

TIGP Bio 2021 Fall Syllabus
Basic Molecular Biology I (B1)

For the most up-to-date syllabus, please visit <https://tigpbp.iis.sinica.edu.tw/tigpbio/index.html>

Place: Room 107, New Building of the Institute of Information Science, Academia Sinica.
Time: Tuesday 09:00-12:00
Chair: Dr. Ueng-Cheng Yang (uyang@nycu.edu.tw), Dr. Sen-Lin Tang (sltang@gate.sinica.edu.tw)
Aim: understanding the key concepts in molecular and cell biology and their experimental underpinnings
Textbook: (Required)
 1. Molecular Cell Biology, 7th edition, by Harvey Lodish et al. Publisher: W. H. Freeman. International Edition (13 Aug, 2012). ISBN-13: 9781464109812.
 Local book store: <http://www.yihscient.com.tw/front/bin/ptdetail.phtml?Part=06585>
 Reference: (Recommended but not required)
 1. Molecular Biology of the Cell, 6th edition, 2014.
<http://www.yihscient.com.tw/front/bin/ptdetail.phtml?Part=06595&Rcg=53601>
 2. Molecular Biology: Principles of Genome Function, 2nd edition, 2014.
<http://www.yihscient.com.tw/front/bin/ptdetail.phtml?Part=06594&Rcg=52559>
 3. Biochemistry: A Short Course, 2nd edition, by Lubert Stryer et al. Publisher: W. H. Freeman (December 23, 2011). ISBN-10: 1429283602, ISBN-13: 978-1429283601.
TA: N/A (Please refers to the lectures respectively shall you have any questions of each class)
Grades: Midterm exam 50%. Final exam 50%.
Note: For **Non-BP student** to register/sit-in any BP course, it is required to gain course chair's permission and follow the steps:
 (1) Submit the hard copy or PDF file of the completed [TIGP Bioinformatics Course Registration Consent Form](#) to the TIGP BP office
 (2) Provide the information via the google form at [BP Class Enrollment Information](#).
 The deadline for above requirement is **the 4th week** of each semester. Signature of corresponding BP Course Chair should be collected and incomplete form will not be accepted.
 ※ Course grade will **NOT** be given (even class enrollment is completed at school) if fail to follow the above procedures.

Week	Date	Topics/Brief Description	Lecturers
1	2021/9/14@ Webex	Molecules, Cells, and Evolution	Dr. Chuan-Hsiung Chang changed to Dr. Ueng-Cheng Yang
2	2021/9/21 (Holiday) →Moved to 2021/9/22	--	--
2	2021/9/22(Wed) @ Webex	Basic Molecular Genetic Mechanisms	Dr. Ueng-Cheng Yang
3	2021/9/28@ Webex	Molecular Genetic Techniques	Dr. Ueng-Cheng Yang
4	2021/10/5@ Webex	Genes, Genomics, and Chromosomes	Dr. Chuan-Hsiung Chang changed to Dr. Ueng-Cheng Yang
5	2021/10/12@ Webex	Protein Structure and Function	Dr. Jie-Rong Huang
6	2021/10/19 Moved to 10/27	--	--
7	2021/10/27(Wed) 14:00-17:00@Webex	Biomembrane Structure and Transport	Dr. Jung-Hsin Lin
8	2021/11/02	Midterm Exam (take-home exam, no class)	
9	2021/11/9@ Webex	Transcriptional Control of Gene Expression	Dr. An-Chi Wei
10	2021/11/16	Post-Transcriptional Gene Control	Dr. Ho-Ming Chen
11	2021/11/23	Cellular Energetics	Dr. Ueng-Cheng Yang
12	2021/11/30	Signal Transduction and G Protein–Coupled Receptors	Dr. Wailap Victor Ng
13	2021/12/7	Signaling Pathways That Control Gene Expression	Dr. Wailap Victor Ng
14	2021/12/14@ Webex	The Eukaryotic Cell Cycle	Dr. An-Chi Wei
15	2021/12/21	Review Week (no class)	
16	2021/12/28	Final Exam (take-home exam, no class)	
17	2022/1/4	Cancer	Dr. Yuh-Shan Jou

