UC San Diego

Search for the Dean, School of Physical Sciences
University of California San Diego
La Jolla, California

The University of California San Diego (UC San Diego) seeks an accomplished, inspirational, and effective leader to serve as the next Dean of the School of Physical Sciences (SPS). Founded in the university's earliest days, the School represents a crucial cornerstone of the history and future success of UC San Diego. As the campus concludes an extraordinary multi-billion-dollar fundraising campaign, UC San Diego and the Physical Sciences community are poised to further elevate its prominence through globally preeminent research, educational innovation, and scientific discoveries to advance society. This is an opportunity for a visionary scholar-administrator to build an exciting future for the School by strengthening its intellectual distinction, forging interdisciplinary partnerships in areas such as engineering, the life and health sciences, mathematical sciences, data sciences, earth, atmospheric and marine sciences, materials science, and renewable energy, whilst ensuring successful and sustainable growth across the School.

Since its founding in 1960, UC San Diego has become one of the top 20 research universities in the world — a rapid ascent that is a testament to the excellence and entrepreneurial nature of UC San Diego's faculty, staff, and students. Under the leadership of Chancellor Pradeep K. Khosla, UC San Diego recently closed its remarkable 10-year campaign through which more than $3 billion was raised, making UC San Diego the youngest university in the nation to reach a multi-billion-dollar milestone in a single campaign. As a result of this significant fundraising effort and guided by UC San Diego's strategic plan, the campus is transforming itself culturally, physically, and intellectually through a sustained focus on five priority areas that include student experience and success, diversity and access, interdisciplinary research, community enrichment, and the development of a supportive infrastructure. As UC San Diego continues to grow, the campus aims to serve the greater community as a premiere inclusive destination for arts, culture, healthcare, and lifelong education, providing students of all ages with opportunities for academic and professional success.

Currently, UC San Diego comprises seven undergraduate colleges, and twelve academic and graduate and professional schools, with a combined enrollment of over 42,000 students. The university is also an academic and research powerhouse, generating $1.64 billion in sponsored research funding in fiscal year 2022. With over 37,000 full- and part-time academic and staff employees, UC San Diego is the largest employer in San Diego County, bringing with it a significant economic footprint on the region. In addition, a range of prominent pharmaceutical and biotech companies and industry collaborators can be found at the doorstep of the UC San Diego campus, providing ample opportunities to fulfill the university's aspirations in research, teaching, service, and student success. More details about the University of California can be found in Appendix I.

The Physical Sciences faculty in Chemistry and Biochemistry, Mathematics, and Physics are some of the world's most renowned and have included six Nobel Laureates, two Fields Medalists, four National Medal of Science recipients, two Presidential Medal of Freedom awardees, 35 Members of the National Academy of Sciences, and 29 Members of the American Academy of Arts and Sciences. Reporting to Executive Vice Chancellor Elizabeth H. Simmons, a theoretical high-energy physicist and a Distinguished Professor in the Physics department, the Dean will be responsible for the strategic leadership of the School, aligning schoolwide and departmental visions to elevate their distinct national profiles. Surrounded by an abundance of talented researchers and scholars, the Dean will creatively leverage the entire UC San Diego community — from the Schools of Arts and Humanities, Biological Sciences, Medicine and Social Sciences, Halıcıoğlu Data Science Institute, Jacobs School of Engineering, Scripps Institution of Oceanography, Skaggs School of Pharmacy and Pharmaceutical Sciences to the Wertheim School of Public Health and Human Longevity Sciences and beyond — for collaboration and innovation that will help determine the next chapter of success for the School.

