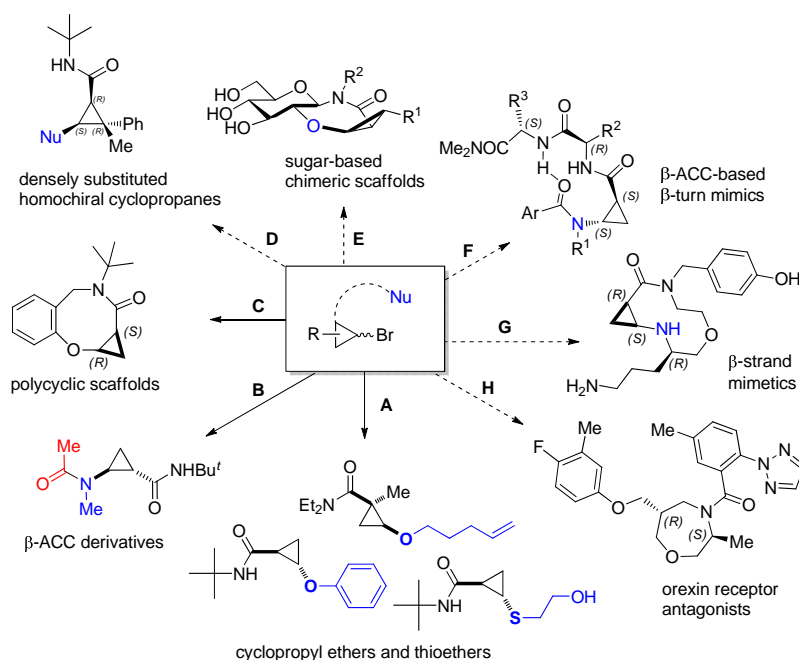


REU students joining Michael Rubin's research group will be able to participate in several projects dealing with development of new synthetic methodologies of small cycles. In particular, we are interested in additions of various non-symmetric entities across strained C=C bond of cyclopropenes, and formal nucleophilic substitution of bromocyclopropanes. The latter reaction was recently discovered in our labs and proved to be an extremely efficient instrument for diastereoselective assembly of cyclopropyl ethers and thiols (**A**), beta-aminocyclopropyl acid derivatives (**B**), and bicyclic scaffolds containing a medium heterocyclic ring (**C**). Further investigation would involve synthetic studies towards homochiral cyclopropanes (**D**). We also plan to investigate the approaches to synthetically challenging heteroatom-containing mono-, bi- and tricyclic systems, spanning some of the privileged scaffolds with extensive biological profiles (**H**), as well as entirely new, unexplored architectures (**E-G**).



For publications co-authored by undergraduate students from Michael Rubin's group, see:

- 1) Rubina, M.; Woodward, E. W.; Rubin, M. *Org. Lett.* **2007**, 9(26), 5501-5504.
- 2) Sherrill, W. M.; Kim, R.; Rubin, M. *Tetrahedron* **2008**, 64(37), 8610-8617.
- 3) Sherrill, W. M.; Kim, R.; Rubin, Michael. *Synthesis* **2009**, (9), 1477-1484.
- 4) Banning, J. E.; Prosser, A. R.; Rubin, M. *Org. Lett.* **2010**, 12(7), 1488-1491.
- 5) Kim, R.; Sherrill, W. M.; Rubin, M. *Tetrahedron* **2010**, 66(27-28), 4947-4953.
- 6) Prosser, A. R.; Banning, J. E.; Rubina, M.; Rubin, M. *Org. Lett.* **2010**, 12(18), 3968-3971.