TIGP Bio 2021 Fall Syllabus Biological Computing (C1)

For the most up-to-date syllabus, please visit <https://tigpbp.iis.sinica.edu.tw/tigpbio/index.html>

Place: Room 107, New Building of the Institute of Information Science, Academia Sinica
Time: Friday 14:00-17:00
Chair: Dr. Ting-Yi Sung (tsung@citi.sinica.edu.tw)
Aim: The aim of the course is to link issues in computer science to biology and thus capture the interest of students in both areas. It is expected that students will acquire and retain important knowledge about computational biology
Outline: The course provides an introduction to the basic computational concepts and methods used in molecular biology and genetics. It covers classic algorithmic techniques (for examples: divide and conquer algorithm, dynamic programming ...), data structures (e.g. queue, tree...), and common computational problems in biology (such as motif finding, sequence alignment ...). In addition, Bioinformatics approaches for next generation sequencing and the most up-to-date technology will be addressed as well.
Textbook/Reference book: N/A
TA: Yu-Chun Huang **Email:** r01628119@gmail.com
Office hours: Wednesday 16:00-18:00am **Office location:** R314, Institute of Plant and Microbial Biology, Academia Sinica
Grades: Midterm exam 50%. Final exam 50%.
Note: For **Non-BP student** to register/sit-in any BP course, it is required to gain course chair's permission and follow the steps:
 (1) Submit the hard copy or PDF file of the completed [TIGP Bioinformatics Course Registration Consent Form](#) to the TIGP BP office.
 (2) Provide the information via the google form at [BP Class Enrollment Information](#).
 The deadline for above requirement is **the 4th week** of each semester. Signature of corresponding BP Course Chair should be collected and incomplete form will not be accepted.
 ※Course grade will **NOT** be given (even class enrollment is completed at school) if fail to follow the above procedures.

Week	Date	Topics/Brief Description	Lecturers
1	2021/9/17@Webex	Analysis of Algorithms	Dr. Jia-Ming Chang
2	2021/9/24@Webex	Recurrence	Dr. Jia-Ming Chang
3	2021/10/1 Moved to 2021/10/12	--	--
4	2021/10/8@Webex	Introduction to Data Structure (I)	Dr. Yu-Jung Chang
5	2021/10/12 @Webex Move from 2021/10/1	Introduction to Data Structure (II)	Dr. Yu-Jung Chang
5	2021/10/15@Webex	Algorithmic Techniques	Dr. Chen-Ching Lin
6	2021/10/20 (Wed)	Sequence alignment	Dr. Huai-Kuang Tsai
7	2021/10/29	Review week (no class)	--
8	2021/11/5	Midterm Exam	--
9	2021/11/12	Databases: An Overview	Dr. Kai-Chun Liu
10	2021/11/19	Introduction to Data Mining	Dr. Kai-Chun Liu
11	2021/11/26 @N101	Fundamentals of Molecular Evolution and Phylogenetic Tree Construction	Dr. Jinn-Jy Lin
12	2021/12/3	The Analysis of Next Generation Sequencing Data	Dr. Hsin-Nan Lin
13	2021/12/10@Webex	Computational Epigenetics	Dr. Chen-Hsin Yu
14	2021/12/14 (Tues)@Webex	Computational Proteomics	Dr. Ching-Tai Chen
15	2021/12/24	Review Week (no class)	--
16	2021/12/31 (Holiday), Moved to 1/7	Holiday (no class)	--
17	2022/1/7	Final Exam	--
18	2022/1/13@Webex Move from 2021/1/14	Structural Bioinformatics	Dr. Chen-Hsin Yu
18	2022/1/14 Moved to 1/13	--	--

TIGP Bio 2021 Fall Syllabus
Fundamental Statistical Methods in Bioinformatics (S1)

Place: Room 107, New Building of the Institute of Information Science, Academia Sinica.