The next Dean will play a key role in setting strategic goals, building a healthy and inclusive culture, recruiting and developing talent, deploying resources and structures necessary to successfully manage departmental growth, and forging ties with diverse groups of internal and external constituents. To be successful, the Dean will address a number of opportunities and challenges, listed below and outlined in detail starting on page 4 of this document:

- Build and foster a culture of trust, transparency, collaboration, and respect
- Drive and execute a strategic vision centered on inclusive excellence that will enhance both the School's strength in the core disciplines and its interdisciplinary distinction, as well as promoting its national prominence
- Cultivate an innovative environment for both research and education that supports and assists the scholarly development of faculty, particularly junior faculty
- Strategically recruit, engage, and retain a diverse community of talented students, faculty, and staff
- Advance the School's commitment to equity, diversity, and inclusion to ensure success for all constituents
- Forge ties with key campus and external partners to strengthen growth opportunities

A list of the desired qualifications and characteristics of the Dean can be found at the conclusion of this document, which was prepared with the assistance of national executive search firm Isaacson, Miller. The document provides background information and details the key opportunities and challenges related to the position. All confidential applications, inquiries, and nominations should be directed to the parties listed at the conclusion of this document.

School of Physical Sciences

The departments of the School of Physical Sciences are working on the frontiers of science in the disciplines of chemistry and biochemistry, physics, and mathematics. Founded by Nobel laureates and National Academy of Science members, UC San Diego's Physical Sciences departments have helped fuel the university's rapid rise to national and international distinction and continue to set the pace for innovations with global impact. All department graduate programs within the School are highly ranked by

the *U.S. News and World Report* including, discrete mathematics and combinatorics (#6), condensed matter physics (#13), biochemistry (#16), physical chemistry (#19), physics (#20), mathematics (#21), and chemistry (#21).

The School of Physical Sciences has grown in both size and reputation since the first graduate students in physics enrolled at the university in 1960. Today, it is home to approximately 365 academics and staff, over 120 postdoctoral scholars, and close to 5,000 students earning degrees in 30 undergraduate and graduate programs with an annual enrollment of over 77,000 in physical sciences courses. Nearly every first-year undergraduate completes at least one course in Physical Sciences, making the School an important teaching service provider for the university's undergraduate program. Additionally, the School offers interdisciplinary programs in science and mathematics education through California Teach – Science and Mathematics Education, supporting California's need for qualified science and math teachers. Graduate students can pursue interdisciplinary study in Bioinformatics and Systems Biology, Computational Science, Mathematics and Engineering, Materials Science, Mathematics and Science Education, and Quantitative Biology. A list of majors and minors, graduate and interdisciplinary programs, as well as major research centers involving Physical Sciences faculty can be found in Appendix II.

Role of the Dean, School of Physical Sciences

The Dean is the chief academic and administrative officer of the School of Physical Sciences. Reporting directly to Executive Vice Chancellor Elizabeth H. Simmons, the Dean will oversee a budget of $86.7 million and manage 185 ladder-rank faculty, 30 other academic appointees, and 150 staff. The Dean's direct reports include Associate Dean for Education and Students; Associate Dean for Equity, Diversity, and Inclusion; Associate Dean for Research; Assistant Dean for Finance and Administration; and three Department Chairs. Indirect reports include Director of Communications and Senior Director of Development. The Dean also works with campus administration, the Academic Senate, and other academic units in the maintenance, innovation, development, and implementation of needed programs, and participates in campus-wide decisions and policy development through service on campus committees.

The successful candidate will provide academic, intellectual, and administrative leadership to foster a commitment to inclusive excellence in all aspects of the School's research, teaching, service and public engagement missions. The Dean is responsible for the recruitment and retention of a diverse community of scholars and will create an inclusive environment where all faculty, staff, and students can thrive. The Dean will provide an effective administrative structure to support the School's programs and activities and is responsible for the implementation of strategic plans and program improvement in the areas of: instruction; research; public engagement; academic planning; development and management of resources; and articulation of the School's goals and programs with other research institutions, industry partners, and government officials at local, state, national, and international levels. The Dean also sets School goals; develops long-range plans; promotes high academic standards in instruction and research; promotes the needs of an outstanding diverse faculty and student body; and provides leadership assistance to departments in resource and space needs, academic recruitments, and faculty advancement.

Inherently interdisciplinary, Physical Sciences departments are eager to grow their research and academic collaboration with other academic units outside the School to usher fundamental discoveries into

practical applications and bring transformations to the broad fields of natural sciences, mathematical sciences, life and health sciences, earth, atmospheric and marine-sciences, engineering, materials science, and renewable energy. As a nimble architect with a long-term vision for schoolwide and departmental growth, the Dean will deftly navigate resource distribution, professional relationships, and productive conversation to drive healthy development across all departments of the School.

