

SUMMER SEMESTER 2023

RTG 2756 CYTAC SEMINAR SERIES

TUESDAY, JUNE 6,
17:15 IN HS5

CYTAC

RTG 2756

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UNBREAKABLE BONDS: UNLOCKING ADHESINS' EXTREME FORCE-RESILIENCE



Staphylococci bacteria weaponize their virulence factors to cling onto hosts, using biofilms as protective shields against antibiotics. Key to this resilience are adhesins, especially MSCRAMMs, that hold on tightly under extreme forces. In our research we combine simulations with experiments to investigate

these adhesins under force load. Our results show that adhesins form the most force-resilient protein complexes known to date, as they can withstand forces equivalent to the ones that would break covalent bonds. Interestingly, our new findings show that methicillin-resistant *S. aureus* (MRSA) strains displays increased resilience due to adhesin mutations. Amid rising antibiotic resistance, targeting these adhesins could offer a new antimicrobial strategy.