IMPORTANT: This syllabus form should be submitted to OAA (gsbs_academic_affairs@uth.tmc.edu) a week before the start of each semester.

NOTE to STUDENTS: If you need any accommodations related to attending/enrolling in this course, please contact the Graduate School's 504 Coordinator Natalie Sirisaengtaksin, PhD. 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: **Summer 2026** Course Number and Course Title: **GS00 1610: Special Project: Applied Immunology** **Credit Hour: 1** Prerequisite: **GS06 1013: Fundamental Immunology** Meeting Location: UT MD Anderson Cancer Center Building/Room#: BSRB S3.8371 (GSBS Large Classroom)	**Program Required Course: Yes** **Approval Code: No** **Audit Permitted: No** Classes Begin: **June 8, 2026** Classes End: **June 19, 2026** Final Exam Week: **No final exam**

Class Meeting Schedule

Day	Time
Monday – Friday	**9:00 - 11:30 am**

Course Director Name and Degree: **Alexandre Reuben, Ph.D.** Title: Assistant Professor Department: THNMO Institution: MDACC Email Address: areuben@mdanderson.org Contact Number: 713-745-3014 **Course Co-Directors:** Name and Degree: **Cara Haymaker, Ph.D.** Title: Associate Professor Department: TMP Institution: MDACC Email Address: chaymaker@mdanderson.org Contact Number: N/A **NOTE:** Office hours are available by request. Please email me to arrange a time to meet.	**Instructors** 1. **Jason Schenkel, MD, Ph.D.** Institution: MDACC Email Address: jmschenkel@mdanderson.org 2. **Kevin McBride, Ph.D.** Institution: MDACC Email Address: kmcbride@mdanderson.org 3. **Cara Haymaker, Ph.D.** Institution: MDACC Email Address: chaymaker@mdanderson.org 4. **Jared Burks, Ph.D.** Institution: MDACC Email Address: jburks@mdanderson.org 5. **Alexandre Reuben, Ph.D.** Institution: MDACC Email Address: areuben@mdanderson.org

Teaching Assistant: TBD	6. **Luisa Solis Soto, M.D.** Institution: MDACC Email Address: lmsolis@mdanderson.org 7. **Marie-Andree Forget, Ph.D.** Institution: CTMC Email Address: mforget@ctmc.com 8**. Sachet Shukla, Ph.D.** Institution: MDACC Email Address: sashukla@mdanderson.org 9. **Ken Chen, Ph.D.** Institution: MDACC Email Address: kchen3@mdanderson.org

Course Description:
Applied Immunology provides an in-depth review of the major methods relevant to immunology, analysis methods, data representations, and software and analysis packages. The mini-course is given over 2 weeks in the Summer with each day dedicated to a different method. The first hour of the course is led by a faculty member to discuss and review the method in question, its relevance in different contexts, strengths and weaknesses, and prior applications as well as different data representations. The second half of each course is led by a scientist with hands-on experience analyzing data and accompanied by a sample dataset for students to analyze as a group.

Textbook/Supplemental Reading Materials:

- No textbook
- Slides to be provided by speakers
- Sample data for analysis to be provided

Course Objective:
Upon successful completion of this course, students will be able to relate basic principles, strengths, weaknesses and controls of major immunological methods and the purpose of different data outputs and representations.

***Specific Learning Objectives*:**

1. Understand the basics of major immunological methods;

2. Understand strengths and weaknesses of immunological methods to inform selection;

3. Understand the importance of specific experimental controls for each method;

4. Understand general analysis of data associated with immunological methods;

5. Understand different forms of data and outputs for data representation.

Student responsibilities and expectations:

Students are expected to attend all lectures and workshops, participate, and perform all requested basic data analyses to the best of their abilities. Cheating or engaging in unethical behavior during analyses will be grounds for dismissal from the course without credit and further GSBS disciplinary action.

Grading System: **Pass/Fail**

Student Assessment and Grading Criteria:

Percentage	Description
In class assignments (70 %)	Complete daily assignments proposed in class, data analysis/representation and hand in on time (before leaving class)
Participation and/or Attendance (30 %)	Attending all lectures and analysis sessions and remaining present throughout

CLASS SCHEDULE

Date	Duration (Hour(s) taught by lecturer)	Lecture Topic	Lecturer/s
6/10/26	**9:00-11:30**	Receptor sequencing	**Alex Reuben**
6/11/26	**9:00-11:30**	Spatial Biology	**Jared Burks**
6/12/26	**9:00-11:30**	Antigen Discovery	**Sachet Shukla**
6/15/26	**9:00-11:30**	Antibody development	**Kevin McBride**
6/16/26	**9:00-11:30**	Mouse models of immunology/immunotherapy	**Jason Schenkel**
6/17/26	**9:00-11:30**	Flow cytometry	**Cara Haymaker**
6/18/26	**9:00-11:30**	Histology	**Luisa Solis Soto**
6/19/26	**9:00-11:30**	Cytokine Profiling	**Cara Haymaker**
6/22/26	**9:00-11:30**	In vitro assays	**Marie-Andree Forget**
6/23/26	**9:00-11:30**	Computational immunology	**Ken Chen**