By Jan Velinger  
October 23, 2018

Charles University announced on Tuesday it is receiving its third ERC grant in 2018. Grants are awarded by the European Research Council; previous CU candidates enjoyed similar such success back in July.

Then, Matyáš Fendrych of the Faculty of Science (studying cell division and growth in plant) and Ondřej Pejcha of the Faculty of Mathematics and Physics (focussing on the interactions of binary stars) received ERC Starting Grants, playing a key role in funding research.

On Tuesday, October 23, it was confirmed that internationally recognised mathematician Jaroslav Nešetřil of Charles University’s Institute for Theoretical Computer Science, together with colleagues László Lovász from ELTE University in Budapest and László Barabási of Central European University in Budapest, will receive an ERC Synergy Grant to bolster their theoretical research into dynamical networks.
Professor Nešetřil said the aim was “to build a mathematically sound theory of dynamical networks” and to try and “transform the understanding of complex systems and prepare the ground for applications in multiple disciplines.

“Networks define our life. They are essential to biology, communications, social and economic systems, they influence virtually all areas of science and technology. But their workings are not fully understood.”
Of particular importance is cooperation between specialists across institutions, in this case linking Budapest and Prague. Professor Jaroslav Nešetřil again:

“Both graph theory in mathematics and the study of networks have made major conceptual advances in the past decade. However, research communities working in these two disciplines had little conversation between each other, and that limited our insight.

“This grant can potentially change [the situation], [helping us to construct] a coherent theory of dynamical networks, and [to exploit] its applications and predictive power to various real systems. To enhance the wider impact of the proposed mathematical advance.

 “[We] plan to establish steady links with experts from different domains that encounter and explore networks, from cell biology to brain science and transportation and communication networks, inspiring with novel questions and helping the application of our advances in these domains.”