Notice of Meeting

UNIVERSITY OF HAWAI'I

BOARD OF REGENTS COMMITTEE ON ACADEMIC AND STUDENT AFFAIRS

Members: Regents Wilson (Chair), Westerman (Vice-Chair), Nahale-a, Sullivan, and Tagorda

Date: Thursday, November 7, 2019
Time: 10:00 a.m.
Place: University of Hawai‘i at Hilo
‘Imiloa Astronomy Center of Hawai‘i
Moanahoku Exhibit Hall
600 ‘Imiloa Place
Hilo, Hawai‘i 96720

AGENDA

I. Call Meeting to Order
II. Approval of Minutes of June 6, 2019 Meeting

III. Public Comment Period: All written testimony on agenda items received after posting of this agenda and up to 24 hours in advance of the meeting will be distributed to the board. Late testimony on agenda items will be distributed to the board within 24 hours of receipt. Written testimony may be submitted via US mail, email at bor.testimony@hawaii.edu, or facsimile at 956-5156. Individuals submitting written testimony are not automatically signed up for oral testimony. Registration for oral testimony on agenda items will be provided at the meeting location 15 minutes prior to the meeting and closed once the meeting begins. Oral testimony is limited to three (3) minutes. All written testimony submitted are public documents. Therefore, any testimony that is submitted verbally or in writing, electronically or in person, for use in the public meeting process is public information and will be posted on the board’s website.

IV. Agenda Items

A. Committee Goals and Objectives
B. Review and Recommend Board Approval to Change from Provisional to Established Status: Bachelor of Science in Computer Engineering, University of Hawai‘i at Mānoa
C. Review and Recommend Board Approval to Change from Provisional to Established Status: Doctor of Education in Professional Educational Practice, University of Hawai‘i at Mānoa

V. Adjournment

For disability accommodations, contact the Board Office at 956-8213 or bor@hawaii.edu. Advance notice requested five (5) days in advance of the meeting.
Committee Chair Michelle Tagorda called the meeting to order at 9:03 a.m. on Thursday, June 6, 2019, at the University of Hawai‘i at Mānoa, Information Technology Building, 1st Floor Conference Room 105A/B, 2520 Correa Road, Honolulu, Hawaiʻi 96822.

Committee members in attendance: Committee Chair Michelle Tagorda; Committee Vice Chair Kelli Acopan; Regent Eugene Bal; Regent Ben Kudo; Regent Alapaki Nahale-a; Regent Jan Sullivan.

Committee members excused: Regent Robert Westerman.

Others in attendance: Board Chair Lee Putnam; Board Vice Chair Jeffrey Portnoy; Board Vice Chair Wayne Higaki; Regent Simeon Acoba; Regent Ernest Wilson, Jr.; Regent Stanford Yuen (ex officio committee members); President David Lassner; Interim Vice President for Community Colleges Erika Lacro; Vice President for Legal Affairs/University General Counsel Carrie Okinaga; Vice President for Academic Planning and Policy Donald Straney; Vice President for Research and Innovation Vassilis Syrmos; Vice President for Information Technology/Chief Information Officer Garret Yoshimi; UH-Mānoa Provost Michael Bruno; Interim UH-Hilo (UHH) Chancellor Marcia Sakai; UH-West O‘ahu (UHWO) Chancellor Maenette Benham; Executive Administrator and Secretary of the Board of Regents (Board Secretary) Kendra Oishi; and others as noted.

II. APPROVAL OF MINUTES OF THE FEBRUARY 14, 2019, AND MARCH 14, 2019, MEETINGS

Regent Bal moved to approve the minutes of the February 14, 2019 and March 14, 2019, meetings, seconded by Committee Vice Chair Acopan and the motion carried unanimously.

III. PUBLIC COMMENT PERIOD

Board Secretary Oishi announced that the Board Office received no written testimony and no individuals had signed up to provide oral testimony.

Committee Chair Tagorda called upon VP Straney to address the board. VP Straney noted that Attachment A on the agenda was the annual list of tenure and promotion actions that have been delegated to the president. The tenure and promotion list is included on the agenda as a courtesy rather than for board action. He noted that there
were four clerical errors on the list: Vanessa Chong and Viet Ngo from the UHM campus’ department should have been identified as the Office International and Exchange Programs; Muller Fabbri from the UH Cancer Center’s name was incorrectly spelt as Muller Fabri; and Steven Taketa from UHWO’s rank should be listed as S3 instead of S4. VP Straney apologized for the errors and noted that the campuses will contact the individuals and correct the information.

IV. AGENDA ITEMS

A. Hawai‘i P-20 Partnerships for Education Presentation on Early College Updates (Deferred from February 14, 2019)

Executive Director of Hawai‘i P-20 Stephen Schatz provided background and an update on early college. He highlighted that more students are participating and more classes and programs are being offered. The program has resulted in positive student outcomes including a higher likelihood of college enrollment and persistence. The goal is to be strategic in targeting the students who will benefit the most. President Lassner added that the data presented focused mainly on the Hawai‘i State Department of Education (DOE), but the university has a similar early college model with Kamehameha Schools.

Regent Nahale-a asked for a clarification regarding the definition of completers on slide 4 of the presentation. Mr. Schatz explained that completers referred to percentage of all graduating seniors who participated in early college.

Regent Kudo asked whether the dual credit only shown on slide 12 included students who could not quality to take the advanced placement (AP) exam and commented that it would seem there is more correlation between AP only and dual credit only. Mr. Schatz explained that some schools have criteria for entering AP courses and others are open enrollment, but agreed that it may not be the same target audience. Early college and dual credit programs target students who are in academic middle and may be the first generation in their family to go to college. President Lassner added that AP typically targets for students who already believe they are college-bound whereas dual credit targets students who may not have been thought of as college material and utilized like an intervention to potentially change their educational trajectory.

Regent Kudo asked if student can take early college even if they qualify for AP courses and Mr. Schatz confirmed that they could. Regent Kudo commented that he wants the university to capture as many students at UH in terms of enrollment management, and he was trying to discern what is useful in this data that could be used to plan an enrollment management strategy. Mr. Schatz explained that they were trying to facilitate these types of conversations at the local level with campus data on matriculation. President Lassner indicated that it is a success for Hawai‘i when the university can get a student to attend college who would not have gone at all, especially if they go to UH. Some students are going to a non-UH campus, and not necessarily enrolling in the UH campus from which they took their early college credits. UH is creating stronger pathways to encourage more of these students to move to a UH campus in a specific degree pathway and career.
Board Chair Putnam asked if UH faculty were teaching early college classes as part of their regular class load or as overload and VP Lacro responded that it was both. Board Chair Putnam commented on the number of courses being offered at some campuses and asked if it was difficult to recruit faculty to teach the courses, or if the same core group of faculty was teaching. Mr. Schatz responded that some high schools are pushing early college courses from ninth grade, and putting in the context of their academy structure. VP Lacro explained that it is not the same core group of faculty and they draw on lecturers or faculty on other campuses, but they try to put the best people out in that area to get students excited because that connection makes students want to continue on. It can be difficult to balance the number of people and sections, but it is sometimes difficult to balance the number of people and sections.

Board Vice Chair Higaki arrived at 9:23 a.m.

Board Chair Putnam asked about the estimated balance of DOE funding for early college and what UH is expending. Mr. Schatz responded that the DOE receives $2.5 million for the cost of the courses and there is a memorandum of understanding between DOE and UH with an agreed-upon price per course. VP Lacro explained that administrative costs are done at the campus level, and the money that the DOE pays UH only covers the cost of the instructor. President Lassner added that typically the amount paid does not cover the costs of a UHM faculty member, but is enough for a lecturer who teaches the course for UHM or substitutes for a course taught by a UHM faculty member.

Regent Wilson asked whether campuses were monitoring the effectiveness of lecturers being utilized against the need to hire additional full-time faculty. VP Lacro explained that measuring the effectiveness of full-time faculty is based on whether there are contract renewals or tenure and promotion, and lecturers are evaluated annually to determine whether to renew their contract for the next year. Most of the lecturers are the high schools have taught on UH campuses and may flow between the high schools and campuses.

Regent Bal asked whether there were any metrics on how successful the transfer credit from the dual credit program is. Mr. Schatz responded P-20 has have not performed that analysis but is having discussions with high school and college leadership regarding the kinds of courses that make sense for students on particular pathways. VP Lacro indicated that everything being offered in early college is also offered on the campuses, so everything transfers. VP Straney added that students taking courses are entered into the STAR system, and those who go to a mainland campus, take a UH transcript with them, which is significantly more useful than an AP score.