Time: Thursday 09:00-12:00

Chair: Dr. Shinsheng Yuan (shinshengyuan@gmail.com)

Outline: This course covers the fundamentals of statistics and basic tools for bioinformatics analysis. In the first part students will learn basic statistical concepts and methods, including probability, random variables and distributions, parameter estimation, hypothesis testing, regression analysis, and categorical data analysis. In the second part several commonly used methods in bioinformatics will be introduced, including statistical meta analysis, survival analysis, clustering, classification, and nonparametric statistics.

Textbook: Fundamentals of Biostatistics (author: Bernard Rosner), Cengage Learning.

Reference book: Pattern Recognition (author: Richard O. Duda, Peter E. Hart, and David G. Stork), Wiley.

TA: Jia-Ying Su **Email:** dasiav7@gmail.com **TA Office hours:** Monday 15:00 pm-17:00pm **TA Office location:** N420, IMB, AS

Grades: Midterm exam 50%. Final exam 50%.

Note: For **Non-BP student** to register/sit-in any BP course, it is required to gain course chair's permission and follow the steps:

(1) Submit the hard copy or PDF file of the completed [TIGP Bioinformatics Course Registration Consent Form](#) to the TIGP BP office

(2) Provide the information via the google form at [BP Class Enrollment Information](#).

The deadline for above requirement is **the 4th week** of each semester. Signature of corresponding BP Course Chair should be collected and incomplete form will not be accepted.

※Course grade will **NOT** be given (even class enrollment is completed at school) if fail to follow the above procedures.

For the most up-to-date syllabus, please visit <https://tigppb.iis.sinica.edu.tw/tigppbio/index.html>

Week	Date	Topics/Brief Description	Lecturers
1	2021/9/16@Webex	(1) Introduction to statistics (2) Descriptive statistics (3) Fundamental of molecular biology (4) Genomic data analysis	Dr. Chen-Hsiang Yeang
2	2021/9/23@Webex	(1) Applications in statistical genetics (2) Combinatorial analysis (3) Axioms of probabilities (4) Conditional probability and independence (5) Random variable and distribution function	Dr. Hsin-Chou Yang
3	2021/9/30@Webex	(1) An application in pharmacogenetic study (2) Discrete/continuous/mixed distributions (3) Joint/marginal/conditional distributions (4) Special discrete distributions (5) Introduction to contingency table	Dr. Hsin-Chou Yang
4	2021/10/7@Webex	(1) Continuous random variable (2) Expectation (3) Basic statistics (4) Limit theorems (optional)	Dr. Hsin-Chou Yang
5	2021/10/14@Webex	(1) Unbiasedness (2) Point estimation (substitution principles, least square estimate, maximum likelihood estimate) (3) Interval estimation	Dr. Shinsheng Yuan
6	2021/10/21	(1) Hypothesis testing (2) Applications in cancer researches (3) Type I & type II errors and p-value (4) One-sample and two-sample z-tests (5) One-sample, two-sample, and paired t-tests (6) Bonferroni adjustment, false discovery rate, and q value	Dr. Grace Shieh
7	2021/10/28	Review Week (No class)	
8	2021/11/4	Midterm Exam	
9	2021/11/11	(1) Applications to predictions of drug responses (2) Simple linear regression & inference (3) Diagnostic and remedial measures	Dr. Grace Shieh

