Propositions

Accompanying the thesis

Chemical Tools to Study Lipid Signaling

1. Many fields would greatly benefit from increased synthetic or commercial availability of chemical biology tools.
   This thesis

2. Both the diversity and synthetic difficulty of polyunsaturated fatty acid derivatives has hindered the investigation of their immunomodulatory effects.
   This thesis, chapters 3 and 4

3. The bounty of useful molecules mother nature provides is greatly underappreciated.
   This thesis, chapters 3, 5, 6, and 7

4. The discovery that not only free fatty acids have oxidative metabolites has made the field dramatically more complex.
   Watson, J. E.; Kim, J. S.; Das, A. *Prostaglandins & Other Lipid Mediator*s **2019**, 143, 106337.

5. When given no other choice, lipids will either accumulate in the cell or on their vessel.
   Glaser, S. T.; Kaczocha, M.; Deutsch, D. G. *Life Sciences* **2005**, 77 (14), 1584–1604.

6. The complexity of lipid signaling makes the use of simplified model systems a dangerous affair.

7. When reviewing a field of research and over half the cited work is your own, something is fishy.
   Serhan, C. N.; Levy, B. D. *J. Clin. Invest.* **2018**, 128 (7), 2657–2669.

8. The beneficial effects of supplementing dietary omega-3 fatty acids are not as dramatic as the multi-billion dollar industry suggests.

9. Although polyunsaturated fatty acids are considered unstable to oxygen and light, there's not much of that inside the body as long as all goes well.

10. Finding lipid-protein interactions is like searching a needle in a stack of needles.

11. When synthesizing PUFAs, alkynes are best skipped.