

TIGP Bio 2022 Fall Syllabus
Basic Molecular Biology I (B1)

For the latest syllabus, please visit the BP website: <https://tigbp.iis.sinica.edu.tw>

Place: Room 107, New Building of the Institute of Information Science, Academia Sinica.
Time: Tuesday 09:00-12:00
Chair: Dr. Ho-Ming Chen (homing@gate.sinica.edu.tw), Dr. Sen-Ling 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)
 2. Molecular Biology of the Cell, 6th edition, 2014.
<http://www.yihscient.com.tw/front/bin/ptdetail.phtml?Part=06595&Rcg=53601>
 3. Molecular Biology: Principles of Genome Function, 2nd edition, 2014.
<http://www.yihscient.com.tw/front/bin/ptdetail.phtml?Part=06594&Rcg=52559>
 4. 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 refer to the lectures respectively shall you have any questions for each class)
Grades: Midterm exam 50%. Final exam 50%.

【For Non-BP student】

For Non-BP student to register/sit-in any BP course, it is required to gain course chair's permission:
 (1) Basic Enrollment Information form (<http://bit.ly/3g22mfl>)
 (2) TIGP-BP Course Registration Consent Form (<http://bit.ly/3ubl2Bs>)
 ※ Deadline: **the 4th week** of each semester.
 ※ Signature of the course chair should be collected before submission. 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	Evaluation Method
1	2022/9/6 @Webex Only	Molecules, Cells, and Evolution	changed to Dr. Ueng-Cheng Yang (was Dr. Chuan-Hsiung Chang)	HW with a specified deadline: ► Oct. 25th
2	2022/9/13 @Webex Only	Basic Molecular Genetic Mechanisms	Dr. Ueng-Cheng Yang	
3	2022/9/20 @Webex Only	Molecular Genetic Techniques	Dr. Ueng-Cheng Yang	
4	2022/9/27 @Webex Only	Genes, Genomics, and Chromosomes	changed to Dr. Ueng-Cheng Yang (was Dr. Chuan-Hsiung Chang)	
5	2022/10/4	Biomembrane Structure and Transport	Dr. Jung-Hsin Lin	HW with a specified deadline: ► Nov. 11th
6	2022/10/11 @Webex Only	Protein Structure and Function	Dr. Jie-Rong Huang	HW with a specified deadline: ► Oct. 25th
7	2022/10/18	Review Week (no class)	--	
8	2022/10/25	Midterm Exam (take-home exams, no class)	--	
9	2022/11/1 @Webex Only	The Eukaryotic Cell Cycle	Dr. Hsiao-Chun Huang	HW with a specified deadline: ► Dec. 20th
10	2022/11/8	Transcriptional Control of Gene Expression	Dr. Chuan Ku	HW with a specified deadline: ► Nov. 28th
11	2022/11/15 @Webex Only	Cellular Energetics	Dr. Ueng-Cheng Yang	HW with a specified deadline: ► Dec. 20th
12	2022/11/22	Signal Transduction and G Protein–Coupled Receptors	Dr. Wailap Victor Ng	HW with a specified deadline: ► Dec. 29th
13	2022/12/5 (Mon) 9:00-12:00	Signaling Pathways That Control Gene Expression	Dr. Wailap Victor Ng	
14	2022/12/6	Post-Transcriptional Gene Control	Dr. Ho-Ming Chen	HW with a specified deadline: ► Dec. 20th
15	2022/12/13	Review Week (no class)	--	
16	2022/12/20	Final Exam (take-home exams, no class)	--	
17	2022/12/27	Cancer	Dr. Yuh-Shan Jou	no exam

TIGP Bio 2022 Fall Syllabus

Biological Computing (C1)

For the latest syllabus, please visit the BP website: <https://tigbp.iis.sinica.edu.tw>

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

Time: Friday 14:00-17:00

Chair: Dr. Huai-Kuang Tsai (hktsai@iis.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: Po-Yuan Chen **Email:** shepherd71c@gmail.com

Office hours: Tuesday 16:00-18:00 pm **Office location:** Room N802, Institute of Biomedical Sciences, Academia Sinica

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

【 For Non-BP student 】

For Non-BP student to register/sit-in any BP course, it is required to gain course chair's permission:

- (1) Basic Enrollment Information form (<http://bit.ly/3g22mfl>)
- (2) TIGP-BP Course Registration Consent Form (<http://bit.ly/3ub12Bs>)

※ Deadline: **the 4th week** of each semester.

