Neuro Journal Club Paper Selection Tips

A key to picking a journal club paper is to realize that only a subset of great scientific papers make great journal club papers. Good selections for journal club tend to be on the short, “newsy” side and tell a story that reports a fascinating new discovery, clarifies some basic principle that extends beyond its subfield, or addresses some long-standing question in the field. This doesn’t mean that all papers should come from Nature, Science, Journal of Neuroscience, etc. (though see caveats below), but these journals can be good sources for journal club papers. In addition, it is a good idea to pick a paper published within the last year, although this can be stretched for particularly interesting papers.

There is no requirement that you choose something unrelated to what you do, or related. Both can be fun.

Try to choose among several papers; don’t consider a single paper and decide “yea” or “nay”, but consider several and choose the one you think will provide the best experience for the audience. When in doubt, see the suggestion box.

2 examples of past Neuro Journal Club glory:

“Epigenetic programming by maternal behavior” (Nature Neurosci, 2004) by Jennifer Wolff. In one paper, we neuroscientists were introduced to epigenetics (new to us non-molecular types), and learned about an important new discovery on the relationship between maternal behavior (whether by adoptive or biological mothers) and gene expression, and how this gene expression impacted stress responses later in life.

“The sleep disorder canine narcolepsy is caused by a mutation in the hypocretin (orexin) receptor 2 gene” (Cell, 1999) and “Narcolepsy in orexin knockout mice: molecular genetics of sleep regulation” (Cell, 1999) by Michael Rosbash. Michael presented 2 papers that were published nearly simultaneously, one the culmination of a 30 year study of narcoleptic dogs that implicated a mutation in the orexin receptor gene, and another paper that found that a mouse with the orexin ligand knocked out exhibited narcoleptic symptoms. So, 2 genetic studies that implicated a single ligand/receptor pair as the root of a major neurological disorder.

Try to avoid these situations:

The Too-Long Paper: “Projection of the mammalian superior colliculus upon the dorsal lateral geniculate nucleus: Organization of tectogeniculate pathways in nineteen species”, by Harting et al 2004. 31 pages. A classic. But the audience may zone out by species number 3. (“. . .and then the 17th guy walks into the bar.”) A great paper that is too long for journal club.

The Paper: You select a paper that you know is bad, and you spend the whole presentation wondering aloud how the authors came to be scientists and what the reviewers were smoking when they allowed this drivel to be published. Criticism is good, but it is best to pick a paper that has real strengths.

The Obscure Paper: “Functional magnetic resonance imaging of humans during underwater basket weaving tasks”. This is from Obscure Brain Imaging, but there is Obscure Molecular Genetics, Obscure Neuroanatomy, Obscure Psychology, etc. It might be interesting to a few experts, but consider a broader audience. If you’re unsure, ask your colleagues (students, postdocs, faculty) for opinions.

The Meatless Paper: The paper that starts out with an interesting idea but then doesn’t deliver nearly enough substance to be satisfying.

The “Duh” Paper: The paper that uses outstanding new technology to show absolutely positively without a doubt that something that pretty much had to be true, is, in fact, true.

The “Duh” Paper in a flashy journal: For some reason, the short, newy, flashy journals tend to publish a lot of “Duh” papers. So even though Nature and Science publish papers that are almost always an appropriate length for journal club, avoid the temptation to search these journals exclusively, and make sure that the paper you pick really tells us something new about how the brain works and isn’t a “Duh”.

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