UC San Diego
UC San Diego News Center

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Undergraduates Delve into Library Collections to Develop Award-Winning Research

The UC San Diego Library is proud to support student scholars through our Undergraduate Library Research Prize, a program that enriches the undergraduate experience at UC San Diego by promoting innovative and collaborative research. Now in its 13th year, the annual award recognizes the outstanding scholarly work of undergraduate students who demonstrate critical thinking, problem-solving and strategic use of library services, resources and expertise in support of the university's mission.

Winners of the 2019 Undergraduate Library Research Prize! Pictured, from left, Ruiyu Yang, Jaideep Chakladar, Brett Hooke and Christopher Bagon.

This year's winners explored theories about the microbiome and its connection to cancer progression, analyzed nanofluid stability, challenged the rising cost of higher education and cast new light on juvenile delinquency.

"It's very rewarding to see the caliber of research being conducted at the undergraduate level," said Alysson Satterlund, UC San Diego's Vice Chancellor for Student Affairs. "UC San Diego students are working at the cutting edge of research in every discipline. This synergy between undergraduate research and teaching is a hallmark of the educational experience at UC San Diego and exemplifies student-centeredness."

Awards are given in two categories: Social Sciences/Arts and Humanities, and Life and Physical Sciences/Engineering. They include a cash award of $1,000 and $500 for first and second place, respectively. To be considered for the Undergraduate Library Research Prize, students must be nominated by faculty members and must participate in either the annual UC San Diego Undergraduate Research Conference, or in other university programs that foster and recognize student research and scholarship.

Jaideep Chakladar, a Biochemistry and Cell Biology major, won first prize in the Life and Physical Sciences/Engineering category for his project, “The Papillary Thyroid Carcinoma Immune Landscape.” With guidance from his mentor, Weg Ongkeko, associate professor in the Department of Surgery, Chakladar sought to explain how the microbiome affects cancer pathogenesis and progression and, alternatively, how cancer can regulate the microbiome. This research project used both virtual and physical Library resources including books, datasets, computational frameworks and journals to solidify Chakladar’s understanding of immunotherapy. When faced with the need for high powered computing resources, Chakladar turned to the Library’s Data and GIS Lab to process large sequencing and data files. From this starting point, he was able to take his analysis to the San Diego Supercomputer Center. In addition, Chakladar turned to librarians for consultation and was able to discover the Human Microbiome Project database which enabled him to expand his pool of control data and increase the reach of his analysis. Chakladar said, “I am confident that the tools that the Library has provided me will help me build a legacy as a scientist once I move beyond undergraduate research.”

Christopher Bagon, a NanoEngineering major, took second place in the Life and Physical Sciences/Engineering category. While researching his thesis, Bagon pored over dozens of books, scientific databases and journals. “Access to relevant Library resources allowed me to make profound discoveries and compare my findings with research by others,” he explained. His project “Experimental Investigation on the Thermal Conductivity of Stabilized Aluminum Oxide-Water Nanofluids” investigates dispersion behavior of nanofluids. His project used physical books as primary sources of information for understanding nanofluid technology and general concepts associated with his research. Through the ScienceDirect database, Bagon was able to conduct and compare advanced searches using specific keywords to narrow search results. He worked with Professor Olivia Graeve in the Department of Mechanical and Aerospace Engineering.

First prize in the Social Sciences/Arts and Humanities category went to Brett Hooke, a Sociology major. Hooke became interested in the history of California’s funding of higher education after examining how his own experience as a transfer student weighed in on his ability to support himself while keeping up with a full course load. In his paper titled “The Rotting City on the Hill: How and Why the People of California Defunded, Privatized, and Limited Access to the University of California,” Hooke analyzes the undoing of the California Master Plan for Higher Education during the 1980s following economic challenges and wars. Hooke drew upon government archives, online resources, interlibrary loans, newspapers and the expertise of librarians for his research. “At the beginning of my thesis, I wasn’t aware of all the resources the Library offered. It was overwhelming,” Hooke said. “Fortunately, I attended a

seminar at the Library and learned about its government archive which became crucial for my research." Hooke worked with Christena Turner, associate professor in the Department of Sociology.

Ruiyu Yang, a Cognitive Psychology and Sociology double major, took second place in the Social Sciences/Arts and Humanities category. For her project, "Understanding Trauma, Adversity, Resiliency, Emotional Intelligence, and Post-traumatic Growth among Delinquent Girls," Yang relied on e-books, databases and search engines such as Google Scholar to research the California Penal Code and develop coding schemes to capture historical arrest data and recidivism for incarcerated youth. With the help of her mentor, Amy Lansing, assistant professor in the Department of Psychiatry, Yang explored topics ranging from antisocial behavior, resiliency, emotional intelligence, sexual orientation and trauma among incarcerated girls. She conducted an in-depth analysis of the articles she found and kept track of information using tools like EndNote which allowed her to identify gaps in the literature, ultimately narrowing the focus of her paper on a specific population. In addition to the Library's research collections, Yang took advantage of Library spaces and equipment. She added, "The study rooms were great places for presentation practice, and I was able to book them in advance saving me a lot of time."

"Understanding how information is created, shared and used is fundamental to being part of a democratic society," said Erik Mitchell, the Audrey Geisel University Librarian. "The Library is committed to offering expertise, scholarly resources and technology for all students to use in pursuit of their academic interests, and we are thrilled to recognize these four undergraduates for the excellence they have demonstrated in mastering Library research."

The Undergraduate Library Research Prize is co-sponsored by the UC San Diego Library, the Office of the Vice Chancellor for Student Affairs and UC San Diego Alumni. For more information about the Undergraduate Library Research Prize, visit lib.ucsd.edu/ulrp.

MEDIA CONTACT

Nikki Kolupailo, 858-242-0539, nkolupailo@ucsd.edu
Leslie Luna, (858) 822-4803, lesliel@ucsd.edu