Key Opportunities and Challenges for the Dean

To be successful in this role, the next Dean will address the following key opportunities and challenges, serving as an effective leader, relationship builder, change agent, and representative for all the members of the School:

Build and foster a culture of trust, transparency, collaboration, and respect

The Dean must cultivate and ensure a healthy culture and climate in which faculty, staff, and students feel nurtured, respected, and valued as members of the School and of the UC San Diego community. Each department is home to its own unique culture and intellectual needs, and the Dean must be willing to listen deeply to diverse constituents within the School. The new Dean will drive a firm and evident operationalization of equity, diversity, and inclusion at all levels in alignment with the institutional goals of inclusive excellence. The Dean should have a proven record in leading and facilitating difficult conversations with a high level of emotional intelligence and the ability to mediate, bring people together, and build mechanisms for continuous improvement, feedback, and open dialogue. The Dean will be a visible presence to the community, and will work tirelessly with faculty, staff, and students to establish communication, trust, transparency, and mutual respect to improve culture, collaboration, and relationship- and team-building as integral to the School's identity.

Drive and execute a strategic vision centered on inclusive excellence, that will enhance both the School's strength in the core disciplines and its interdisciplinary distinction, as well as promoting its national prominence

Working closely with the department chairs, faculty, and staff, the Dean will define, articulate, create and implement a strategic plan that galvanizes all the disciplines within the School around a common mission and aspirational goals that will elevate all departments. Centering on inclusive excellence, the strategic planning process must ensure that all members of the School are able to provide unique perspectives on the opportunities and challenges facing each department, including lab space, teaching responsibilities, recruiting and supporting faculty, and cross-disciplinary research collaborations. To do so successfully, the Dean must initiate deliberate efforts to listen to, engage with, and facilitate conversations among diverse constituents with different perspectives. It is necessary for the Dean to develop a strong intellectual understanding of the distinctive cultures and needs of each department, and to play an active role in advocating for the School and each department to acquire necessary resources and partnerships. This is an opportunity for the new Dean to reimagine the future of Physical Sciences and assure the School's national prominence by leveraging abundant cross-disciplinary resources in fields such as data science,

engineering, materials science, medicine, oceanography, pharmaceutical sciences, and biological sciences.

Cultivate an innovative environment for both research and education that supports and assists the scholarly development of faculty, particularly junior faculty

Leveraging the presence of its renowned faculty, the School continues to draw diverse, top talent who are innovative in their research endeavors and educational pedagogies. Harnessing the diversity of expertise in the School, the Dean will engage with faculty to navigate the priorities and perspectives in its research and educational missions. It is crucial for the Dean to cultivate a competitive and innovative research environment and guide faculty in identifying external grants, funding, collaboration, and partnership opportunities to further enhance their research. The Dean will also examine enrollments, teaching assistant assignments, and staffing needs, as well as encourage faculty to adopt creative and inclusive teaching pedagogies to better serve an increasingly diverse student population. It will be the responsibility of the Dean to enhance the reputation and visibility of the School, seek and create opportunities for faculty, staff, and students, and support its programs to ascend national and international rankings.

Strategically recruit, engage, and retain a diverse community of talented students, faculty, and staff

Outstanding faculty and staff are critical to fulfilling the School's mission, and to this end, the Dean will be expected to not only attract and hire top-quality diverse faculty, but also to retain them through professional development, mentorship, and meaningful engagement to support them in becoming productive and successful leaders in their respective disciplines. The Dean will advocate in the best interests of faculty and staff by engaging with campus and community leaders to seek resources and recognition to expand the number of named endowed positions, ladder-rank faculty, and faculty fellowships. The Dean will invest time and effort to attend to faculty and staff morale and departmental needs, serving as a change agent and relationship-builder for the School.

