Translational Immunology Imm2400H

Mondays 1-3pm beginning January 12, 2026.
In person and audio recorded
Location: Please check ACORN for rooming details

Course Coordinator: Dr. Stuart Berger
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Syllabus

Rationale:

Immunology as an experimental science is rooted in the search for ways to manipulate immunity to prevent or cure disease. Modern advances in fundamental immunology, coupled with powerful tools of molecular and cellular biology have led to remarkable practical advances in fighting infectious diseases, organ transplantation, autoimmunity and marshaling of the immune system to fight cancer. The purpose of this course is to provide students with an overview of tools, technologies and approaches that are being used to translate fundamental principles and immunological discoveries towards practical use.

Overview:

Using a combination of lectures, guest speakers, discussion and case studies, students will explore how fundamental advances in immunology are being developed as next generation reagents, biomarkers, therapeutics, vaccines and therapeutic immune cells. The course will be composed of 14 2-hour sessions. Each of the first 11 sessions will be composed of an interactive lecture component including related discussion of the topic. For some sessions, experts in industry will be brought in as guest lecturers and discussants. Students will present their case studies in the final two sessions (with a third if necessary).

Grading:

Grading will be based on the following combination: Paper outline (10% -grade returned before drop date), Paper (40%), Group case study presentation (40%), Participation (10%). The paper outline will be a 2 page summary of the topic along with an annotated bibliography. The paper will be 10-12 pages long (double-spaced) and will be written as a review article on a translational immunology topic. For case studies, groups of 2-4 students will present how an immunological product was developed, highlighting translational challenges.

Sessions:

Date	Topic	Lecturer
Jan 12, 2026	Course Introduction, Context and the Translational Process	Berger
Jan 19, 2026	Clinical Trials	Susan Marlin, President & CEO, Clinical Trials Ontario
Jan26, 2026	Monoclonals	Ashley Meyers, President, COO, Antoxa Corp
Feb 2, 2026	Multabodies	Jean-Philippe Julien Senior Scientist, Sick Kids
Feb 9, 2026	Vaccines	Liliana Sampaleanu, Director, FF&T, PS&T, Beata Gajewska, Analytic Sciences Sanofi
Feb 23, 2026	Cell based therapy	Emily Titus, former VP Process Sciences, Notch Therapeutics
Mar 2, 2026	Transplantation	Stephen Juvet, UHN
Mar 9, 2026	Ideas to Products: A crash course in product development in Biotechnology	Christina Loh, Geneve Awong, Standard BioTools
Mar 16, 2026	Bugs as Drugs (via Zoom)	Emma Allen-Vercoe, UofGuelph, co-founder, NuBiyota
Mar 23, 2026	Therapeutic T cells	Laszlo Radvanyi, UOttawa/ OHRI
Mar 30, 2026	HIV	Lena Serghides, UHN
Apr 06, 2026	The Entrepreneurial Immunologist	Evelyn Pau, Operating Principal, Amplitude Ventures
Apr 13, 2026	Presentations 1	Berger
Apr 20, 2026	Presentations 2	Berger

Other Important Dates:
Final date to add Winter session course: January 12, 2026
Paper outline due: February 2, 2026
Paper Due: March 16, 2026
Drop Date: February 27, 2026

Presenter contacts:

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Rubrics

Three levels of accomplishment are provided to assist in evaluating each specific category. The described level of accomplishment will not match exactly with each student's performance and may fall in between the described levels. To capture that, evaluation will use a scale from 0 to 10 with the midpoint level corresponding to 5. The final assessment will be calculated from the sum of individual scores and normalized so that the level 'Meets expectations (5)' will correspond to 70%.

Additional comments may also be provided to capture additional details that the rubrics may not fully capture.