※ Signature of the course chair should be collected before submission. 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	Evaluation Method:
1	2022/9/7	Rescheduled to 2022/9/16	--	--
1	2022/9/9	Holiday-Mid-Autumn Festival (no class)	--	--
2	2022/9/16 @Webex Only	Analysis of Algorithms	Dr. Jia-Ming Chang	in-class exam on midterm exam date
2	2022/9/19 (Mon) 14-17 PM @Webex Only	Recurrence	Dr. Jia-Ming Chang	
3	2022/9/30 @Webex Only	Introduction to Data Structure (I)	Dr. Yu-Jung Chang	in-class exam on midterm exam date
4	2022/10/04 (Tues) 14-17 PM @Webex Only	Introduction to Data Structure (II)	Dr. Yu-Jung Chang	
5	2022/10/7 @Webex Only	Algorithmic Techniques	Dr. Chen-Ching Lin	HW with a specified deadline ► Nov. 4th
6	2022/10/14	Sequence alignment	Dr. Huai-Kuang Tsai	HW with a specified deadline ► Nov. 14th
7	2022/10/21	Review week (no class)	--	--
8	2022/10/28	Midterm Exam	--	--
9	2022/11/4	Databases: An Overview	Dr. Kai-Chun Liu	HW with a specified deadline ► Dec. 23rd
10	2022/11/11	Introduction to Data Mining	Dr. Kai-Chun Liu	
12	2022/11/23 (Wed) 14-17 PM	Fundamentals of Molecular Evolution and Phylogenetic Tree Construction	Dr. Jinn-Jy Lin	HW with a specified deadline ► Dec. 23rd
12	2022/11/25	The Analysis of Next Generation Sequencing Data	Dr. Hsin-Nan Lin	in-class exam on final exam date
13	2022/12/2	Structural Bioinformatics	Dr. Chen-Hsin Yu	HW with a specified deadline ► Dec. 30th
14	2022/12/7 (Wed) 14-17 PM @N101	Computational Proteomics	Dr. Ching-Tai Chen	in-class exam on final exam date
15	2022/12/16	Review Week (no class)	--	--
16	2022/12/23	Final Exam	--	--
17	2022/12/30	Computational Epigenetics	Dr. Chen-Hsin Yu	no exam

TIGP Bio 2022 Fall Syllabus
Fundamental Statistical Methods in Bioinformatics (S1)

For the latest syllabus, please visit the BP website: <https://tigbp.iis.sinica.edu.tw>

Place: Room 107, New Building of the Institute of Information Science, Academia Sinica
Time: Thursday 9:00-12:00
Chair: Dr. Shinsheng Yuan (syuan@stat.sinica.edu.tw; 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: Tzu-Hsiang Lin **Email:** tzuhsiang@gate.sinica.edu.tw
Office hours: Tuesdays, 18:30~20:30 pm **Office location:** Room A622, Agricultural Biotechnology Research Centers, Academia Sinica
Grades: Midterm exam 50%. Final exam 50%.

【For Non-BP student】

For Non-BP student to register/sit-in any BP course, it is required to gain course chair's permission:

- (1) Basic Enrollment Information form (<http://bit.ly/3g22mfl>)
(2) TIGP-BP Course Registration Consent Form (<http://bit.ly/3ubl2Bs>)

※ Deadline: **the 4th week** of each semester.

