1172-14-260   **Sankhaneel Bisui*** (`sbisui@tulane.edu`), , Canada, and **Eloísa Grifo** (`grifo@unl.edu`), **Huy Tài Hà** (`tha@tulane.edu`) and **Thái Thành Nguyễn** (`tnguyen11@tulane.edu`). *Stable Harbourne–Huneke Containment and Chudnovsky's Conjecture.*

Nagata raised the following fundamental question:

Q: Given a finite set of points $X = \{P_1, \ldots P_s\} \subset \mathbf{P}^2_{\mathbb{C}}$ what is the minimal degree, $\alpha_x(m)$ of a hyper-surface that passes through the points with multiplicity at least m?

Chudnovsky provided a conjectural answer to the above question. Chudnovsky's conjecture has an equivalent statement involving a lower bound of the Waldschmidt constant of the ideal defining points. Harbourne and Huneke gave a containment conjecture involving the symbolic and the ordinary powers of the ideals, which implies Chudnovsky's conjecture. We study stable version of the containment conjecture and consequently, we prove Chudnovsky's conjecture for a large number of general points. In this talk, I will introduce Chudnovsky's conjecture, the containment conjectures, and the tools that we used. I will be presenting the results from our joint work with Eloísa Grifo, Huy Tài Hà, and Thái Thành Nguyễn. (Received August 30, 2021)