Regent Sullivan asked about goals for P-20 moving forward, whether there were projections for growth over the next five years, and how campuses get the money to support the program. Mr. Schatz explained that the legislative appropriation to DOE was based on projections. P-20 wants to continue to grow the program, but needs to target the right students, otherwise there is a risk of only giving college credits to those students who were already college-leaning. President Lassner added that the goal was for every high school graduate to graduate with six credits. He noted that the DOE allocates the funds, UH is the provider of services. The high schools initiate the request and the DOE compensates UH for each course.
Regent Acoba arrived at 9:33 a.m.

Regent Kudo shared his personal experience regarding his 9th grade son being recruited by another university and how impressed he was with their marketing efforts to expose students to the campus, faculty, and facilities, and make the students feel more comfortable about attending that university someday. He indicated he would like UH to utilize similar marketing programs to attract students. President Lassner explained that every UH campus offers federally-funded summer bridge programs to underrepresented high school students. Board Chair Putnam suggested that independent schools might be a target population for the future. President Lassner responded that the Mānoa Academy program is designed as a recruiting tool to provide a unique experience for high-achieving high school students, with some field experiences and summer school credit courses.

Regent Acoba asked why more dual credit students are attending mainland four-year colleges and if it was cause for concern. Mr. Schatz explained dual credit students are attending college at a greater rate overall in each category. P-20 is working to create pipelines into each of the UH campuses, so students can get college credits to help get them into their local institutions. He noted there is a trend of more high school graduates attending four-year mainland schools regardless of whether they were dual credit or not, but the reasons for that trend were unknown. P-20 is trying to figure out why more dual credit students are enrolling in two-year local institutions as opposed to mainland schools. He explained that as part of the 55 by ’25 goal we need to increase the number of college-going students overall, particularly at UH campuses, but it is also important to increase the educational capital of students who actually end up staying here.

Regent Yuen asked if summer bridge programs were for high school graduates and President Lassner explained that some programs are, but they are also used for high school sophomores and juniors at some campuses. Other campuses have optional summer activities for students who have been admitted for fall. Regent Yuen suggested that making these types of programs available would encourage more students to apply to UH campuses.

Regent Nahale-a asked if the early college course offerings differed from those offered on campus. Mr. Schatz explained the early college courses had the same syllabus, learning outcomes and level of rigor as on-campus courses. Regent Nahale-a asked whether students were receiving more wraparound services, who was the provider of those services, and how critical support services were to the continued success of the early college program, especially in the rural communities. Mr. Schatz responded that both the high schools and UH campuses provide extra support services such as tutoring. Everything has not been figured out yet and discussions need to be held regarding the types of services that work, and required services and resources to ensure continued program success.

Board Vice Chair Portnoy arrived at 9:48 a.m.

Committee Chair Tagorda commented on the importance of wrap-around services, the opportunities to expand educational capital and make higher education accessible to more students who may not otherwise see that as an opportunity, how pathways provide
a better vision and change the narrative of why students should stay here for college versus going away.

B. Overview of Zero-Cost Textbook Initiative (Deferred from February 14, 2019)

Associate Vice President (AVP) for Student & Director for Academic Technologies Hae Okimoto provided an overview of the university’s zero-cost textbook initiative, which is also referred to as open educational resources (OER). She noted that some students were spending close to $2,000 per semester on textbooks and that a working group was formed. Courses are coded in Banner as TXT0 and students have the option to select courses with zero-textbook costs. She highlighted the history of the initiative, provided cost savings on textbooks for academic year 2017-2018, OER goals, and current OER projects. She also discussed the work being done with OER BookSprint, an organization that helps institutions and faculty create a textbook in 3 days, and how OER textbooks are being aligned with UH’s student learning outcomes. The goal is to produce additional books every summer.

Discussion occurred regarding addressing barriers to further expansion, the role of librarians in identifying resources for faculty, and the goal of impacting student affordability through a wide-range of courses offering open educational resources.

Regent Wilson asked about incentives for faculty to participate in utilizing OER for their courses, and what percentage of faculty have indicated they were open and interested in utilizing OER. AVP Okimoto responded that the incentive for faculty is the students, who are signing up for TXT0 courses at a greater rate than courses with higher textbook costs. She explained that a disadvantage of publisher textbooks is that students are purchasing textbooks and faculty may only use a small percentage of that textbook whereas faculty have the opportunity with OER to customize the textbook and learning materials. AVP Okimoto noted that she will have a better idea of faculty interest in utilizing OER at the next update to the board. The systemwide working group meets monthly, and latest reports show that 17% of summer course offerings at HonCC are TXT0 courses. She added that faculty interest in OER materials is growing.

Regent Acoba asked whether there were any costs for students using OER textbooks, whether copyright rights were waived, whether faculty would utilize materials from other places, and whether OER materials presented a limited view of the subject matter. AVP Okimoto responded that TXT0 courses have no costs for textbooks or course materials. She indicated that the initiative broadens the perspective for students because resources from multiple areas are incorporated into the materials. AVP Okimoto noted that one of the tenets of OER is Creative Commons (CC) licensing where faculty allow their materials to be freely utilized provided the material is attributed back to them, or the material itself cannot be changed but derivative works can be made. As UH faculty creates OER materials, they are being asked which CC licensing attributes they want added on to their courses.

Committee Vice Chair Acopan indicated she was on the UH Student Caucus in 2015 when the concept of OER was introduced and commended administration for making progress on OER despite initial resistance from faculty. Regent Nahale-a noted the importance of affordability and the positive impact OER has for students.
Committee Chair Tagorda asked about whether any thought had been given to addressing the barriers that may exist. AVP Okimoto responded that the availability of materials in certain disciplines is a barrier. She noted that career and technical education courses materials utilize manuals presented by the industry, which are not available in the OER realm. She explained that graduate and upper division courses are often seminars often rely heavily on research materials that are readily available in the library. She further explained that there is still resistance from faculty who get comfortable utilizing a certain textbook and need to get a comfort level looking at other materials.

C. University of Hawai‘i Online Degree Program Progress Report (Deferred from February 14, 2019)

AVP Okimoto and Academic Affairs Program Officer for Community Colleges Tammi Chun provided a progress report on online degree programs including historic online course offerings, current online degree program, goals of the accelerated 5-week programs, online program objectives for the community colleges, significant interest from prospective students’ to the community college accelerated associate of arts (AA) online degree program, “concierge-style” student support services, faculty development programs, and online student performance. The first cohort in the accelerated AA online program begins in fall 2019. Seventy students have signed up, which is higher than projected.

Regent Yuen commented that the military was a huge target market, especially with younger enlisted soldiers who need to improve their credentials for promotion, and asked about efforts made to reach out to the military. AVP Okimoto responded that the online environment has worked well for soldiers because they are mobile and asynchronous. She noted that veterans have not done as well with accelerated online courses because housing benefits are based on how many credits they are enrolled in at any time. Because the five-week courses are only 3 credits, UH does not encourage veterans to take accelerated online courses. She indicated that one challenge with making courses available to the active duty military is that individual campuses will have to join the Servicemembers Opportunity Colleges. AVP Okimoto explained that the community administration is actively looking at providing online courses for the Air Force because they have an online baccalaureate program, but not an AA program. Ms. Chun added that the community colleges recently hired an individual to work with the military and is ramping up the UH’s presence on base.

Regent Kudo asked if there was an online program that stood out nationally and AVP Okimoto responded that there are several that UH looked at including Southern New Hampshire University that focuses almost exclusively on working adults and has an accelerated course format; Arizona State University (ASU) has a fairly robust program; and the university also participates in the Western Governors University, which is purely an online institution.

Regent Kudo commented about the need to leverage limited resources and the ability of online degree programs to reach target markets that traditional classroom courses cannot. He asked if there was an advertising budget and efforts to market unique programs UH offers to potential students nationally. AVP Okimoto explained that there is no advertising budget, and the focus of UH’s online program has been meeting the needs
Administration is looking at offering a hybrid online/traditional classroom model in two areas unique to Hawai‘i including a professional certificate program around international and environmental law with the law school, and a tropical medicine certificate with the medical school. Regent Kudo agreed that the priority should be the local student population, and encouraged administration to continue to pursue other target markets outside of Hawai‘i. AVP Okimoto responded that administration is also working on a baccalaureate program focused on Oceania, which has the potential to be marketed further abroad.

