

Biotechnology Program

Novato Unified School District

San Marin High School

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The San Marin Biotechnology program was selected as one of the five Marin County high school programs to participate in the Northern California Career Pathways Alliance (NCCPA) grant program. The NCCPA facilitates the creation of educational pathways to career success for high school and community college students, while fostering economic and workforce development to benefit students, employers, and the community. Students are exposed to a continuum of increasingly sophisticated standards-based curriculum integrating academic and technical education. NCCPA coordinates efforts to provide Pathway Coaches to work with core and Career Technical Education teachers to create curriculum that prepares students for the region's high-wage, high-need, and high-growth jobs. As a result of the implementation of this grant, the Biotechnology program will be renamed to the Biotechnology Academy and expanded to include students in grades 9 through 12 over the next several years. A College and Career Readiness Hub, to be located on the SMHS campus, will function as a 21st-Century Learning Lab where students can access support services and post-secondary transition guidance. The NCCPA Work-Based Learning Coordinator (to be hired) will make meaningful industry connections to support students with real work experiences such as career mentoring, industry tours, job shadowing, and internship opportunities. The two Biotechnology teachers are each given .2 FTE to plan curriculum, develop work-based learning opportunities, and collaboratively plan with other academic core teachers.



San Marin High School's Biotechnology program has served more than 250 students enrolled in Biotechnology 1 and Biotechnology 2. The program has expanded from two sections to four sections this year, requiring additional teaching staff.

Students in Principles of Biotechnology 1 learn laboratory skills and techniques used in the field and study topics such as bioethics, careers in biotechnology, uses of databases and other resources, scientific recordkeeping, communication of data, and the process of product research and development. Students in Principles of Biotechnology 2 learn advanced laboratory skills and techniques used in the field and study topics such as plant reproduction, manipulating and studying plants and discovering new medicines, genomics, DNA studies, proteomics and proteins studies, careers in biotechnology, and uses of databases and research development. Student internships at the Buck Institute for research on aging are a highlight of the students' experience in the Biotechnology program.

To meet the needs of local business and industry, San Marin High School and College of Marin are collaborating to establish a Biotechnology program at College of Marin. SMHS students will experience a seamless transition from high school to college through the development of the program and articulation agreements. The unique opportunities of the existing Biotechnology program, the implementation of the NCCPA Biotech Partners grants, and the proposed development of a bio technology program at College of Marin make the San Marin High School Biotechnology program an exemplary system of powerful teaching and learning.