※ Signature of the course chair should be collected before submission. 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	Sub-topics/Detail Descriptions	Lecturers	Evaluation Method
1	2022/9/8	Descriptive Statistics, Genomic Data Analysis	(1) Introduction to statistics (2) Descriptive statistics (3) Fundamental of molecular biology (4) Genomic data analysis	Dr. Chen-Hsiang Yeang	HW with a specified deadline: Oct. 27th
2	2022/9/15	Probability	(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	HW with a specified deadline: Oct. 16th
3	2022/9/22	Discrete Distributions and Contingency Tables	(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	2022/9/29	Continuous distributions and basic statistics	(1) Continuous random variable (2) Expectation (3) Basic statistics (4) Limit theorems (optional)	Dr. Hsin-Chou Yang	
5	2022/10/6	Parameter Estimation and Confidence Interval	(1) Unbiasedness (2) Point estimation (substitution principles, least square estimate, maximum likelihood estimate) (3) Interval estimation	Dr. Shin-Sheng Yuan	in-class exam on midterm exam date
6	2022/10/13	Hypothesis Testing, P-value and False Discovery Rate	(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 S. Shieh	in-class exam on midterm exam date
7	2022/10/20	Review Week (No class)			
8	2022/10/27	Midterm Exam	--	--	--
9	2022/11/3	Regression Analysis	(1) Applications (2) Simple linear regression & inference (3) Diagnostic and remedial measures (4) Matrix approach to simple linear regression (5) Multiple linear regression (6) Building the regression model	Dr. Grace S. Shieh	in-class exam on final exam date
10	2022/11/10	Survival Data Analysis	(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	HW with a specified deadline: ▶ Dec. 29th
11	2022/11/17	Logistic Regression and Statistical Meta Analysis	(1) Logistic regression (2) Meta analysis (effect size, precision, study weights, summary effect, heterogeneity, fixed-effect model, random-effect model, software)	Dr. Shin-Sheng Yuan	HW with a specified deadline: ▶ Dec. 26th
12	2022/11/24	Clustering	(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	in-class exam on final exam date

13	2022/12/8	Nonparametric Statistics (I)	(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	2022/12/14 (Wed) 9:00-12:00	Nonparametric Statistics (II)	(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	HW with a specified deadline: ▶ Jan. 1st
15	2022/12/15	Review Week (No class)	--	--	--
16	2022/12/22	Final Exam	--	--	--

TIGP Bio 2022 Fall Syllabus

Programming (Python) (P1)

For the latest syllabus, please visit the BP website: <https://tigpbp.iis.sinica.edu.tw>

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): Rodrigo Espinoza Silva **Email:** rodespinosas93@gmail.com

Office hours: Tuesdays 14:00~16:00 pm

Office location: Room R302-7, Institute of Statistical Sciences, Academia Sinica

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

【For Non-BP student】

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(2) TIGP-BP Course Registration Consent Form (<http://bit.ly/3ubl2Bs>)

※ Deadline: **the 4th week** of each semester.

※ Signature of the course chair should be collected before submission. 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	Evaluation Method
1	2022/9/7(Wed) 10-12:00	Introduction to Python	Dr. John Wang	HW with specified deadlines: ▶ Full credit DUE on 11/1/2022 at 23:59. ▶ Submissions will be accepted up to Tuesday 11/15/2022 at -2% per day.
1	2022/9/9	Holiday-Mid-Autumn Festival (no class)	--	
2	2022/9/16	Basic Elements of Python	Dr. John Wang	
3	2022/9/23	Basic statements I: branching programs and inputs	Dr. John Wang	
4	2022/9/30	Basic statements II: iterative programs	Dr. John Wang	
5	2022/10/7 @Webex Only	Functions: scope rules and passing arguments	Dr. John Wang	
6	2022/10/14	Modules, Files, and Structured Types	Dr. Te-Chuan Chiu	
7	2022/10/21	Review Week (no class)	--	
8	2022/10/28	Midterm Exam (take-home exam, no class)	--	
9	2022/11/4 @Webex Only	Regular expressions	Dr. Chih-Ming Chen	HW with a specified deadline: ▶ Dec. 29th
10	2022/11/11	Object-oriented programming: classes	Dr. Chih-Ming Chen	HW with a specified deadline: ▶ Dec. 15th
11	2022/11/18	Introduction to Biopython	Dr. Chih-Ming Chen	
12	2022/11/25	Data analysis toolbox: NumPy, Pandas, Matplotlib	Dr. Ching-Cher Yan	
13	2022/12/2	Machine learning I: scikit-learn	Dr. Li Su	HW with a specified deadline: ▶ Dec. 23rd
14	2022/12/9	Machine learning II: scikit-learn & keras	Dr. Li Su	
15	2022/12/16	Review Week (no class)	--	
16	2022/12/23	Final Exam	--	

