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Student Collaborative Networks and Academic Performance DAVID SCHMIDT, ARIEL BRIDGEMAN[1], PATRICK KOHL, Colorado School of Mines — Undergraduate physics students commonly collaborate with one another on homework assignments, especially in more challenging courses. However, there currently exists a dearth of empirical research directly comparing the structure of students' collaborative networks to their academic performances in lower and upper division physics courses. We investigate such networks and associated performances through a mandated collaboration reporting system in two sophomore level and three junior level physics courses during the Fall 2012 and Spring 2013 semesters. We employ social network analysis to quantify the structure and time evolution of networks involving approximately 140 students. Analysis includes analytical and numerical assignments in addition to homework and exam scores. Preliminary results are discussed.

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