions.

Students enrolled in this course will be expected to perform the following twice during the semester.

1. Prepare a slide-based presentation based upon assigned research papers.
2. Contact faculty a minimum of 2 weeks in advance of presentation date to consult with instructor.
3. Present and lead discussion for assigned original research articles.

Students are expected to complete all assigned reading material (research literature and reviews) prior to class. Plagiarism and failure to properly cite scientific literature and other sources will not be tolerated and are grounds for dismissal from the course and further GSBS disciplinary action. Cheating or engaging in unethical behavior will be grounds for dismissal from the course without credit and further GSBS disciplinary action.

Grading System: **Letter Grade (A-F)**

Student Assessment and Grading Criteria : *(May include the following:)*

Percentage	Description
Presentation (50%)	a. Coverage of relevant background literature and identification of critical observations. b. Identification of critical problems and hypotheses addressed in the paper.

	c. Understanding of the experimental design and methods utilized. d. Presentation, interpretation and discussion of the data. e. Length and style of presentation.
Participation and/or Attendance (50%)	a. Novelty/originality of ideas expressed b. Relevance of comments to the issues being discussed c. Frequency of productive contributions to discussion

CLASS SCHEDULE – Fall 2024

Date	Duration (Hour(s))	Lecture Topic	Lecturer/s
Tuesday, August 27, 2024	**2**	**1.Introduction**	**Askar Akimzhanov**
Tuesday, September 10, 2024	**2**	**No class**	
Thursday, September 12, 2024	**2**	**No class**	
Tuesday, September 17, 2024	**2**	**2. Hematopoiesis**	**Pamela Wenzel**
Thursday, September 19, 2024	**2**	**3. Myeloid Cells and Tumorigenesis**	**Seyed Moghaddam**
Tuesday, September 24, 2024	**2**	**4. CD1 Restricted T Cells and Diseases**	**Jin Seon Im**
Thursday, September 26, 2024	**2**	**5. Imaging Approaches in Immunology**	**Travis Moore**
Tuesday, October 1, 2024		**6. Checkpoint Blockade**	**Michael Curran**
Thursday, October 3, 2024		**7.Lymphatic tumor immunity**	**Melissa Aldrich**
Tuesday, October 8, 2024		**OPEN**	**OPEN**
Thursday, October 10, 2024	**2**	**OPEN**	**OPEN**
Tuesday, October 15, 2024	**2**	**8. Cellular Immunotherapy for Cancer**	**Qing Ma**
Thursday, October 17, 2024	**2**	**9. Host immunity in lung/COVID-19**	**Scott Evans**
Tuesday, October 22, 2024	**2**	**10. T cell signaling**	**Askar Akimzhanov**

Thursday, October 24, 2024	**2**	**11. T cell dysfunction**	**Kristen Elaine Pauken**
Tuesday, October 29, 2024	**2**	**OPEN**	**OPEN**
Thursday, October 31, 2024	**2**	**12. Complement**	**Vahid Afshar-Kharghan**
Tuesday, November 5, 2024	**2**	**13. Autoimmunity**	**Shervin Assassi**
Thursday, November 7, 2024	**2**	**14. Abnormal BCR Signaling**	**R. Eric Davis**

AA/jal