TIGP Bio 2022 Fall Syllabus Seminar

For the latest syllabus, please visit the BP website: <https://tigbbp.iis.sinica.edu.tw>

Announcement: <https://www.iis.sinica.edu.tw/en/page/Events/seminar.html>







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






Time: Thursday 14:00-15:20

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

Note: Attend any 2 non-BP Seminars—either on campus or off campus is fine, and submit a seminar report: [TIGP-BP Seminar Student Report \(click to download\)](#) (Format: 1 page A4, 12pts font, single spaced) for each seminar to the advisor/lab professor. After collecting the grading and signature from the professor, send the report to the TIGP-BIO office (tigbbio@gate.sinica.edu.tw) by **December 30th, 2022**.

Grades: Attendance 100% (2 non-BP seminar reports included)

Week	Date	Topics/Brief Description	Speaker's Affiliation	Speaker	Website	Student Host
1	2022/9/8	Modelling Food Webs and Their Statistical Inference	Institute of Statistical Science, Academia Sinica	Dr. Wei-Chung Liu		Jia-Ying Su
2	2022/9/15 Webex only	A Computational Approach for Predicting IL-10- Inducing Immunosuppressive Peptides Using Combinations of Amino Acid Global Features	Department of Epidemiology, Helmholtz Centre for Infection Research, Germany	Dr. Onkar Singh		David Nicola Streuli
3	2022/9/22 Webex only	Loss and Preservation of Duplicated Genes: Phenotypic Consequences and Molecular Mechanisms	Institute of Population Health Sciences, National Health Research Institutes	Dr. Ben-Yang Liao		Tzu-Hsiang Lin
4	2022/9/29 Webex only	Novel Schizophrenia Drug Discovery to Neurodegenerative Disease Treatment - an AI Aided Drug Discovery and Development Case	Graduate Institute of Biomedical Engineering and Bioinformatics, National Taiwan University	Prof. Yu-Feng Jane Tseng		Shang-Kok Ng
5	2022/10/6	Choices Behind the Veil of Ignorance in Formosan Macaques	Department of Economics, National Taiwan University	Prof. Chen-Ying Huang		Rodrigo Espinoza Silva
6	2022/10/13	The Microfluidic System Integrating Surface-Enhanced Raman Spectroscopy for Antimicrobial Susceptibility Testing	Department of Electrical Engineering, National Taiwan University	Prof. Nien-Tsu Huang		Jia-Ying Su
7	2022/10/20	Review Week (no class)	--	--	--	--

8	2022/10/27	Midterm Week (no class)	--	--	--	--
9	2022/11/3	An Evaluation of Noise Reduction Methods for Single-Cell RNA Sequencing Data	Institute of Statistical Science, Academia Sinica	Dr. Shih-Kai Chu		Yu-Chun Huang
10	2022/11/10	A Virtual Reality System to Study Social Interaction in Adult Zebrafish	Institute of Molecular Biology, Academia Sinica	Dr. Kuo-Hua Huang		Po-Yuan Chen
11	2022/11/17	Exploring the Origin and Function of Spermatogenesis Specific Small RNAs in C. Elegans	Institute of Molecular Medicine, National Taiwan University	Prof. Hsin-Yue Tsai		Ping-Yun Ou
12	2022/11/24 Webex only	Computational Approaches in Drug Discovery	College of Engineering, University of Georgia, United States	Prof. Zhong-Ru Xie		Daniel Garcia-Ruiz
14	2022/12/8	TIGP-BP Activity (for BP students)	--	--	--	--
14	2022/12/9 (Fri) 14:00-15:20	Feature Selection Transfers Predictors of Drug Response from Cell Lines to Patients	Institute of Statistical Science, Academia Sinica	Dr. Grace S. Shieh		Tzu-Hsiang Lin
15	2022/12/15	Review Week (no class)	--	--	--	--
16	2022/12/22	Final Exam Week (no class)	--	--	--	--