Advance the School's commitment to equity, diversity, and inclusion to ensure success for all constituents

It is critical that the new Dean promote and advance a welcoming and inclusive community in which populations with diverse experiences and perspectives feel empowered, respected, and motivated to work together toward common goals. In addition to being accessible and transparent to students, staff, and faculty, the Dean will facilitate community discussion and encouragement around matters of equity, diversity, and inclusion and provide a thoughtful and sophisticated voice in difficult conversations and issues of gender, seniority, race and ethnicity, access, representation, and social justice. The Dean will elevate the student experience via support for the recently founded Student Success Center, which serves the academic and social needs of the School's increasingly diverse student body through outreach, curriculum development, student success initiatives, and more. The Dean will work toward building a more integrated School with a shared sense of identity and belonging, where all members, regardless of background and experience, feel recognized, valued, and elevated.

Forge ties with key campus and external partners to strengthen growth opportunities

The Dean will be an intellectual leader and a compelling voice for cutting-edge scientific research, innovation and education at local, regional and national levels. As such, the Dean must seek ways to enhance the visibility of the School's programs and initiatives, engaging in conversations with both campus and external partners to forge ties and grow partnerships, resources, funds, and opportunities for faculty and students. The Dean will have the opportunity to further develop the Dean's Leadership Council as a means to build strategic relationships, cultivate individual donors, and garner philanthropic gifts to support the School and the entire UC San Diego community. With the campus conveniently located adjacent to a booming biotech hub, the Dean will leverage the wealth of connections and resources in the area to strengthen growth, relationships, partnerships, and fundraising efforts for the School. The new Dean must be comfortable and skilled in engaging with external stakeholders and community leaders to successfully present the value of the School's remarkable research, education, innovation, and life-changing impact on climate change, human health, artificial intelligence, and more.

Qualifications and Characteristics

This position requires an experienced leader with intellectual and scholarly strength in a discipline represented in the School of Physical Sciences, and a deep understanding and commitment to the importance of the interdisciplinary nature and varying needs of the Physical Sciences departments. Further, they should bring an aspirational and entrepreneurial spirit to build a collective identity necessary to cultivate and drive the School's vision. A unique combination of effective organizational leadership and management skills, an outstanding record of scholarship, and demonstrated success in building culture, processes, and relationships based on transparency, communication, and commitment to equity, diversity, and inclusion is required. The desired qualifications and experience of an ideal Dean include the following:

- An earned doctorate degree and a distinguished record of teaching, research, and professional service appropriate for the appointment at the rank of a tenured full professor is required;
- Internationally and nationally recognized stature of outstanding scholarly credentials;
- Demonstrated commitment to and concrete experience in fostering inclusive academic excellence, supporting programs that address and achieve institutional goals for equity, diversity, and inclusion;
- Demonstrated commitment to and concrete experience in effectively leading and changing culture within a diverse academic community grounded in ethical behavior, transparency, candid communication, and a spirit of innovation and entrepreneurship;
- Ability to drive a compelling vision and clear goals for both the School and each department;
- A sophisticated understanding and appreciation of the intertwined research, educational, and public engagement missions of a major research university and the interplay between undergraduate and graduate education;

- Ability to encourage and inspire the expression of diverse intellectual interests, the pursuit of interdisciplinary research and varied modes of inquiry, and the development of wide-ranging pedagogical innovations among members of the School;
- A proven record of effective team- and relationship-building, managing people, communicating across functions and levels, and a willingness to broadly engage with and listen to members of the community;
- Demonstrated skills and interest in stimulating stakeholder engagement in new directions, cultivating key external constituencies, attracting partners, raising funds, and developing alumni relations and industry partnerships;
- A commitment to excellence in recruiting, retaining, mentoring, and developing faculty;
- Ability to interact and engage effectively with faculty, staff, undergraduate and graduate students, and other administrators, openly and cooperatively;
- Excellent communication and interpersonal skills including the ability to negotiate, provide conflict resolution, and facilitate difficult conversations.

Location

UC San Diego's main campus is located near the Pacific Ocean on 1,200 acres of coastal woodland in La Jolla, California, just north of the city of San Diego. The campus sits on the ancestral homelands of the Kumeyaay Nation. Kumeyaay people continue to have an important and thriving presence in the region.