Regent Acopan asked what on-campus services were available to online students and whether online students would pay any fees. AVP Okimoto responded that online students have access to all on-campus services at the home campus for their program, but the goal is to make all the necessary services available online. She noted that at this point online students do not pay additional fees, and online students pay less fees per the mandatory student fees policy. Online students can opt-in to paying fees such as the Warrior Recreation Center fee.

Regent Sullivan noted that UH has been very measured in expanding its online program whereas public institutions such as ASU and Purdue have been more aggressive. She asked President Lassner for his thoughts and he responded that UH has made it the first priority to serve the students of Hawai‘i that need help the most because UH is the only public institution of higher education in Hawai‘i. He explained that Purdue bought Kaplan’s students and programs, but those are not Purdue degrees, education, or faculty. Early reviews have been mixed, and it will be interesting to see how things turn out. He visited ASU two years ago, and their online university was essentially not connected to ASU itself; there were off-campus call centers with recruiters, marketers, and responders. Development and teaching of courses was partially being done by commercial partners and separate hires. He added that University of Maryland set up a separate accredited campus that only offers online, outreach on a national and international scope, including serving the military.

President Lassner explained that another priority for UH has been to bring the whole university along. Early College is taught by UH faculty, and online courses are UH classes taught by UH faculty. He noted that more innovative models work with mixed approaches, but his personal view is that we need to educate ourselves and establish experience with what works on a sustained basis and then determine how best to expand online offerings. UH has experienced success with online professional masters and some bachelor programs, and at every UHMC graduation there are over 100 students who graduate with UH degrees from other campuses. It has been a challenge to get non-professional schools focused on what online services mean to UH’s service mission for the state and for revenue opportunities outside the state. AVP Okimoto added that as online services increase, it also allows increased access to traditional students.

Board Vice Chair Portnoy commented on the importance of campus life and the traditional on-campus educational experience, and hoped that UH does not focus so much on the economics of online offerings that we lose sight of what UH needs to be. He asked why passing rates for traditional on-campus courses are so far below the passing rates for online courses. Ms. Chun explained that five-week courses are an immersive experience for students where they are consistently engaged on a daily basis, whereas
16-week courses may not have as much intensity of engagement on a daily basis. She added that faculty were personally surprised how engaged the students were with each other and the faculty in the accelerated courses. AVP Okimoto indicated that faculty who underwent the Quality Matters training and the faculty development program are applying things they learned in the five-week training into their regular courses.

D. Committee Annual Review

Committee Chair Tagorda referenced the committee annual review matrix provided in the materials packet and noted a correction that the workplan and activities column should reference the 2018-2019 academic year. A suggestion was made that the board should conduct a high-level review of tenure and promotion criteria.

Regent Sullivan believes that the board should take a high level view of tenure criteria. Thinks the next committee chair should consider taking that on.

V. ADJOURNMENT

There being no further business, Regent Nahale-a moved to adjourn, Committee Vice Chair Acopan seconded, and with unanimous approval, the meeting was adjourned at 10:50 a.m.

Respectfully Submitted,

Kendra Oishi
Executive Administrator and Secretary of the Board of Regents
Committee on Academic and Student Affairs
2019-2020 Committee Goals and Objectives

(1) Review the academic mission and strategic direction of the system and its major units.

(2) Periodically review to what extent programs support the mission and strategic direction of the University.

(3) Monitor the quality and effectiveness of educational programs.

(4) Develop and maintain policies governing academic and student affairs.

(5) Review actions proposed by the President which fall under current board policies and procedures, including requests for exceptions.

(6) Review the quality and effectiveness of the University’s efforts in addressing emerging workforce needs.

Note: Items (1) through (5) are pursuant to the Board of Regents Bylaws as of February 28, 2019.
MEMORANDUM

TO: Benjamin Kudo, Chair
    Board of Regents

VIA: David Lassner
     President

VIA: Donald Straney
     Vice President for Academic Policy and Planning

VIA: Michael Bruno
     Provost

FROM: Brennon Morioka, Dean
      College of Engineering

SUBJECT: REQUEST FOR ESTABLISHED STATUS FOR THE BACHELOR OF SCIENCE IN COMPUTER ENGINEERING AT THE UNIVERSITY OF HAWAI'I AT MĀNOA

SPECIFIC ACTION REQUESTED:
It is respectfully requested that the Board of Regents grant established status to the Bachelor of Science in Computer Engineering in the College of Engineering at the University of Hawai'i at Mānoa.

RECOMMENDED EFFECTIVE DATE:
Effective upon Board approval.

ADDITIONAL COST:
There are no additional costs associated with this request.

PURPOSE:
The Bachelor of Science in Computer Engineering prepares students to apply computer hardware and software technologies to solve engineering problems. The program, which has exceeded enrollment projections, has been successful in meeting state need and anticipated outcomes. As an indication of program quality, the program was reviewed and approved for full ABET accreditation in 2016, making the BS in Computer Engineering the only accredited computer engineering program in the state.
BACKGROUND:
Pursuant to Board of Regents Policy 5.201: Instructional Programs, “The board shall determine whether [a] program is to be awarded established status or terminated.”

The UHM College of Engineering offers ABET-accredited undergraduate degrees in Civil Engineering, Electrical Engineering, and Mechanical Engineering. The College also offers the recently approved BS in Construction Engineering, BS in Engineering Science, and the MS and PHD in Civil Engineering, Electrical Engineering, and Mechanical Engineering.

The BS in Computer Engineering is a collaboration between the Department of Electrical Engineering and the Department of Information and Computer Science. The program originally began as the “Computer Track” within the BS in Electrical Engineering program. After several successful years, the College determined that the program had matured to the point that a stand-alone degree in Computer Engineering was justified and that students would benefit from a degree title that better reflected the curriculum. The Board of Regents approved the BS in Computer Engineering, effective fall 2010.

The program has grown beyond original projections, with current enrollment at 119 majors (84 majors projected) and nearly 85 students have graduated from the program. ABET reviewed the program in Fall 2016, and granted full accreditation (10 years), making the UH Mānoa program the only ABET-accredited computer engineering program in the state.

Computer Engineering continues to be a priority for the state and for UH Mānoa. Per the Integrated Academic and Facilities Plan (IAFP), “UH Mānoa must also continue to meet the professional workforce needs of Hawai‘i in areas such as education, medicine, nursing, law, business, social work and engineering. Work must continue to integrate education, innovation and scholarship, across disciplines, and to develop the next generation of Hawai‘i’s leaders.” Further, the program supports the strategic plan by increasing the educational capital (through STEM degrees), developing a globally competitive workforce, and diversifying the economy. Graduates of the program are employed throughout the state and nationally, and several students have gone on to pursue graduate degrees. Per Hawai‘i Industry Sectors, the average salary for computer engineers is $131,000 ($157K nationally).

The program also helps to attract and retain quality computer engineering faculty to UH Mānoa. In the time since the program was approved, the College successfully recruited faculty members who expanded the funded research, research applications, and the commercialization of intellectual property rights and entrepreneurship. As such, the degree has been a “win” for the department both in attracting quality faculty and competitive students.

ACTION RECOMMENDED:
It is recommended that the Board of Regents grant established status to the Bachelor of Science in Computer Engineering in the College of Engineering at the University of Hawai‘i at Mānoa, effective upon Board approval.

Attachment: Proposal for Established Status
Established-Status Request
University of Hawaiʻi at Mānoa

Computer Engineering
Bachelor of Science Program
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The Bachelor of Science (BS) in Computer Engineering (CENG) in the University of Hawai‘i at Mānoa (UHM) was provisionally approved by the Board of Regents in 2010.

- The program gained accreditation in August 2016 from ABET, the national accreditation organization for engineering programs.
- The enrollment has grown steadily to 109 (Fall 2018), which is close to projections given in the Request for the Authorization to Plan.
- Graduates of the program have found employment in at least 15 companies and agencies in Hawai‘i, and at least 12 companies and agencies on the mainland.

We recommend the program for established status.

1 Is the Program Organized to Meet its Objectives?

Computer engineering is an important profession in the high technology areas of computing and networking. It overlaps the intersection of computer science and electrical engineering, i.e., the hardware and software of computers. It is not completely distinct from computer science or electrical engineering, but rather it covers the boundary between computer science and electrical engineering. To understand why this is important, note that there is very little overlap between the disciplines of computer science and electrical engineering. CENG is the only engineering discipline that can apply both computer hardware and software technologies to solve engineering problems. Today, with computer technology playing a part in solving almost all engineering problems, computer engineers will have the skills to successfully solve those problems.

