1171-13-179   **Hailong Dao*** (`hdao@ku.edu`), 405 Snow Hall, 1460 Jawhawk Blvd, Lawrence, KS 66045. *On monomial ideals with $N_{d,p}$ property.* Preliminary report.

Let I be a homogenous ideal in a polynomial ring in n variable s over a field. I is said to satisfy $N_{d,p}$ if it is generated by forms of degree d and has only linear syzygies for the first $p - 1$ steps. These properties have inspired a rather large body of work by algebraists and geometers. However, many basic questions remain, even for monomial ideals. Are there simple combinatorial criteria? How large can the regularity of such ideals be? What about their powers? I will describe our efforts to give some answers to these questions, and as usual, the many more new questions that arise. Joint work with David Eisenbud. (Received August 10, 2021)