LESS THAN 20 YEARS SINCE GRADUATING FROM MILLERSVILLE UNIVERSITY WITH A B.S. DEGREE IN CHEMISTRY WITH BIOCHEMISTRY OPTION, DR. THOMAS BERNHARDT HAS MADE HIS MARK AS ONE THE WORLD’S LEADING MICROBIOLOGISTS, FOCUSING HIS EXPERTISE ON THE URGENT THREAT OF ANTIBIOTIC RESISTANCE.

DR. BERNHARDT’S FOUR YEARS AT MILLERSVILLE HINTED AT WHAT HE WOULD ACHIEVE LATER IN LIFE. AS AN UNDERGRADUATE STUDENT, HE WAS HONORED WITH THE FRESHMAN CHEMISTRY AWARD, ORGANIC CHEMISTRY AWARD, RICHARD SASIN ENDOWED SCHOLARSHIP IN CHEMISTRY, AND SOUTHEASTERN PENNSYLVANIA SECTION OF THE AMERICAN CHEMICAL SOCIETY AWARD. HE RECEIVED HIS DOCTORATE IN BIOCHEMISTRY AND BIOPHYSICS AT TEXAS A&M UNIVERSITY, WHERE HE WAS MENTORED BY DR. RYLAND YOUNG IN RESEARCHING HOW SIMPLE BACTERIA VIRUSES DESTROY BACTERIAL CELLS WHEN THEY REPLICATE. FOR HIS WORK AT A&M, DR. BERNHARDT RECEIVED THE PRESTIGIOUS NAT STERNBERG THESIS PRIZE, ADMINISTERED BY COLD SPRING HARBOR LABORATORIES, FOR THE MOST OUTSTANDING PH.D. THESIS IN BACTERIAL MOLECULAR BIOLOGY. AT CASE WESTERN RESERVE UNIVERSITY, HE WAS AWARDED THE KRAMPITZ AWARD FOR EXCELLENCE IN POSTDOCTORAL RESEARCH FOR HIS WORK IN THE MOLECULAR MECHANISMS UNDERLYING BACTERIAL CELL DIVISION.

A RISING STAR AT HARVARD MEDICAL SCHOOL’S INTERNATIONALLY ACCLAIMED MICROBIOLOGY AND IMMUNOBIOLOGY DEPARTMENT, DR. BERNHARDT WAS PROMOTED TO FULL PROFESSOR WITH TENURE IN JUST NINE YEARS. HIS RESEARCH LABORATORY’S GROUNDBREAKING WORK ON BACTERIAL CELL WALL ASSEMBLY IS FUNDED BY GRANTS FROM THE NATIONAL INSTITUTES OF HEALTH. THE PROCESS OF CELL WALL ASSEMBLY IS THE TARGET OF MANY OF OUR MOST EFFECTIVE ANTIBIOTICS, INCLUDING PENICILLIN AND RELATED DRUGS. HOWEVER, RESISTANCE TO THESE DRUGS IS ON THE RISE. “ANTIBIOTIC RESISTANCE IS A MAJOR THREAT TO OUR HEALTHCARE SYSTEM, JEOPARDIZING MEDICAL ADVANCEMENTS SUCH AS CHEMOTHERAPY. ORGAN TRANSPLANTS AND JOINT REPLACEMENT SURGERY,” SAYS DR. BERNHARDT. HE IS THE RECIPIENT OF MANY FELLOWSHIPS AND AWARDS AT THE HARVARD MEDICAL SCHOOL, INCLUDING THE MENTORING AWARD FROM THE HARVARD BIOLOGICAL AND BIOMEDICAL SCIENCES GRADUATE PROGRAM.

TO HELP COMBAT ANTIBIOTIC RESISTANCE, DR. BERNHARDT COLLABORATES WITH RESEARCHERS IN HARVARD’S DEPARTMENT OF MICROBIOLOGY AND IMMUNOBIOLOGY, AS WELL AS THE CHEMISTRY AND CHEMICAL BIOLOGY DEPARTMENT, TO UNDERSTAND THE FUNDAMENTAL MECHANISMS BY WHICH BACTERIA BUILD THEIR CELL WALL. THE INSIGHTS GAINED FROM THESE STUDIES PROMISE TO FACILITATE THE DEVELOPMENT OF ANTIBIOTICS THAT CAN SAVE LIVES THROUGHOUT THE WORLD.