The CENG BS program at UHM has achieved the following:

- It is the only computer engineering program in the State of Hawai‘i.
- It is professionally accredited by ABET, the national standards body for engineering programs.
- It supports higher education in Hawai‘i in high technology areas.
- It helps attract and retain good quality computer faculty to the Electrical Engineering Department who can expand the funded research enterprise, research applications, commercialization of intellectual property rights, and entrepreneurship.
- It trains a highly skilled, flexible, world-class labor force for Hawai‘i’s high technology companies.
- It increases enrollment in STEM programs, and in particular, the College of Engineering.

The following subsections present the program’s objectives and outcomes, curriculum, student admission and requirements, evaluating student performance, and career guidance.
1.1 Program Objectives and Outcomes

The program has Educational Objectives and Student Learning Outcomes. The educational objectives and student learning outcomes are aligned with national engineering educational standards of ABET.

**Educational Objectives**

The educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation. Educational objectives are based on the needs of the program’s constituents. The constituents are our students, alumni, industry, and faculty. Industry includes employers such as government agencies. The following are the objectives:

The expected attainments of graduates are:

1. Computer Engineering graduates will practice computer engineering in industry, education, and public service.
2. Graduates will contribute to the technological and economic development of Hawai‘i, the U.S., and beyond.
3. Graduates will be prepared for admission to top graduate programs.
4. Graduates will continue their professional development, through individual effort and advanced professional education.
5. Graduates will provide technical leadership, with an understanding of the broader ethical and societal impact of technological developments, and the importance of diversity in the workforce.

**Student Learning Outcomes**

The Student Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. They relate to the knowledge, skills and behaviors that students acquire as they progress through the program. The following are the outcomes.
All graduates of the Computer Engineering Program are expected to have demonstrated:

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. An ability to function on multidisciplinary teams.
5. An ability to identify, formulate, and solve engineering problems
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. A recognition of the need for, and an ability to engage in life-long learning.
10. A knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The assessment of the program is with respect to the student learning outcomes, which support the achievement of the educational objectives.

1.2 Curriculum

The CENG BS degree requires a minimum of 125 credit hours, which includes general education, College requirements, and CENG program requirements. The CENG program requirements total 68 credits of basic courses, and 6 credit hours of technical electives. (The general education and College requirements are available upon request.)

CENG Bachelor of Science Degree

- EE 160 Programming for Engineers (4) and EE 205 Object-Oriented Programming (3)
  - (or ICS 111 Intro to Computer Science I, ICS 211 Intro to Computer Science II, and ICS 212 Program Structure)
- EE 211 Basic Circuit Analysis I (4)
- EE 213 Basic Circuit Analysis II (4)
- EE 260 Introduction to Digital Design (4)
- EE 315 Signal and System Analysis (3)
- EE 323 Microelectronic Circuits I/Lab (3/1)
- EE 324 Physical Electronics (3)
- EE 342 EE Probability and Statistics (3)
- EE 361/361L Digital Systems and Computer Design/Lab (3/1)
• EE 362 Discrete Math for Engineers (3)
  o (or both ICS 141 Discrete Math for Computer Science I and ICS 241 Discrete Math for Computer Science II)
• EE 367/367L Computer Data Structures and Algorithms/Lab (3/1)
  o (or ICS 311 Algorithms)
• EE 371 Engineering Electromagnetics I (3)
• EE 467 Object Oriented Software Engineering (3)
  o (or ICS 314 Software Engineering)
• EE 468 Introduction to Operating Systems
• EE 495 Ethics in Electrical Engineering (1)
• PHYS 274 General Physics III (3)
• MATH 307 Linear Algebra and Differential Equations (3)
• EE 467 Object Oriented Software Engineering (3)
  o (or ICS 314 Software Engineering I)
• EE 296, 396, and 496 Projects (Design Experience) (6)
• Engineering Breadth (3) or CENG Technical Elective (3)

**Design Experience**
A key aspect of the CENG program is to have engineering design experience integrated throughout the curriculum. CENG undergraduates must take three design project courses (EE 296, EE 396, and EE 496). These project courses provide opportunities for students to work in teams, develop leadership skills, and work on open-ended design projects similar to industrial experience. The final design course places significant design responsibility on students as they must plan and execute a major design problem.

**Technical Electives**
A minimum of 9 credit hours of technical electives is required. Technical electives may be EE courses at the 300 level or higher or ICS courses from an approved list (available upon request).

**Engineering Breadth Requirement**
Engineering Breadth (EB) may be satisfied by several courses at the 300-level or higher in Civil and Environmental Engineering, Mechanical Engineering, Ocean Resources Engineering, or Biological Engineering. The requirement may also be satisfied by a physical, biological, or computer science course that is at the 300 level or higher.

1.3 Admissions and Graduation Requirements

Once students have been admitted to UHM, their application file is forwarded to the Director of Academic Affairs (DAA) in the College of Engineering (CoE) for further screening. The DAA uses the criteria noted below to determine whether students have met the requirements to enter the CoE in a declared engineering major. There are no quotas set to limit admission of new students; all applicants, freshmen and transfer, who satisfy admission requirements, are admitted.
Beyond the general UHM admissions criteria, the CoE further requires mathematics up to at least trigonometry, with preference for pre-calculus or high school calculus, and one year of high school chemistry and physics with a special emphasis on grades in these courses (B or better preferred). Students are encouraged to take Advanced Placement courses in these subject areas while in high school and to submit AP scores, but this is not required. Freshmen students who do not meet these admission requirements are accepted to the pre-engineering majors (PREN) or encouraged to enroll at one of the UH System Community Colleges in order to complete course or grade requirements. These students may subsequently apply to the CoE for admission as transfer students.

1.4 Evaluating Student Performance

A minimum 2.0 grade point average in all course work taken at UHM is required for graduation. In addition, a separate Major GPA, consisting of all upper division courses in engineering, mathematics and sciences applied to the degree is computed and must also be above 2.0 for graduation.

1.5 Advising and Counseling

Advising is primarily a function of the program’s faculty for declared majors, while monitoring is a function of the Dean’s office. Academic advising is mandatory in the CoE. Each semester, students must meet with a faculty advisor in their program before being allowed to register for the following semester. The purpose of advising is to monitor their academic progress, identify any difficulties a student may have, and discuss academic and career goals. The Director of Academic Advising is available to answer questions, provide advice and counseling, and discuss problems students may have concerning academics, curriculum, or career issues. The Director also conducts an Advising Workshop each year for new and interested experienced faculty advisors.

Career Guidance

Engineering students receive career guidance from a number of sources, including:

- **Academic Advising**: Faculty advisors are encouraged to discuss career issues and opportunities during academic advising.

- **CoE Career Day**: Each semester the CoE sponsors a Career Day, which is a career fair. During the day, recruiters and employers of engineers arrive on campus to display information and talk with students about job and internship and co-op opportunities. In recent semesters, 70 to 90 engineering companies, both local and mainland, have participated.

- **Employer Information Sessions**: Throughout the semester, particularly around Career Day, engineering companies hold on-campus information sessions on their industry and career opportunities. All students are encouraged to submit their resume to the CoE for Career Day, and to seek co-op and internship opportunities throughout their time in the college.
- **Career Preparation Workshops:** Every fall semester, the CoE, along with the UH Mānoa Career Center, organizes workshops on resume writing and summer internships/co-ops specifically for engineering students. During the resume workshop, recruiters from industry are invited to present their insights; and during the internship/co-op workshop, students who have completed internships/co-ops are invited to share their experiences. The college also sponsors workshops on interviewing skills organized by the UHM Career Center.

- **Student Organizations:** Student organizations within the CoE, including the Institute of Electrical and Electronic Engineers (IEEE), Eta Kappa Nu (HKN) honor society, and Society of Women Engineers (SWE),
  - Invite speakers from industry to their meetings
  - Sponsor events such as Speed Networking and Business Card Exchange to give their members the opportunity to meet and talk with industry professionals and alumni.

Students are informed of these events through email lists, the CoE calendar, and word of mouth from faculty, staff and peers. The organizations also provide an opportunity for students to network with their peers, which can lead to career opportunities.

- **Department of Electrical Engineering Web Site:** The Department’s web site has “Tips on Career Planning” on its section on undergraduate advising.

### 2. Is the Program Meeting its Learning Objectives for Students?

The Department of Electrical Engineering evaluates the attainment of educational objectives and student outcomes through its Accreditation Committee, Industrial Advisory Board (IAB), and Student Advisory Board (SAB):

- **Accreditation Committee:** This committee is comprised of around seven faculty members in the Department of Electrical Engineering. It is responsible for updating and maintaining the Student Outcomes and Educational Objectives.