UC San Diego is fortunate to have a thriving community of world-class research institutions at its doorstep. Preeminent institutional partners include Scripps Research, Sanford Burnham Prebys Medical Discovery Institute, La Jolla Institute for Immunology, and the Salk Institute for Biological Studies, among others. The opportunities for scientific collaborations and resource sharing are an unparalleled asset for UC San Diego. In addition, corporate entities in the region include major pharmaceutical and biotech companies, such as Ionis Pharmaceuticals, Illumina, CSL Limited, and Arena Pharmaceutical.

La Jolla is known for its rolling hills, high cliffs, and miles of Pacific shoreline. Founded as a small, quiet village, well isolated from the bustle of downtown San Diego, La Jolla boasts a vibrant economy and, thanks in large part to UC San Diego's presence, serves as an intellectual and cultural hub for Southern California. San Diego is the eighth-largest city in the United States and the second-largest city in California. With a population of 1.34 million, the city is an ethnically diverse area with a near-perfect climate and easy access to beaches, mountains and deserts. San Diego is also a vibrant cultural center, with world-class museums, theater and music imbued with the traditions of the many cultures that coexist within the city limits, with immediate access to the border with Mexico.

To learn more, see https://www.sandiego.org.

Applications, Inquiries, and Nominations

Screening of complete applications will begin immediately and continue until the completion of the search process. Inquiries, nominations, referrals, and CVs with cover letters and diversity statements should be

sent via the Isaacson, Miller website for the search: www.imsearch.com/8791. Electronic submission of materials is required. Applicants must also apply and provide the required materials via the UC website at: https://apol-recruit.ucsd.edu/JPF03475 by March 6, 2023 for maximum consideration; the closing date is March 31, 2023.

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The University of California San Diego is an equal opportunity/affirmative action employer. Diversity is a defining feature of the University of California, which embraces it as a source of strength. Differences — of race, ethnicity, gender, religion, sexual orientation, gender identity, age, socioeconomic status, abilities, experience and more — enhance the university's ability to achieve its core missions of public service, teaching and research. UC welcomes faculty, staff and students from all backgrounds and wants everyone at UC to feel respected and valued.

Appendix I

University of California (UC) System

The University of California San Diego is one of ten campuses in the UC system. Founded in 1868, the UC system is recognized as one of the world's largest and most successful academic institutions, with a tripartite mission of research, teaching, and public service. The ten campuses that make up the UC system – Berkeley, Davis, Irvine, Los Angeles, Merced, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz – collectively enroll approximately 238,000 students and are supported by more than 190,000 faculty and staff, and 1.7 million alumni living and working around the world. Another half million people benefit from UC's continuing education courses each year, as well as from research centers and educational programs operating throughout the state. UC extends its work beyond its campuses through national laboratories, medical centers, and outreach programs in neighboring communities, throughout California, around the world, and online. To learn more about the UC System, please see: http://universityofcalifornia.edu/uc-system.

University of California, San Diego

In the 60 years since its inception, UC San Diego has grown into a world-class public university that has increased social mobility, research productivity and civic engagement across California. In 2020, *Washington Monthly* ranked UC San Diego the best public university in the nation for contributions to social mobility, research and public service, and *US News and World Report* listed the campus as 19th among Best Global Universities. UC San Diego was named the 12th best research university in the world by Leiden University's Centre for Science and Technology Studies, based on a measurement of scientific impact of universities worldwide.

UC San Diego enrolls a diverse student body of 41,885 (as of Spring 2022), including 33,343 undergraduates and 8,542 graduate students. The university's focus on student success, inclusive instruction, and social mobility serves students of wide-ranging socioeconomic, cultural, and academic backgrounds. Over one-third of new matriculants identify as first-generation college students and nearly one-third are from historically underrepresented groups.

UC San Diego offers more than 100 degrees and programs through its 12 academic and professional schools: School of Arts and Humanities, School of Biological Sciences, Jacobs School of Engineering, School of Physical Sciences, Rady School of Management, School of Global Policy and Strategy, School of Medicine, Scripps Institution of Oceanography, Skaggs School of Pharmacy and Pharmaceutical Sciences, Herbert Wertheim School of Public Health and Human Longevity Science, School of Social Sciences, and the Halıcıoğlu Data Science Institute. As one of the nation's ten largest centers for science, engineering and medicine, the campus' research funding has grown for five consecutive years, receiving $1.64 billion in sponsored research support in fiscal year 2022.

