

GMS-BI-793 Final paper instructions, Spring, 2020

The final paper is due May 8, 2020

Select a primary paper from the list below. If you have a paper that you wish to use that is not on the list, please send it to one of the instructors. If the instructor approves, you may use that as your primary paper.

Claim this paper by emailing Joe Zaia (jzaia@bu.edu). Each student must select a different primary paper.

Choose two other related papers from the recent literature.

Write a paper using the following format:

Written commentary. Describe each of the three papers, pointing out the major features of the research, important novel results and provide criticism of any flaws you see in either the methods or the conclusions.

Proposed research project. Describe a project that would extend the observations made in these three papers. Include the following:

- i. Rationale for the proposed work
- ii. Proposed experiments
- iii. Expected results and significance
- iv. Description of possible pitfalls/difficulties that may be encountered and alternative strategies.

The project should be one that a graduate student could accomplish in about one year.

Total paper length should be 10-12 pages, double-spaced. It should be delivered to 670 Albany St, 5th floor (CEC, CL, MM or JZ) on or before the due date.

Include copies of the three papers chosen for discussion.

Reminder: You must write the entire paper in your own words. To copy any text from any source and use it in your paper without making proper bibliographic reference is plagiarism.

<http://en.wikipedia.org/wiki/Plagiarism>

List of primary papers:

1. Egertson, J. D.; Kuehn, A.; Merrihew, G. E.; Bateman, N. W.; MacLean, B. X.; Ting, Y. S.; Canterbury, J. D.; Marsh, D. M.; Kellmann, M.; Zabrouskov, V.; Wu, C. C.; MacCoss, M. J. "Multiplexed MS/MS for improved data-independent acquisition" *Nature methods* **2013**, *10*, 744-6.
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3. Harris, G. A.; Nicklay, J. J.; Caprioli, R. M. "Localized in situ hydrogel-mediated protein digestion and extraction technique for on-tissue analysis" *Anal Chem* **2013**, *85*, 2717-23.
4. Huttenhain, R.; Surinova, S.; Ossola, R.; Sun, Z.; Campbell, D.; Cerciello, F.; Schiess, R.; Bausch-Fluck, D.; Rosenberger, G.; Chen, J.; Rinner, O.; Kusebauch, U.; Hajdich, M.; Moritz, R. L.; Wollscheid, B.; Aebersold, R. "N-glycoprotein SRMATlas: a resource of mass spectrometric assays for N-glycosites enabling consistent and multiplexed protein quantification for clinical applications" *Molecular & cellular proteomics : MCP* **2013**, *12*, 1005-16.
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9. Zhu, Z.; Su, X.; Clark, D. F.; Go, E. P.; Desaire, H. "Characterizing O-linked glycopeptides by electron transfer dissociation: fragmentation rules and applications in data analysis" *Anal Chem* **2013**, *85*, 8403-11.
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11. Yang, Z.; Halim, A.; Narimatsu, Y.; Jitendra Joshi, H.; Steentoft, C.; Schjoldager, K. T.; Alder Schulz, M.; Sealover, N. R.; Kayser, K. J.; Paul Bennett, E.; Levery, S. B.; Vakhrushev, S. Y.; Clausen, H. "The GalNAc-type O-Glycoproteome of CHO cells characterized by the SimpleCell strategy" *Mol Cell Proteomics* **2014**, *13*, 3224-35.
12. Zhu, Z.; Su, X.; Go, E. P.; Desaire, H. "New Glycoproteomics Software, GlycoPep Evaluator, Generates Decoy Glycopeptides de Novo and Enables Accurate False Discovery Rate Analysis for Small Data Sets" *Anal Chem* **2014**, *86*, 9212-9.
13. Zhang, B.; Wang, J.; Wang, X.; Zhu, J.; Liu, Q.; Shi, Z.; Chambers, M. C.; Zimmerman, L. J.; Shaddock, K. F.; Kim, S.; Davies, S. R.; Wang, S.; Wang, P.; Kinsinger, C. R.; Rivers, R. C.; Rodriguez, H.; Townsend, R. R.; Ellis, M. J. C.; Carr, S. A.; Tabb, D. L.; Coffey, R. J.; Slebos, R. J. C.; Liebler, D. C.; the, N. C.

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 15. Bamberger, C.; Pankow, S.; Park, S. K.; Yates, J. R., 3rd "Interference-free proteome quantification with MS/MS-based isobaric isotopologue detection" *J Proteome Res* **2014**, *13*, 1494-501.
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