The committee continually goes through a three-phase review cycle, where each phase takes a year:

  - **Performance Measurement Phase:** The level of achievement of student outcomes is measured by quantitative direct and indirect measurements. The direct measurements are from performances in courses. The indirect measurements are input from IAB and SAB.

  - **Assessment Phase:** The performance measures are evaluated to determine if student
outcomes are achieved. Then weaknesses in the program are identified, and suggestions for improvement are proposed.

- **Improvement Phase:** Proposed improvements are implemented.

- **Industrial Advisory Board (IAB):** The IAB represents the interests of industry and employers. It has about a dozen members from companies and agencies such as Northrop Grumman, Boeing, Raytheon, Hawaiian Electric, Spirent Communications, Slickage, Camber Corporation, Oceanit, LiveAction, and Pearl Harbor Naval Shipyard. Committee members who specifically evaluate the CENG BS program come from Spirent Communications, Slickage, Camber Corporation, LiveAction, and Oceanit. The Industrial Advisory Board provides input about the Student Outcomes, Educational Objectives, curriculum, course work, and student performance. The IAB provides a good perspective on the quality of our students since they hire many of our graduates.

- **Student Advisory Board (SAB):** The SAB is a self-organized, volunteer group of students from within our Department who represent the interests of our students. The membership ranges from six to nine students.

In the following subsections are descriptions of how student outcomes are assessed. The assessments follow guidelines by ABET, the national accrediting organization for engineering programs.

### 2.1 Direct Measurements and Assessments of Student Outcomes, and Subsequent Actions

The Accreditation Committee collects quantitative direct measurements of the level of achievement of the 12 student outcomes. Each outcome is measured by 3 or 4 performance criteria. All performance criteria have rubrics that identify the levels of achievement (“exemplary”, “satisfactory”, “marginal”, “unsatisfactory”). The measurements are done once every review cycle, i.e., once every three years.

After the level of achievement is measured, the Accreditation Committee evaluates performance. The Committee determined that the desired level of attainment of student outcomes and their performance criteria is that at least 75% of the students should be “exemplary” or “satisfactory”. This threshold is based on ABET best practices. Student outcomes that fall below the desired level are carefully reviewed to determine actions to improve the program.

In the last review cycle, for eight of the student outcomes, the average percentage of students who were “exemplary” or “satisfactory” was at least 75%. There were four outcomes that did not meet 75%, and these are listed in the table below. Included in this list are the actions taken to address
the deficiency, as well as a short explanation of the assessments.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Assessment</th>
<th>Action to Address Deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. An ability to apply knowledge of mathematics, science and engineering</td>
<td>The outcome was assessed in 7 courses in the last two review cycles. In the first cycle, the average number of students that was “exemplary” or “satisfactory” was about 50%; while in the second cycle, the average was a little over 60%. Both averages were below the desired 75%.</td>
<td>The Department now has more stringent requirements to enroll in an EE course. In past, a C- or better is required in all pre-requisite courses. Now a C or better is required.</td>
</tr>
<tr>
<td>5. An ability to identify, formulate, and solve engineering problems</td>
<td>The outcome was assessed in 2 courses in the last two review cycles. In the first cycle, the average number of students that was “exemplary” or “satisfactory” was over 75%. But this was not the case in the second cycle.</td>
<td>We are currently investigating the drop in performance.</td>
</tr>
<tr>
<td>10. A knowledge of contemporary issues</td>
<td>The outcome was assessed in 2 courses in two review cycles. In the first cycle, the average number of students that was “exemplary” or “satisfactory” was a little below 75%. But in the second cycle, the average was above 75%.</td>
<td>Since the more recent cycle 2 achieved 75%, we will wait for the results of the next review cycle before taking action.</td>
</tr>
<tr>
<td>12. A knowledge of discrete mathematics</td>
<td>The outcome was assessed in 1 course in two review cycles. In the first cycle, the average number of students that was “exemplary” or “satisfactory” was a little below 75%. But in the second cycle, the average was above 75%.</td>
<td>To improve the performance, we replaced the required course ICS 141 (Discrete Math for Computer Science I) with EE 362 (Discrete Math for Engineers) or (ICS 141 and ICS 241). We also upgraded EE 367 Computer Data Structures and Algorithms to cover more material.</td>
</tr>
</tbody>
</table>

2.2 Indirect Assessment and Input from Advisory Boards

Every year, the Industry Advisory Board (IAB) and Student Advisory Board (SAB) provide input to assess and improve the CENG BS program. In the case of the IAB, members meet with faculty and students, and visit facilities, such as instructional laboratories. They provide two inputs that are used to improve our program as well as measure the level of achievement of our students and alumni:

- Individual surveys: All IAB members rate the level of achievement of our graduates with respect to the Educational Objectives and Student Outcomes. The surveys provide space for suggestions and an evaluation of the appropriateness of the objectives and outcomes. IAB members rate how the program attains each outcome.
• **Written report:** This summary report includes suggestions to improve the program.

The SAB provides two inputs about the undergraduate program to our Accreditation Committee:

• **Survey of Program Educational Objectives:** Allows the SAB to comment on the appropriateness of the Educational Objectives.

• **Annual written report:** The SAB surveys students in the Department and provides a written report annually. The report is a valuable source of feedback to our Accreditation Committee, and has led to changes in the program.

The surveys and report serves as an important input to the Accreditation Committee from the student body at large regarding their concerns.

Copies of recent reports from the IAB and SAB are available upon request.

3 Are Program Resources Adequate?

The CENG BS program has sufficient resources to continue the program. The following subsections describe the faculty, budget and sources of funds, and facilities and equipment.

There are 19 faculty that regularly teach EE courses that also support the BS program in CENG, including 16 tenured or tenure-track faculty in the Department of Electrical Engineering, two tenured faculty from the Hawai‘i Center for Advanced Communications (HCAC), and one faculty member who serves as the Director of Academic Affairs in the College of Engineering Dean’s Office. The following Department of Electrical Engineering faculty members teach computer courses:

- Yingfei Dong, tenured associate professor
- Galen Sasaki, tenured associate professor
- Yao Zheng, pre-tenured assistant professor
- Daren Carlson, tenure track assistant professor, which is a joint appointment with the Academy of Creative Media. 50% of Dr. Carlson’s teaching is with the Department of Electrical Engineering, and the other 50% is with the Academy of Creative Media.
- Tep Dobry, College of Engineering’s Director of Academic Affairs. His full time duties do not require him to teach. He teaches voluntarily.

All of the faculty are highly qualified, with PhDs from reputable institutions. Many have extensive industrial experience as well, either as regular employees at some point in their careers, or as consultants. Their dedication and skills in teaching are reflected by a number of teaching awards, and a generally high level of student satisfaction. Most have active research
programs, and are involved with professional societies, particularly the IEEE, the professional society for computer and electrical engineers. A full listing of Electrical Engineering Faculty and affiliated Information and Computer Science Faculty is available upon request.

Given the number of tenured faculty to cover the undergraduate and graduate computer courses offered by the Department of Electrical Engineering, the program is efficient.

The CENG program is supported by resources under the Department of Electrical Engineering. The general funds support faculty salaries and some operations, while the program and fee funds support lecturers, lab equipment and support for our facilities.

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Fund Allocation</td>
<td>$2,527,103</td>
<td>$2,212,597</td>
<td>$2,143,735</td>
<td>$2,022,826</td>
<td>$2,146,035</td>
<td>$2,445,830</td>
<td>$2,293,285</td>
<td>$2,435,780</td>
<td>$2,052,758</td>
</tr>
<tr>
<td>Tuition, Program, Course Fee Allocation</td>
<td>$503,743</td>
<td>$663,735</td>
<td>$803,586</td>
<td>$1,000,480</td>
<td>$967,046</td>
<td>$651,931</td>
<td>$1,149,156</td>
<td>$605,199</td>
<td>$619,515</td>
</tr>
</tbody>
</table>

The CENG program is supported by the following instructional laboratories.

- **Basic Circuits Laboratory**: This lab is used for EE 211 Basic Circuit Analysis. It has 12 workbenches for a capacity of 24 students. Each workbench has a set of equipment consisting of a function generator, oscilloscope, digital lab multimeter, DC power supply, analog multimeter, and desktop PC.

- **Analog Circuit Laboratory**: This lab is used for EE 213 Basic Circuit Analysis II and EE 323L Microelectronics Circuit I Lab. It has 10 workbenches for a capacity of 20 students. Each workbench has a set of equipment consisting of a function generator, oscilloscope, digital lab multimeter, DC power supply, analog multimeter, and desktop PC.