One of the features that sets UC San Diego apart from other major universities in the U.S. is its family of undergraduate residential colleges: Revelle, John Muir, Thurgood Marshall, Earl Warren, Eleanor Roosevelt, Sixth and Seventh. In Fall 2023, a brand-new Eighth College will welcome its inaugural class. Each of the undergraduate colleges has its own campus neighborhood, residence facilities, staff, traditions, general-education requirements, and distinctive educational theme.

The campus is home to an outstanding faculty of over 1,600 full-time tenure and tenure-track faculty representing a diverse array of backgrounds. Faculty honors include two Fields Medalists; three Pulitzer Prize winners; five MacArthur "Genius" Fellows; five recipients of the National Medal of Science; 164 members of the National Academies: the National Academy of Sciences (86), National Academy of Engineering (32), and National Academies of Medicine (46); and several other major honors including a Tony Award, a Grammy Award and a Presidential Medal of Freedom. Sixteen Nobel Laureates have taught at UC San Diego. Shared governance—a hallmark of the University of California—is an especially important feature at UC San Diego, where the Academic Senate sets admissions and graduation requirements, and advises on the budget and other matters pertaining to the conduct and welfare of the campus.

UC San Diego has over 207,000 alumni worldwide; 70 percent of whom live in California and 25 percent live in San Diego County. For more information about UC San Diego, please visit https://ucsd.edu.

Leadership

Pradeep K. Khosla, an internationally renowned electrical and computer engineer, is the eighth Chancellor of the University of California San Diego, and a Distinguished Professor. Chancellor Khosla initiated and led UC San Diego's first-ever Strategic Plan and the ambitious 10-year, $2 billion Campaign for UC San Diego. The Campaign raised $3.05 billion, exceeding its original goal by more than $1 billion, and making UC San Diego the youngest institution ever to complete a multi-billion-dollar fundraising campaign. The Strategic Plan and Campaign for UC San Diego have worked in concert to transform the university physically, culturally and intellectually. With these efforts, Chancellor Khosla has expanded college access and affordability for underserved populations, initiated interdisciplinary research initiatives to foster collaboration and solve societal challenges, and strengthened university and community relationships and partnerships. The campus is currently in the midst of a $6 billion construction plan aimed at expanding classroom and research space and doubling the number of on-campus housing units and redeveloping the Hillcrest Medical Campus.

Theoretical high-energy physicist Elizabeth H. Simmons is the Executive Vice Chancellor (EVC) at UC San Diego, as well as a Distinguished Professor of Physics. In her administrative capacity, she serves as UC San Diego's chief academic officer and is responsible for policies and decisions relating to all academic programs and curriculum, instructional support programs, and faculty appointments and performance. She is the institution's second-ranking executive officer and acts on behalf of the Chancellor in overseeing the University in his absence. EVC Simmons has worked with colleagues in Academic Affairs and partners across all of UC San Diego and the broader community to develop overarching strategic goals and purposeful habits of collaboration required to make those aspirations attainable and sustainable. Under the leadership of EVC Simmons, Collective Impact, employing a collaborative approach, is an initiative to leverage and enhance the disparate mentoring, training, and support systems at UC San Diego that have the potential to jointly improve the experience, climate, and performance for all of its students, staff, and faculty.

Appendix II

School of Physical Sciences

Department of Chemistry and Biochemistry:

- Undergraduate: Chemistry B.S., Biochemistry B.S., Environmental Chemistry B.S., Pharmacological Chemistry B.S., Molecular Synthesis B.S., Chemistry minor;
- Graduate: Biochemistry and Molecular Biophysics Ph.D., Chemistry Ph.D., Chemistry M.S.

