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Doug Wheeler is a 4th year MD-PhD student in the Tri-Institutional Cornell, MSKCC, Rockefeller University MD-PhD program in New York City.

He joined the Sawyers Lab in July 2007 is working jointly in the Sawyers Lab and the Sabatini Laboratory at MIT/Whitehead Institute/Broad Institute in Cambridge, MA.

Doug is primarily interested in the natural product rapamycin, which is a small molecule inhibitor of the mTOR (mammalian Target Of Rapamycin) kinase. mTOR is a master regulator of cellular growth and proliferation that regulates the kinases S6K and Akt/PKB. Rapamycin has many different effects on cancer cell lines and in clinical tumors in that it paradoxically can upregulate or inhibit the activity of Akt/PKB.

Given that rapamycin holds significant clinical promise as an antineoplastic agent and that the signaling mechanisms that regulate Akt activity in response to rapamycin are still not fully known, Doug will screen shRNA libraries that target functional groups of genes (e.g. kinases, GTPases, phosphatases, etc.) to ask which genes are involved in regulating Akt activation in response to exposure to rapamycin. Doug, as part of both the Sawyers and Sabatini lab is undertaking this work with financial support from the Starr Cancer Consortium, which awarded Sawyers and Sabatini a 1 million dollar, 2-year grant to study the effects of rapamycin on Akt.