- **Digital Circuits Laboratory**: This lab is used for EE 260 Introduction to Digital Design and EE 361L Digital Systems and Computer Design Lab. The laboratory has 11 workbenches for a capacity of 22 students. Each workbench has an equipment set consisting of a function generator, oscilloscope, digital multimeter, DC power supply, and desktop PC. Each desktop PC has software tools including LogicWorks, MPLab, Xilinx Webpack, and Microsoft Office.

- **EE Department's Open Computer Laboratory**: This computer lab is used for instructional purposes and general student use. It is set up for students working on design projects. It has 20 Desktop PCs, a scanner and a printer. The laboratory is in Holmes Hall 387. Its hours are 730am – 430pm, M-F.

- **College of Engineering Computer Lab**: This is a centralized lab available to all engineering
students and contains many resources students may need for their learning activities. It contains 42 PC workstations, a wide-format printer, a color tabloid laser printer, an HP 4015 black-and-white laser printer, and color scanners. The lab also contains a three-hole puncher, staplers, and other supplies needed by students to assemble their reports. The lab is in POST 208 and is open from 800am – 100am on Monday through Thursday, and from 830am - 800pm on Friday, and 12 noon - 1100pm on Saturday and Sunday.

- **Donald Kim Multimedia Lab**: This is a classroom with 22 PC workstations, two SMART 87” wide interactive whiteboards, high-resolution document camera, and pen-based PC monitor.

4 Is the Program Efficient?

Computer Engineering continues to be a priority for the state and for UH Mānoa. Per the *Integrated Academic and Facilities Plan* (IAFP), “UH Mānoa must also continue to meet the professional workforce needs of Hawai’i in areas such as education, medicine, nursing, law, business, social work and engineering. Work must continue to integrate education, innovation and scholarship, across disciplines, and to develop the next generation of Hawai’i’s leaders.” Further, the program supports the strategic plan by increasing the educational capital (through STEM degrees), developing a globally competitive workforce, and diversifying the economy. Graduates of the program are employed throughout the state and nationally, and several students have gone on to pursue graduate degrees. Per Hawai’i Industry Sectors, the average salary for computer engineers is $131,000 ($157K nationally).

The program also helps to attract and retain quality computer engineering faculty to UH Mānoa. In the time since the program was approved, the College successfully recruited faculty members who expanded the funded research, research applications, and the commercialization of intellectual property rights and entrepreneurship. As such, the degree has been a “win” for the department both in attracting quality faculty and competitive students.

5 Evidence of Program Quality

We will present evidence of the quality of the program: national accreditation, employment of graduates, student awards, faculty teaching awards, and research grants of faculty.

**Accreditation**

The CENG BS received its first accreditation review alongside the existing ABET-accredited programs in 2016. The program is fully accredited by ABET through 2022.

**Employment**
The following is a partial list of companies and organizations that have employed CENG graduates.

Table 5-1
Companies and Organizations that have Employed CENG Graduates (partial list).

<table>
<thead>
<tr>
<th>Company or Organization in Hawai‘i</th>
<th>Company or Organization outside Hawai‘i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booz Allen Hamilton</td>
<td>Advanced Micro Devices (Texas)</td>
</tr>
<tr>
<td>Cetra Technology</td>
<td>Amadeus Consulting (Colorado)</td>
</tr>
<tr>
<td>Fast Enterprise</td>
<td>Amazon (Washington)</td>
</tr>
<tr>
<td>HECO</td>
<td>Apple (California)</td>
</tr>
<tr>
<td>Ibis Networks</td>
<td>Charles Schwab (California)</td>
</tr>
<tr>
<td>National Security Agency</td>
<td>Cinder Solutions (Oregon)</td>
</tr>
<tr>
<td>NAVSEA</td>
<td>Cirrus Logic (Texas)</td>
</tr>
<tr>
<td>Oceanit</td>
<td>Cisco (California)</td>
</tr>
<tr>
<td>Pearl Harbor Naval Shipyard</td>
<td>ERC, Inc (Florida)</td>
</tr>
<tr>
<td>Referentia</td>
<td>Fast Enterprise (Multiple Locations)</td>
</tr>
<tr>
<td>Resurgo</td>
<td>IBM (California)</td>
</tr>
<tr>
<td>Revacomm</td>
<td>Intel (Oregon)</td>
</tr>
<tr>
<td>Sanjole</td>
<td>Lockheed Martin (California)</td>
</tr>
<tr>
<td>Slickage</td>
<td>LG Electronics (California)</td>
</tr>
<tr>
<td>Spectrum</td>
<td>Microsoft (Washington)</td>
</tr>
<tr>
<td>Spirent Communications</td>
<td>NASA (California)</td>
</tr>
<tr>
<td>UCERA</td>
<td>Northrop Grumman (California, Maryland)</td>
</tr>
<tr>
<td>Waysine</td>
<td>Raytheon (California)</td>
</tr>
<tr>
<td>World Wide Technologies</td>
<td>Soft Bank/ARM (Texas)</td>
</tr>
<tr>
<td></td>
<td>SPAWAR (California)</td>
</tr>
<tr>
<td></td>
<td>Sonus Networks (New Jersey)</td>
</tr>
<tr>
<td></td>
<td>Verizon Networks (New Jersey)</td>
</tr>
<tr>
<td></td>
<td>Viasat (North Carolina)</td>
</tr>
</tbody>
</table>

Student Awards
The following CENG graduates have received the Outstanding Graduating Senior (OGS) Award in the Department of Electrical Engineering. This award is given at the end of every fall and spring semester during the College of Engineering’s Convocation. The OGS is selected by a committee of faculty and students.

- Robert Kiessling (Fall 2014)
- Jason Tanabe (Fall 2015)
- Christie Obatake (Spring 2016)
- Corynne Umeda (Fall 2016)
- Allie Kim (Spring 2017)
- Kevin Cho (Spring 2018)
The following student has received the Student Engineer of the Year (SEOY) from the Hawai’i Council of Engineering Societies (HCES)

- Kevin Cho (2018)

**Faculty Teaching Awards**
The following faculty teach EE courses required by CENG students, and have received awards in Teaching.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Award</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Garmire</td>
<td><em>Regents’ Medal for Excellence in Teaching</em></td>
<td>2016</td>
</tr>
<tr>
<td>Vinod Malhotra</td>
<td><em>Regents’ Medal for Excellence in Teaching</em></td>
<td>1991</td>
</tr>
<tr>
<td>Aaron Ohta</td>
<td><em>Regents’ Medal for Excellence in Teaching</em></td>
<td>2015</td>
</tr>
<tr>
<td>Wayne Shiroma</td>
<td><em>Regents’ Medal for Excellence in Teaching</em></td>
<td>2003</td>
</tr>
<tr>
<td>Tep Dobry</td>
<td><em>Chancellor’s Citation for Meritorious Teaching</em></td>
<td>2006</td>
</tr>
</tbody>
</table>

**Research Grants**
As an example of faculty research productivity, we present, Dr. Yingfei Dong, one the tenured faculty in computer engineering. He has the following current research grants:

- NSF CyberCorps SFS, DGE-1662487, “Establishing Scholarship for Service Program at University of Hawai’i at Mānoa” ($5.2M), Jan 2017-Dec 2021, Pl.
- AFRL Cyber Spectrum Collaboration Research Environment (C-SCoRE) program (helping ROTC cadets to learn cyber skills) ($95K), Nov. 2017-Jan 2019, Pl.
- College of Engineering (CoE) Research Experience for Undergraduates (REU) program ($8K), 2017-2018, Pl.

**6 Are Program Outcomes Compatible with the Objectives?**

The table below provides CENG undergraduate enrollment from 2010 to present, which started at 0 and is now 119. The combined undergraduate enrollment of the Department of Electrical Engineering in 2010 started at 220 and has now grown to 355. The number of graduates per year has grown to 26, with 103 graduates to date. When the program was proposed in 2010, we anticipated that enrollment would be roughly 1/3 of the undergraduate enrollment in the Electrical Engineering program (based on enrollment in the Computer Track of the program). At that time, undergraduate enrollment in Electrical Engineering totaled 220 students. While current enrollment in CENG is larger than projected, it still comprises about 1/3 of the overall Electrical Engineering enrollment which grew during this period as well.
7 Are program objectives still appropriate functions of the college and University?

There is a continuing need for the program. The program’s objectives are still appropriate for the College of Engineering and University. It has

- Increased the number of STEM degrees.
- Increased the number of engineering graduates for the Hawai‘i workforce.
- Provided an ABET accredited CENG BS degree program in Hawai‘i.