Department of Mathematics:

- Undergraduate: Applied Mathematics B.S., Mathematics B.S., Math-Computer Science B.S., Math-Applied Sciences B.S., Math-Secondary Education B.A., Joint Major in Math & Econ B.S., Math-Scientific Computation B.S., Probability & Statistics B.S., Mathematics minor, Mathematics Education minor;
- Graduate: Mathematics Ph.D., Mathematics with Specialization in Computational Science Ph.D., Mathematics with Specialization in Statistics Ph.D., Applied Mathematics M.A., Pure Mathematics M.A., Statistics M.S., Computational Science, Mathematics and Engineering M.S. and Ph.D.

Department of Physics:

- Undergraduate: Physics B.S., Physics with Specialization in Astrophysics B.S., Physics with Specialization in Biophysics B.S., Physics with Specialization in Earth Sciences B.S., Physics with Specialization in Computational Physics B.S., Physics with Specialization in Materials Physics B.S., General Physics B.S., General Physics with Specialization in Secondary Education, B.S., Physics minor.
- Graduate: Astronomy Ph.D., Physics Ph.D., Physics (Biophysics) Ph.D., Physics with Specialization in Computational Neuroscience Ph.D., Physics with Specialization in Computational Science Ph.D., Physics with Specialization in Quantitative Biology Ph.D., Astronomy M.S., Physics M.S., Physics CPhil.

In addition, SPS offers interdisciplinary programs at both the undergraduate level, such as, Cal Teach – Science and Mathematics Education, and the graduate level, such as, Bioinformatics and Systems Biology, Computational Science, Mathematics and Engineering, Material Science, Mathematics and Science Education, and Quantitative Biology.

The School of Physical Sciences engages in joint faculty appointments with the following schools and units on campus: Halıcıoğlu Data Science Institute, Jacobs School of Engineering, School of Biological Sciences, School of Medicine, Scripps Institution of Oceanography, and Skaggs School of Pharmacy and Pharmaceutical Sciences. Major research centers involving Physical Sciences faculty include: the Center for Aerosol Impacts on Climate and the Environment, the Center for Astrophysics and Space Sciences, the Kavli Institute for Brain and Mind, the Institute for Materials Discovery and Design, the Center on Quantum Materials for Energy Efficient Neuromorphic Computing, Arthur C. Clarke Center for Human Imagination, the Biocircuits Institute, the Center for Advanced Nanoscience, the Center for Computational Mathematics, the Center for NMR Spectroscopy and Imaging of Proteins, San Diego Center for Systems Biology, the Synthetic Biology Institute, the Qualcomm Institute, and the San Diego Supercomputer Center.

Today, researchers in the School of Physical Sciences are translating fundamental discoveries into applications that range from health care to the fight against terrorism. Some of the contributions that UC San Diego faculty and researchers have made to the advancement of science include:

- UC San Diego astrophysicists, analyzing measurements from a space satellite, generated the first compelling evidence that black holes exist.
- A UC San Diego chemistry professor provided the first direct evidence of how a cancer gene works, leading to a better understanding of the mechanism of cancer.
- A UC San Diego mathematician received the Fields Medal for his work on the Poincaré conjecture, one of the most famous problems in mathematics.
- UC San Diego physicists found new materials and nanostructures which led to new paths in superconductivity and magnetism.
- UC San Diego physicists co-developed the density functional theory which changed the computational practice in materials and molecules, and earned a Nobel prize.
- UC San Diego physicists and biologists combined concepts of theoretical physics and techniques of molecular biology to determine the physical constraints on critical DNA interactions involved in antibody production, cell differentiation, and cancers.
- UC San Diego chemists and biologists produced dramatic images of brain cells showing the structural changes that take place when we store memories.
- A UC San Diego professor of chemistry and biochemistry and a 1995 Nobel Prize winner in Chemistry, generated new insights into how major cities can mitigate air pollution. Research by other UC San Diego chemists has produced a better understanding of the other impacts of modern society on our environment.
- UC San Diego chemists and physicists are developing the next generation of miniaturized intelligent detectors — nanosensors — for applications in medicine and transportation and for remote monitoring of the environment.

For more information about the School of Physical Sciences, please see http://physicalsciences.ucsd.edu/.