		(4) Matrix approach to simple linear regression (5) Multiple linear regression (6) Building the regression model	
10	2021/11/18	(1) Mantel-Haenszel test (2) Survival and hazard functions (3) Kaplan Meier estimate (4) Log-rank test (5) Proportional-hazards model (6) Lung cancer study	Dr. Hsuan-Yu Chen
11	2021/11/25 Moved to 12/17	--	--
12	2021/12/2	(1) Clustering by geometry (K-means, EM algorithm, hierarchical clustering, self-organizing map, principal component analysis, independent component analysis) (2) Clustering on graphs (Basic concepts, max flow – min cut, normal cuts, spectral clustering, and community detection) (3) Advanced topics (Chinese restaurant process and affinity propagation)	Dr. Chen-Hsiang Yeang
13	2021/12/9	(1) Bootstrap (2) One-sample sign test (3) One-sample Wilcoxon signed-rank test (4) Wilcoxon rank-sum test (Mann-Whitney U test) (5) Sign test for paired data (6) Wilcoxon signed-rank test for paired data	Dr. Wei-Chung Liu
14	2021/12/16 @Webex	(1) Kruskal-Wallis test (2) Randomization/permutation test for two-way ANOVA (3) The product-moment correlation coefficient (4) Spearman rank correlation (5) Kendall's coefficient of rank correlation	Dr. Wei-Chung Liu
14	2021/12/17 (Fri) 14:00-17:00 @Webex	(1) Logistic regression (2) Meta analysis (effect size, precision, study weights, summary effect, heterogeneity, fixed-effect model, random-effect model, software)	Dr. Shinsheng Yuan
15	2021/12/23	Review Week (No class)	
16	2021/12/30	Final Exam	

TIGP Bio 2021 Fall Syllabus Programming (Python) (P1)

For the most up-to-date syllabus, please visit <https://tigppb.iis.sinica.edu.tw/tigppbio/index.html>

Place: Room 108, Old Building of the Institute of Information Science, Academia Sinica.

Time: Friday 10:00am-12:00pm

Chair: Dr. John Wang (johnwang@gate.sinica.edu.tw)

Outline:

This course introduces basic aspects of programming language and its application in bioinformatics. First, fundamental programming techniques in Python are introduced. After that, this course focuses on the practical implementation of programs to analyze various biological data. The use of existing available resources from the Internet is also incorporated. Finally, the students implement bioinformatics projects (i.e., motif finding, pattern matching, sequence alignment, biomedical database analysis, etc.)

Textbook: Python for Biologists: A complete programming course for beginners (Martin Jones)

Advanced Python for Biologists (Martin Jones)

(Reference) Python for Everybody - Exploring Data In Python 3 (Charles Russell Severance)

TA (BP): Hsin-Han Lee **Email:** cgjosephlee@gmail.com

Office hours: Tuesday 14:00-16:00 pm

Office location: Room B303, Biodiversity Research Center, Academia Sinica

TA (GSB): Cheng-Kuo Lai **Email:** lihowfun@gmail.com

Office hours: Wednesday 10:00 am-12:00 pm

Office location: B303, Interdisciplinary Research Building, Academia Sinica.

*Due to access control of IRB, please email Cheng-Kuo Lai before you go to TA office.

Grades: Midterm exam 25%. Final exam 30%. Homework 35%. Class performance (10%)

Note: For **Non-BP student** to register/sit-in any BP course, it is required to gain course chair's permission and follow the steps:

(1) Submit the hard copy or PDF file of the completed [TIGP Bioinformatics Course Registration Consent Form](#) to the TIGP BP office

(2) Provide the information via the google form at [BP Class Enrollment Information](#).

The deadline for above requirement is **the 4th week** of each semester. Signature of corresponding BP Course Chair should be collected and incomplete form will not be accepted.

※Course grade will **NOT** be given (even class enrollment is completed at school) if fail to follow the above procedures.

Week	Date	Topics/Brief Description	Lecturers
1	2021/9/17 @Webex	Introduction to Python	Dr. John Wang
2	2021/9/24 @Webex	Basic Elements of Python	Dr. John Wang
3	2021/10/1 @Webex	Basic statements I: branching programs and inputs	Dr. John Wang
4	2021/10/8 @Webex	Basic statements II: iterative programs	Dr. John Wang
5	2021/10/15	Functions: scope rules and passing arguments	Dr. John Wang
6	2021/10/22	Modules, Files, and Structured Types	Dr. Te-Chuan Chiu
7	2021/10/29	Review Week (no class)	
8	2021/11/5	Midterm Exam (take-home exam, no class)	
9	2021/11/12	Regular expressions	Dr. Ching-Fen Chang
10	2021/11/19	Object-oriented programming: classes	Dr. Li Su
11	2021/11/26 @N101	Introduction to Biopython	Dr. Ching-Fen Chang
12	2021/12/3	Data analysis toolbox: NumPy, Pandas, Matplotlib	Dr. Ching-Cher Yan
13	2021/12/10 @Webex	Machine learning I: scikit-learn	Dr. Li Su
14	2021/12/17 Moved to 12/24	--	--
15	2021/12/24 @Webex	Machine learning II: scikit-learn & keras	Dr. Li Su
16	2021/12/31 (Holiday) Moved to 1/7	Holiday (no class)	
17	2022/1/7	Final Exam	