The employment CENG BS graduates are good. They have found employment in 19 local and 23 mainland companies and agencies as shown in Table 5-1. Also, the US Bureau of Labor and Statistics has national projections for CENG employment: software developers and computer hardware engineers [2]. (As a comparison, the projections of civil, environmental, mechanical, and
Table 7-1. National Employment Data [2].

<table>
<thead>
<tr>
<th></th>
<th>Number of Jobs, 2016</th>
<th>Job Outlook 2016-26</th>
<th>Employment Change, 2016-26</th>
<th>2017 Median Pay (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developer</td>
<td>1,256,200</td>
<td>24%</td>
<td>302,500</td>
<td>$103,560</td>
</tr>
<tr>
<td>Computer Hardware Engineers</td>
<td>73,600</td>
<td>5%</td>
<td>4,000</td>
<td>$115,120</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>288,800</td>
<td>9%</td>
<td>25,300</td>
<td>$85,880</td>
</tr>
<tr>
<td>Electrical and Electronic Engineers</td>
<td>324,600</td>
<td>7%</td>
<td>21,300</td>
<td>$97,970</td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>303,500</td>
<td>11%</td>
<td>32,200</td>
<td>$84,770</td>
</tr>
<tr>
<td>Environmental Engineers</td>
<td>53,800</td>
<td>8%</td>
<td>4,500</td>
<td>$86,800</td>
</tr>
</tbody>
</table>

According to the Hawai‘i Industry Sectors data, the employment outlook for computer engineering graduates in the state “bright”.

State of Hawai‘i Employment Data.

<table>
<thead>
<tr>
<th></th>
<th>Number of Jobs, 2016</th>
<th>Job Outlook 2016-26</th>
<th>Employment Change, 2016-26</th>
<th>2017 Median Pay (per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software Developer: Applications</td>
<td>925</td>
<td>14%</td>
<td>133</td>
<td>$79,934</td>
</tr>
<tr>
<td>Software Developer: Software Systems</td>
<td>764</td>
<td>5%</td>
<td>36</td>
<td>$91,270</td>
</tr>
<tr>
<td>Computer Hardware Engineers</td>
<td>185</td>
<td>-3%</td>
<td>-6</td>
<td>$65,832</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>684</td>
<td>4%</td>
<td>27</td>
<td>$79,456</td>
</tr>
<tr>
<td>Electrical Engineers</td>
<td></td>
<td>-1%</td>
<td>-11</td>
<td>$88,421</td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>2153</td>
<td>6%</td>
<td>129</td>
<td>$79,976</td>
</tr>
</tbody>
</table>

8 Conclusion

The Computer Engineering program is an important engineering discipline that covers computer hardware and software. Currently, UH Mānoa offers the only computer engineering program in the State of Hawai‘i. The program is now fully accredited by ABET, the national engineering accreditation organization.

The program has outperformed projections, with enrollment at 119, increasing the overall undergraduate enrollment in the department from 220 in 2010 to 355 in 2018, and our projections indicate that enrollment will continue to grow. Computer Engineering graduates are contributing as part of Hawai‘i’s high technology industry.

The CENG program continues to be a priority for the state and for UH Mānoa as it supports our
strategic plan by increasing the educational capital (through STEM degrees), developing a globally competitive workforce, and diversifying the economy. The program also helps to attract and retain quality computer engineering faculty to UH Mānoa. In the time since the program was approved, the College successfully recruited faculty members who expanded the funded research, research applications, and the commercialization of intellectual property rights and entrepreneurship.

The BS in Computer Engineering should be granted established status.
MEMORANDUM

TO: Benjamin Kudo, Chair
    Board of Regents

VIA: David Lassner
     President

VIA: Donald Straney
     Vice President for Academic Planning & Policy

VIA: Michael Bruno
     Provost

FROM: Nathan Murata, Dean
     College of Education

SUBJECT: REQUEST FOR ESTABLISHED STATUS FOR THE DOCTOR OF EDUCATION IN PROFESSIONAL EDUCATIONAL PRACTICE AT THE UNIVERSITY OF HAWAI‘I AT MĀNOA

SPECIFIC ACTION REQUESTED: It is respectfully requested that the Board of Regents grant established status to the Doctor of Education (EdD) in Professional Educational Practice in the College of Education at the University of Hawai‘i at Mānoa.

RECOMMENDED EFFECTIVE DATE: Effective upon Board approval.

ADDITIONAL COST: There are no additional costs associated with this request.

PURPOSE: The Doctor of Education (EdD) in Professional Educational Practice prepares educators for leadership roles and to become agents of change in educational settings. The EdD is designed to educate practitioners in three distinct groups: (1) school leaders (principals, superintendents, and
curriculum specialists); (2) teacher leaders (community college and four-year college faculty, school-based teachers, and clinical teacher educators); and (3) leaders in educational organizations (professional staff at organizations and agencies, and community college leadership).

BACKGROUND
Pursuant to Board of Regents Policy 5.201: Instructional Programs, “The board shall determine whether [a] program is to be awarded established status or terminated.”

The UHM College of Education prepares tomorrow’s teachers, administrators, and education personnel; provides professional development for teachers and education professionals; disseminates information for understanding educational issues to school and community groups; and conducts basic research related to issues in education. The College offers three baccalaureate degrees, two post-baccalaureate certificates, ten master’s degrees, and four doctoral degrees, including the EdD program. State-approved teacher education programs leading to initial teacher licensure are offered at the baccalaureate through the master’s level. Many programs are offered through distance education, including interactive video, web-based, and hybrid formats.

The emergence of professional doctorates in education is a response to prevailing demands for change from within the profession and from schools of education. There is a recognized need for educational professionals to develop advanced skills that are relevant to their professional work, to reflect both critically and ethically on the nature of their professional practice, and to learn to work collaboratively with colleagues and other professionals in related fields. Colleges of education are also under pressure to engage students in more relevant field-based projects—in work that is of immediate practical value and concerned directly with the kinds of problems and issues that educational professionals deal with on a day-to-day basis.

In response to these demands, the UHM College of Education proposed a professional practice doctorate in education to prepare students for leadership roles at all levels of education and other policy or practice positions where the utilization of research is an essential component of professional performance. The Board of Regents provisionally approved the program on January 20, 2011. The EdD received substantive change approval from the WASC Senior Commission of Universities and Colleges on November 19, 2012.

The UHM EdD is accessible to qualified candidates across the state and requires sixty-four semester hours of credit spread over three years of study. Students are organized in cohorts to encourage collaboration on projects, and courses are conducted in a combination of face-to-face instruction during the summer, fall, and spring (40%); online instruction (20%); and participation in field-based projects during fall and spring semesters (40%). The program is currently running its third cohort of 29 students (admitted in spring 2017). To date, two cohorts (54 graduates) have completed the program.

The EdD program is meeting its objectives of preparing educators for leadership and to become agents of change in Hawaii. Two of the program graduates currently sit on the Hawai‘i Charter School Commission, one is the interim CEO of OHA, and several are in the capacity of Head of
Schools. On the Completion Survey for Cohort I, eleven out of twenty-one (52%) survey respondents indicated that they changed career positions since beginning their EdD Program, with many serving as leaders across public and private K-12 institutions, and within the Department of Education and UH System. Seven did so during the course of the program and four did so shortly after graduation. Career highlights may be found in the proposal.

As an indicator of program excellence, in 2018, the UHM EdD program received the Program of the Year Award by the Carnegie Project on the Education Doctorate (CEPD). The Program of the Year award is bestowed annually to programs that are distinctive, innovative and useful. The prestigious award recognizes the past 11 years of work on the part of the faculty and community to develop, implement and continuously improve the program. As further indication of quality, two students have received the CEPD Dissertation in Practice Award (Dr. Makalapua Alencastre, UH Hilo, Ka Haka Ula O Keʻelikōlani, 2014 and Dr. Erin Thompson, Leeward Community College, 2018). Both were selected for their high-quality research and potential to impact practice in education.

The UHM College of Education along with its community partners continue to build capacity for systemic change by graduating educational leaders, at the doctoral level, who make a direct impact on our education systems (i.e., UH System, HIDOE, Public Charter Schools, Independent Schools). We strongly recommend that the Board of Regents grant established status to the UHM EdD in Professional Educational Practice.

**ACTION RECOMMENDED:**
It is recommended that the Board of Regents grant established status to the Doctor of Education (EdD) in Professional Educational Practice in the College of Education at the University of Hawai‘i at Mānoa.