TIGP-BIO 2022 Fall Syllabus & Guidelines

Student Presentation

For the latest syllabus, please visit the BP website: <https://tigbp.iis.sinica.edu.tw>

Place: Online (Skype): <https://join.skype.com/ycvKdxnlMeku>

Time: Thursday, 15:30-17:00

Chair: Dr. Chuan-Hsiung Chang (cchang@nycu.edu.tw), Dr. Chen-Ching Lin (chenching.lin@nycu.edu.tw)

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

*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 difficulty with the assigned date.

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

Week	Date	Topic	Student
1	2022/9/8	No class	
2	2022/9/15	Network-based machine learning approach to predict immunotherapy response in cancer patients	Rodrigo Espinoza Silva 羅德
3	2022/9/22	Effects of sequence motifs in the yeast 3' untranslated region determined from massively parallel assays of random sequences	Tzu-Hsiang Lin 林子翔
4	2022/9/29	Enhanced detection of minimal residual disease by targeted sequencing of phased variants in circulating tumor DNA	Shang-Kok Ng 黃襄國
5	2022/10/6	Deep neural network trained on gigapixel images improves lymph node metastasis detection in clinical settings	Chi-Tang Wang 王啓唐
6	2022/10/13	Prediction of neo-epitope immunogenicity reveals TCR recognition determinants and provides insight into immunoediting	Po-Yuan Chen 陳柏元
7	2022/10/20	Review Week (no class)	--
8	2022/10/27	Midterm Exam (no class)	--
9	2022/11/3	Integrated cohort of esophageal squamous cell cancer reveals genomic features underlying clinical characteristics	Chien-Jung Huang 黃千容
10	2022/11/10	Deep transfer learning of cancer drug responses by integrating bulk and single-cell RNA-seq data	Ping-Yun Ou 歐秉昀
11	2022/11/17	Identification of shared and disease-specific host gene-microbiome associations across human diseases using multi-omic integration	Shu-Chuan Chen 陳淑娟
12	2022/11/24	Developmental Deconvolution for Classification of Cancer Origin	Yi-Chen Yeh 葉奕成

13	2022/12/1	Host-mediated selection impacts the diversity of - Nature	Daniel Garcia-Ruiz 丹尼爾加西亞
14	2022/12/8	No class	
15	2022/12/15	Review Week (no class)	--
16	2022/12/22	Final Exam (no class)	--

< Seminar presentation guidelines on the following pages >

Seminar presentation guidelines for Ph.D. 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@nycu.edu.tw (Dr. Chuan-Hsiung Chang), chenching.lin@nycu.edu.tw (Dr. Chen- Ching Lin), tigpbio@gate.sinica.edu.tw (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 modifications may be made right before the report, it is okay if the slides are not the final version.
1. **Article selection:** **You are required to select a recent RESEARCH article that was published after September 2020. (Review articles are NOT acceptable.)**
2. **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.

3. **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 2022 Spring

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, 2022](#).
3. Submit the [Lab Rotation Form](#) with lab advisor's signatures and score to the BP office by [30th December, 2022](#).

Student (2022 enrolled)	Lab advisor
Ping-Yun Ou 歐秉昀	Dr. Hsuan-Cheng Huang 黃宣誠
Shang-Kok Ng 黃襄國	Dr. Huai-Kuang Tsai 蔡懷寬
Daniel Garcia-Ruiz 丹尼爾加西亞	Dr. Hsiao-Han Chang 張筱涵