TIGP Bio 2021 Fall Syllabus Seminar

For the latest syllabus, please visit <https://tigpbp.iis.sinica.edu.tw/tigpbio/index.html>

Place: Room 101, New Building of the Institute of Information Science, Academia Sinica.

Time: Thursday 14:00-15:20

Chair: Dr. Chung-Yen Lin (Informatics), Dr. Chien-Ling Lin (Biology), Dr. Wei-Chung Liu (Statistics)

Remarks: Attend any 2 non-BP Seminars (either on campus or off campus is fine) and submit a seminar report for each seminar to advisor/lab professor (Format: 1 page A4, 12pts font, single space) and send the report to BP office after grading is completed by the professor by the end of the semester. Form: [TIGP-BP Seminar Student Report](#)

Grades: Attendance 100% (non-BP seminar included)

Week	Date	Topics/Brief Description	Speaker's Affiliation	Speaker	Host
1	2021/9/16 Moved to 10/14	--	--	--	--
2	2021/9/23 @Webex	Deep-learning-based Speech Enhancement with Its Application to Assistive Oral Communications Devices	Research Center for Information Technology Innovation, Academia Sinica	Dr. Yu Tsao	Hsin-Han Lee
3	2021/9/30 @Webex	Leverage Immuno-Pharmaco-Genomics and Single-Cell Analysis for Translational Studies in Immune-Mediated Diseases and Immunotherapies	Institute of Bioinformatics and Systems Biology, National Yang Ming Chiao Tung University	Dr. Tai-Ming Ko	Yu-Hsin Chen
4	2021/10/7 @Webex	Large-scale Data Analysis for Robotic Yeast One-hybrid Platforms and Multi-disciplinary Studies Using Gatemultiplex	Department of Life Science, National Taiwan University	Dr. Ying-Chung Jimmy Lin	Yu-Ching Hsu
5	2021/10/14 (Moved from 9/16)	Noises and Dynamics in Cells: Mathematical Modeling in Systems Biology.	Institute of Chemistry, Academia Sinica	Dr. Chao-Ping Hsu	Yu-Chun Huang
6	2021/10/21 @Webex	Bioinformatics, Big Data, and Deep Learning: Multifaceted Perspectives for Cancer Research	Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University	Dr. Eric Y. Chuang	Yueh-Hua Tu
7	2021/10/28	Review Week (No class)	--	--	--
8	2021/11/4	Midterm Exam (No class)	--	--	--

9	2021/11/11	Giant Viruses of Eukaryotes: what are they and why are they so giant?	Institute of Plant and Microbial Biology, Academia Sinica	Dr. Chuan Ku	Jia-Ying Su
10	2021/11/18	Transcriptomic Sequence Variation Analysis Reveals Markers, Chromosomal Deletions, and Chimerism of Cavendish Banana Tissue Culture-Generated Cultivars Tolerate to Fusarium Wilt TR4	Agricultural Biotechnology Research Center, Academia Sinica	Dr. Ho-Ming Chen	David Nicola Streuli
11	2021/11/25	Mechanism and Modeling of Human Disease-Associated Near-Exon Intronic Variants that Perturb RNA Splicing	Institute of Molecular Biology, Academia Sinica	Dr. Chien-Ling Lin	Po-Yuan Chen
12	2021/12/2	Novel Schizophrenia Drug Discovery to Neurodegenerative Disease Treatment - an AI Aided Drug Discovery and Development Case	Department of Computer Science and Information Engineering, National Taiwan University	Dr. Yu-feng Jane Tseng	Tzu-Hsiang Lin
13	2021/12/9	How Does the Brain Represent Multidimensional Information of Environments, and How Could It Be Learned?	Institute of Biomedical Sciences, Academia Sinica	Dr. Ching-Lung Hsu	Hsin-Ju Hung
14	2021/12/16 @Webex	From Network Positions, their Importance and Uniqueness, to Biodiversity	Institute of Statistical Science Academia Sinica	Dr. Wei-Chung Liu	Rodrigo Espinoza Silva
15	2021/12/23	Review Week (No class)	--	--	--
16	2021/12/30	Final Exam (No class)	--	--	--