Paper Evaluation

Paper Title:
Student:
The Paper should be 10-12 pages long (double-spaced, not including references or figures) styled in the format of a review article on a translational immunology topic. The paper should be prefaced by a Summary no more than 150 words in length. The body of the paper should provide sufficient background to place the topic in context and should outline the health or medical problem being addressed, translational approaches and problems. The discussion and conclusions should also contain a critical evaluation of the topic.
The paper should adhere to the formal requirements of style, using a 12 point font and including proper formatting, references and footnotes. The paper should be well written and should be relatively free of spelling and grammatical errors.
The following rubric will be used to evaluate the paper:

	Exceeds Expectations	**Meets Expectations**	**Does not meet Expectations**
Document			
Summary	Clearly and succinctly summarizes the key components of the topic, does not require additional information to understand the topic, compels the reader to read the whole document	Acceptable summary of the topic, mostly contains the required information, good introduction to the whole paper	Superficial description of the topic with key elements missing, uncompelling introduction to the paper

Background	Clear description of the health or medical problem, existing state of the art, comprehensive and complete	Good description of the health or medical problem and existing state of the art, mostly complete	Superficial description of the health or medical problem, incomplete description of existing solutions
Content Development	Each paragraph flows to make a coherent whole, content is compelling, illustrates mastery of the subject.	Logical flow to the document with perhaps some gaps or rough transitions between sections	Paragraphs disjointed, lacks flow
Discussion & Conclusions	Puts the topic in its appropriate context, discusses the advances and failures but qualifies them by addressing uncertainties in conclusions, suggests future work related to the topic	Good description of the context of the topic, some qualification of the advances and failures, a reasonable description of future work	Insufficient appreciation of context for the topic with little sense of uncertainties or qualifications, few suggestions on future work
Insight	Thoughtful, creative ideas on the topic, insightful comments on lessons learned, significance for translational immunology in general	Some independent thought on the topic and significance.	Little to no independent thought, no comments on significance
Mechanics	Spelling, punctuation, sentence and paragraph structure all reflect superior writing skill	Spelling, punctuation, sentence and paragraph structure all reflect mostly acceptable writing skill	Spelling, punctuation, sentence and paragraph structure are deficient or flawed.
Sources & Evidence	Appropriate use of primary and secondary sources, creative mix of sources	Mostly appropriate use of sources	Limited or inappropriate use of sources, few primary sources, reference may be out of date

Case Study Presentation Evaluation

Project Title:

Group Members:

The Case Study presentation should be a group effort. The 30 minute presentation should focus on succinctly presenting the translational development of an immunological product. The presentation should provide a concise background that explains the problem to be addressed, the approach or approaches taken, milestones achieved, barriers that were encountered and how they were addressed, with a concluding section that places the project in context, and provides recommendations on future work.

The following rubric will be used to evaluate the presentation:

	Exceeds Expectations	**Meets expectations**	**Does not meet expectations**
Background	Clear description of the unmet need, existing state of the art, comprehensive and complete	Good description of the unmet need and existing state of the art, mostly complete, with a good hypothesis	Superficial description of the unmet need, incomplete description of existing solutions, no particular hypothesis
Content	Lucid description of the methods taken to solve the problem, with a substantial description of the process and milestones achieved	Methods, approaches and milestones are provided with some description of the reasoning behind them	Methods, approaches and milestones are incomplete, with little sense of how they were chosen
Conclusions	Puts the project in its appropriate context, discusses the successes, and achievements but qualifies them by addressing uncertainties in conclusions, suggests future work to fully achieve the goals of the	Good description of the context of the work, some qualification of the results, a reasonable description of future work and some mention of room for improvement	Insufficient appreciation of context for the work with little sense of uncertainties or qualifications, few suggestions on how to improve the project
Organization	Organization of the presentation is clear and consistent, logical and makes the content easy to follow	Organization is mostly clear, some content may be difficult to follow	Organization of the presentation is unorganized, lacks logic, difficult to follow

Language	Language is appropriate for the content and audience but is also imaginative, compelling and enhances the effectiveness of the presentation	Language is appropriate but may be limited in imagination, does not add to the presentation	Inappropriate use of language, turns off or bores the audience
Delivery	Effective use of body language, eye contact and expressiveness, draws the audience into the presentation, the speakers are prepared, polished and confident	Sometimes uses body language etc. effectively, speakers are prepared but may be nervous, lack full confidence	Rarely uses eye contact, presentation is listless or stumbling, prisoners are nervous and appear unprepared
Supporting Materials	Appropriate use of diagrams, charts, multimedia, that are compelling, memorable and support the presentation	Mostly appropriate use of diagrams, charts etc that support the presentation	inappropriate or deficient use of supporting material
Questions	Questions are handled with confidence and respect, answers are appropriate and supported by the evidence	Mostly competent handling of questions	Questions handled poorly, answers lack supporting evidence or are incorrect