

Ms. Walker explained that NLP is a subfield of artificial intelligence (AI) involving the automatic processing of human language. There is a very large range of applications due to the ubiquity of language, and very specialized knowledge is needed to be successful as a practitioner of NLP. This program is unique in UC and one of few nationwide. The program's goal is to make graduates highly competitive for NLP jobs in the local technology (tech) industry in Silicon Valley. The program will begin with an initial cohort of 25 students and ramp up to a steady state of 50 students in five years. The curriculum consists of five core courses, electives, a three-quarter capstone project sequence—all of which combine deep technical training with strong practical applications. NLP seminars, job fairs, and summer project presentations will connect students with industry leaders and mentors. The program plans to reach out to the tech industry to recruit capstone project mentors, solicit money to sponsor those projects, and recruit elective instructors and speakers. The industry support has been positive so far—an industry advisory panel has been created with scientists from Amazon, IBM, Google, and Nuance, who have voiced a great need for these skills and have committed to hiring NLP program students. UCSC is proposing a PDST fee of \$23,000 for a one-year program, which Ms. Walker remarked was affordable. After completing the yearlong program, a student can garner excellent salary as an engineer in Silicon Valley. UCSC will use the 33 percent return-to-aid amount to provide aid to undergraduate minority students. PDST will allow UCSC to hire an executive director who will reach out to industry, recruit mentors, and help with job placements. PDST will also allow recruitment of industry speakers and lecturers, as well as recruit Ph.D. student teaching assistants who will also serve as mentors.

Ms. Walker spoke about diversity in the program. In UC Santa Cruz's traditional Master of Science in Computer Science (CS) program, 173 applicants out of 1,100 expressed interest in NLP. Eighty percent of applicants were international students, mostly from China, Taiwan, and India, the diversity of which is still good for natural language training, but only a small portion of these students are underrepresented in the industry. The goal is to create a more diverse pool of students by recruiting among UCSC's undergraduates, who are more diverse than undergraduates at San Jose State University and at other nearby California State University (CSU) campuses such as CSU Monterey Bay. UCSC is a Hispanic-Serving Institution (HSI); 43 percent of UCSC students are first-generation students. Out of the 2,053 students in UCSC's undergraduate CS program, 13 percent, or 271 students, are Hispanic. Based on these numbers, UCSC is confident it will hit its NLP targets. There are currently 414 women in UCSC's undergraduate CS program, or 20 percent (the Bachelor of Sciences program is 20 percent women, and the Bachelor of Arts program is 35 percent women). UCSC is working on improving the number of black students in its undergraduate CS program, and Ms. Walker is personally mentoring several black students who are members of the National Society of Black Engineers (NSBE), helping with job placement, and brainstorming ways to recruit more black students into the master's program. Women make up about 50 percent of the CS major in India, China, and Taiwan. UCSC's international applicant pool is 36 percent women, and it hopes to recruit more women to the NLP program from the international pool, which may change the environment for the women in the Ph.D. and undergraduate programs as well. UCSC will approach the tech industry for scholarships for the pool of international women.

Regent Elliott asked whether UCSC continued to expect 70 percent of students in the program to be international and mostly from two to three countries. He wondered how UCSC planned to achieve overall diversity if there were few California or United States residents in the CS program and numbers were projected to remain the same as far into the future as 2025. Ms. Walker replied that UCSC could take an active outreach role. PDST will provide UCSC with the funds to do more outreach, offer more fellowships, and therefore better affect the diversity in the application pool. Regent Elliott asked whether UCSC expected the numbers to be different from those it provided to the Regents. Mr. Rodriguez confirmed that predictions are based on the current pool, but UCSC is trying to affect that. Regent Elliott asked whether the focus was on language diversity, and Mr. Rodriguez clarified that the focus remains on ethnic, racial, and gender diversity, but he was responding to Regent Elliott's earlier point about the applicants coming from two to three countries. UCSC believes it can make a big impact on gender diversity and diversity generally, but it is difficult to forecast, hence the numbers presented to the Regents were based on the current applicant pool. Regent Elliott commended UCSC on having an articulated plan.

Regent Graves made a general comment that faculty and departments need to be as specific as possible with regard to actions they will take to improve diversity. This helps the Regents measure whether to renew PDST for their programs. Mr. Rodriguez responded with appreciation and reiterated the pipelines Ms. Walker had presented.

Faculty Representative May sought to confirm the total number of faculty were participating and from which departments. Ms. Walker responded that ten faculty members from Computer Science and Engineering, Linguistics, and Psychology would participate in the program. Mr. Rodriguez had developed financial incentives for the Linguistics department so it could provide course relief to its faculty teaching in the NLP program.

Regent Estolano stated that she would like to see a goal of 50 percent California resident participation instead of 26 percent, because UC should be trying to grow the talent base of California residents. Ms. Walker replied that international students apply to the master's program to find jobs in Silicon Valley and stay. Gender diversity is also greater in the international pool, and they are very high-caliber students. Most undergraduate students prefer employment to the master's program. Ms. Walker believed that offering financial aid to undergraduate students and creating a pipeline could encourage these students to stay. PDST would help the NLP program graduate five Hispanic students a year, making the UCSC rate ten percent Hispanic compared with one percent nationwide. Regent Estolano referred to the NLP program proposal and indicated that even 30 percent California resident participation is better than the projected 26 percent. Mr. Rodriguez reiterated the financial barriers to entry for resident students. UCSC hopes to first establish the NLP program and draw industry support, such as fellowships, which can finance an increase in California resident participation. Regent Estolano recommended setting a higher resident student goal and would view a higher goal quite favorably. Regent Estolano also predicted that the tech industry would be supportive of a higher resident student goal that is more diverse and would readily hire those graduates.

Regent Zettel expressed disappointment about the enrollment rate of 74 percent international students in light of recent unfavorable press about UC undergraduate enrollment, and she requested a report on NLP program progress, enrollment, and any adjustment to goals. Regent Pérez added that the Committee would like to see such a progress report earlier than the program's renewal date.

Upon motion duly made and seconded, the Committee approved the recommendation as amended and voted to present it to the Board.

The meeting adjourned at 4:05 p.m.

Attest:

Secretary and Chief of Staff