TIGP Bio 2021 Fall Syllabus & Guidelines

Student Presentation

For the latest syllabus, please visit <https://tigpbp.iis.sinica.edu.tw/tigpbio/index.html>

Place: Room 101, New Building of the Institute of Information Science, Academia Sinica

Time: Thursday, 15:30-17:00

Chair: Dr. Chuan-Hsiung Chang (cchang@ym.edu.tw), Dr. Chen-Ching Lin (chaoslin@ym.edu.tw)

*Please read seminar presentation guidelines on the following pages.

*Effective from 2014 Fall semester, all TIGP-BP students are required to present once a semester in seminar.

*First Year Students: The paper should be assigned by your lab professor)

*The following schedule is confirmed and will not be changed. Please contact Dr. Chuan-Hsiung Chang and Dr. Chen-Ching Lin if you do have a difficulty on the assigned date.

*The presenter shall introduce the host and attended professors in the beginning of each seminar.

Week	Date	Topics	Student
1	2021/9/16 (online)	Multimorbidity prediction using link prediction	Yu-Ching Hsu 徐于晴
2	2021/9/23 (online)	DeepImmuno: deep learning-empowered prediction and generation of immunogenic peptides for T-cell immunity	Po-Yuan Chen 陳柏元
3	2021/9/30 (online)	Molecular determinants of response to PD-L1 blockade across tumor types	Hsin-Ju Hung 洪欣如
4	2021/10/7 (online)	Deep learning suggests that gene expression is encoded in all parts of a co-evolving interacting gene regulatory structure	David Nicola Streuli 施大衛
5	2021/10/14	Detection and characterization of lung cancer using cell-free DNA fragmentomes	Yi-Chen Yeh 葉奕成(NYCU)
6	2021/10/21 (online)	Pan-cancer landscape of homologous recombination deficiency	Wen-Ting Tseng 曾文婷
7	2021/10/28 (online)	Data-efficient and weakly supervised computational pathology on whole-slide images	Chi-Tang Wang 王啓唐(NYCU)
8	2021/11/4	Midterm Exam (No class)	
9	2021/11/11 (2 presentations)	Jia-Ying Su: Testing cell-type-specific mediation effects in genome-wide epigenetic studies Tsai-Yang Sun (NYCU): Quality of Care and One-Year Outcomes in Patients with Diabetes Hospitalised for Stroke or TIA: A Linked Registry Study	Jia-Ying Su 蘇家瑩 & Tsai-Yang Sun 孫在陽(NYCU)
10	2021/11/18	CRISPRidentify: identification of CRISPR arrays using machine learning approach	Yu-Chun Huang 黃郁琿

11	2021/11/25	Evolutionarily informed machine learning enhances the power of predictive gene-to-phenotype relationships	Hsin-Han Lee 李昕翰
12	2021/12/2 (2 presentations)	Chien Jung Huang 黃千容(NYCU): Predicting microbiomes through a deep latent space Rodrigo Espinoza Silva 羅德: GenNet framework: interpretable deep learning for predicting phenotypes from genetic data	Chien Jung Huang 黃千容(NYCU) & Rodrigo Espinoza Silva 羅德
13	2021/12/9	MDN: A Deep Maximization-Differentiation Network for Spatio-Temporal Depression Detection	Hao-Jen Deng 鄧皓仁
14	2021/12/16 (online)	Gut-microbiota-targeted diets modulate human immune status	Shu-Chuan Chen 陳淑娟(NYCU)
15	2021/12/23 (online) (2 presentations)	Tzu-Hsiang Lin 林子翔: Genome-wide detection of cytosine methylations in plant from Nanopore data using deep learning Aishwarya Tiwari 艾希雅: Comparative transcriptome analyses reveal genes associated with SARS-CoV-2 infection of human lung epithelial cells	Tzu-Hsiang Lin 林子翔 & Aishwarya Tiwari 艾希雅
16	2021/12/30	Final Exam (No class)	--

< Seminar presentation guidelines on the following pages >

Seminar presentation guidelines for PhD program students:

2021-08-26

This research seminar course is intended to provide students planning a research career in Bioinformatics with the opportunity to develop the skill of critically reading and evaluating research papers. The course consists of a weekly timetabled session in which students will read, present and discuss research papers published on high impact journals. A fixed threshold of impact factors is not imposed. Use your common sense instead.

Guidelines:

1. **Research article:** Each week, students will choose RESEARCH papers to be presented. The paper (+ supplements) pdf file should be emailed to cchang@ym.edu.tw (Dr. Chuan-Hsiung Chang), ChaosLin@ym.edu.tw (Dr.Chen- Ching Lin), tigp.bio@gmail.com (TIGP_Bio), all students in student presentation class, and also other participating professors **at least one week before** your in-class seminar

presentation takes place. Any delay will result in 10 points deducted from your final grade. Please also send the slides to everyone **2 days before** the report. Because some modification may be made right before the report, it is okay if the slides are not the final version.

2. **Article selection:** You are required to select a recent RESEARCH article that was published after September 2020. (Review articles are NOT acceptable.)

3. **Presentations:** Everyone in the class will present one paper. You should plan to talk for around 40 minutes. Starting from this you should initiate a discussion of the paper (so it is a good idea to conclude your slide presentation with a selection of points to consider and discuss). We should plan to have time for a lively discussion of each paper; your job in giving a presentation is to initiate this discussion. Make sure to
 - a. Draw **valid** conclusions from results of your presented paper.
 - b. **Summarize evidence for each conclusion.** (How does the paper support its conclusions?)
 - c. **Compare the results with other similar experiments published previously, if appropriate.**
 - Please refrain from presenting an article written by your supervisor or your friends/classmates. You need to increase the exposure to the breadth and depth of bioinformatics research.
 - Students are encouraged to prepare a few questions for group discussion at the end of the presentation. Students are not expected to simply sit in the class.
 - Please make a rehearsed presentation if you don't know how long your presentation is going to last. An over-length presentation doesn't translate to a good one.

4. **Language of presentation:** You are required to present your research article **in English.**

Evaluation Criteria:

You will be evaluated by the following criteria:

1. Your attendance (10%).
2. Your seminar presentation (70%).
3. Your participation of discussion (20%).

TIGP Bio 2021 Fall

Lab Rotation

All 1st year students:

1. Your lab advisor must be one of the [BP core faculty](#).
2. Inform the BP office for the laboratory you are rotating by [30th September, 2021](#).
3. Submit the [Lab Rotation Form](#) with lab advisor's signatures and score to the BP office by [7th January, 2022](#).

Student	Lab advisor
Hsin-Ju Hung 洪欣如 (2020)	Dr. Grace S. Shieh 謝叔蓉
Aishwarya Tiwari 艾希雅 (2021)	Dr. Shin-Sheng Yuan 袁新盛
Tzu-Hsiang Lin 林子翔 (2021)	Dr. Ho-Ming Chen 陳荷明
Wen-Ting Tseng 曾文婷 (2021)	Dr. Hsuan-Yu Chen 陳璿宇
Hao-Jen Deng 鄧皓仁 (2021)	Dr. Y. Jane Tseng 曾宇鳳
Rodrigo Espinoza Silva 羅德 (2021)	Dr. Hsin-Chou Yang 楊欣洲