Attachment: Proposal for Established Status

cc: Executive Administrator and Secretary of the Board Kendra Oishi
PROPOSAL TO CONVERT FROM PROVISIONAL TO ESTABLISHED STATUS

Doctor of Education in Professional Educational Practice (EDPP)

College of Education

University of Hawaiʻi at Mānoa
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**Introduction**

The Doctor of Education (EdD) in Professional Educational Practice is designed as a professional practice doctorate—an advanced degree directed to the education of practitioners in three distinct groups: (1) school leaders (principals, superintendents, and curriculum specialists), (2) teacher leaders (community college and four-year college faculty, school based teachers, and clinical teacher educators), and (3) leaders in educational organizations (professional staff at organizations and agencies, and community college leadership).

The emergence of professional doctorates in education is a response to prevailing demands for change within the profession and schools of education. There is a recognized need for educational professionals to develop advanced skills that are relevant to their professional work, to reflect both critically and ethically on the nature of their professional practice, and to learn to work collaboratively with colleagues and other professionals in related fields. Colleges of education are also under pressure to engage students in more relevant field-based projects—in work that is of immediate practical value and concerned directly with the kinds of problems and issues that educational professionals deal with on a day-to-day basis.

In response to these demands, we have implemented a professional practice doctorate in education that is aligned with the recent distinction made by the American Educational Research Association (AERA) between research doctorates and educational practice doctorates. AERA defines education research doctorate programs as programs aimed at preparing students for careers as researchers and scholars in academic institutions, universities, research institutes and the like. Educational practice doctorates are defined as programs aimed at preparing students for leadership roles at all levels of education and other policy or practice positions where the utilization of research is an essential component of professional performance.

Our doctorate is in line with similar reforms in doctoral education initiated by the Carnegie Foundation for the Advancement of Teaching. Thus, the professional practice model exemplified by our EdD Program is in keeping with recent developments in the field at other research institutions. For example, the reform of EdD degrees is supported by the Council of Academic Deans of Research Education Institutions (CADREI), the American Association of Colleges of Teacher Education (AACTE), the American Educational Research Association (AERA), the University Council on Educational Administration (UCEA), and leading experts in the field.

The professional practice degree at the College of Education is accessible to qualified candidates across the state and requires sixty-four semester hours of credit spread over three years of study. Students are organized in cohorts to encourage collaboration on projects, and courses are conducted in a combination of face-to-face instruction during the summer, fall, and spring (40%); online instruction (20%); and participation in field-based projects during fall and spring semesters (40%).

The program of study makes use of what Lee Shulman (Olson and Clark, 2009) refers to as signature pedagogies: methods of teaching by means of which professionals are initiated into a professional community. This approach to teaching includes collaboration with key stakeholders in the profession. There is a strong applied research focus in which students work on problems of
practice in institutional settings. College coursework, conducted mainly during the summer, is closely related to the field projects that are pursued during fall and spring semesters.

This degree program has kept with the interdepartmental nature of its founding as a collaborative and inclusive project. The COE Dean's Council (which includes all deans, department chairs, and directors) and the COE Faculty Senate have been kept informed of the Program's positive developments since its launch and they continue to support the idea of our cross-disciplinary practitioner doctorate. Faculty members regularly meet with the COE Dean, who continues to vigorously back the program. The program currently includes representatives from five departments within the college as well as representatives from the other UH system campuses, Hawai‘i Department of Education, Hawai‘i Association of Independent Schools, and the Kamehameha Schools.

Contact was made early in the planning process with representatives of the Carnegie Project on the Education Doctorate (CPED), and Dr. David Imig, Director of CPED, was invited to Honolulu to meet with the planning committee and University of Hawai‘i administrators. Dr. Imig provided valuable input to the committee regarding similar programs at comparable institutions, and his guidance helped direct the attention of the planning committee to some of the more notable and innovative approaches that are being explored at other universities. The Program continues to work closely with CPED by participating as leading members in CPED meetings, convenings, and emerging initiatives.

In addition to studying doctoral reform efforts at comparable institutions, planning committee members attended several sessions at the American Association of Colleges of Teacher Education devoted to the planning and implementation of similar professional practice doctorates, and they acknowledge the influence of key works pertaining to doctoral education reform.

**(1) Is the Program Organized to Meet Its Objectives?**

The College of Education EdD aims to prepare educators for leadership roles and to become agents of change in educational settings. The goal is to provide a strong experiential basis for individual professional development—one that is informed by research into best practices. We intend to produce graduates who are reflective practitioners equipped with essential understandings of research; who can work collaboratively with other community members in response to diverse interests and needs; who consider the practical and ethical implications of their work; who are able to take a broad, interdisciplinary perspective on a wide variety of educational issues; and who are adept at applying their skills and knowledge to solving practical educational problems.

The program itself is cohort-based and engages participants in group projects to develop a sense of professional solidarity and leadership. By working in collaboration with experienced leaders in the field on problems arising in real settings, participants gain experience in mobilizing community resources to respond to diverse community interests.
Program Description. The College of Education EdD program consists of sixty-four credit hours of study over a period of three years, including summers. This is consistent with similar programs at equivalent institutions. For example, the EdD program at the USC’s Rossier School of Education (a former competitor institution in Hawai‘i) is a sixty-unit program, and the EdD in Leadership and Policy at Vanderbilt’s Peabody College (the top-rated program in the country) requires nine semesters of study over a period of three years. In 2011, Harvard also launched a three-year, practice-based, cohorted Doctor of Education Leadership—the EdLD. In typical professional practice programs, students are enrolled in cohort groups and instruction is provided in the summer and in the evenings and weekends. Instruction in coursework in the UHM EdD is conducted during the summer semester as this is a more convenient option for participants located on neighbor islands. Online and scheduled weekend meetings are used to supplement summer instruction and facilitate direction and advising of projects.

Over the span of three summers, students in the EdD at Mānoa are required to take a total of twenty-seven credits of course work (nine credits in each of three summer session), which constitutes the principle vehicle for direct instruction in the program. A further thirty-six credit hours are devoted to supervised field projects centering on two major problems of practice—a group consultancy project and an individual applied research project. These projects require some traditional instruction; a schedule of meeting times (employing either face-to-face instruction, synchronous technology such as Blackboard Collaborate, Google Hangout, or a combination of them) provides a forum for project groups to discuss progress with their peers and advisors. The final (fourth) summer hosts a concluding program conference where students present the results of their applied research project. In keeping with UH policy, the students are required to enroll in at least one credit in this final summer semester.

Students are admitted as far as possible in cohorts of around 27 students. We have admitted two cohorts, thus far, and our third cohort of 29 students was admitted in May 2017. We are currently in preparation for admitting cohort IV, slated to start in the Summer of 2020. Students in the cohort are required to complete the same set of courses in the same sequence. This arrangement is designed to take advantage of the cohort effect, “the influence of other students in the same class who form a learning community of support and critique” (Shulman, Chronicle of Higher Education, April 4, 2010).

Curriculum. The following table shows the distribution of credit hours across the entire course of study for our EdD Program. Each cohort commences with summer coursework, followed by fall and spring semesters of field studies and field studies meetings. The pattern repeats in the second and third years, concluding with the additional fourth summer, when the doctoral candidates present the results of their applied research projects, file their dissertations in practice, and graduate.

<table>
<thead>
<tr>
<th>Summer Coursework</th>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Summer Conference</th>
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Summer coursework. In each of the three summer semesters, students take nine credits of coursework for a total of twenty-seven credits. These courses provide students with the research tools needed to operate successfully as team members and independently in practicum situations as they work on their problems of practice during the fall and spring semesters. There was no need to add any new courses as the desired content existed at the graduate level in courses that were already in existence in various COE departments.

Core coursework in research methods and evaluation are required in each of the summer semesters for a total of twelve credits hours. A mixed methods advanced research course was developed by the Department of Curriculum Studies and was available for the second summer of study, designed to address a professional practice program. This course serves as one of the research methods coursework requirements. In addition, a course in the use of technology (3 credit hours) is also offered. The remaining twelve hours (four courses) vary according to the makeup of the cohort. The purpose of this arrangement is to provide some flexibility in adapting coursework to accommodate for the needs of each cohort.

The aim of the summer courses is to provide the content knowledge and inquiry tools that students will put into practice in their practicum projects and dissertations (in Practice).

<table>
<thead>
<tr>
<th>LIST OF COURSES BY SEMESTER.</th>
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<tr>
<td><strong>Summer One (9 crs.)</strong></td>
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<td><strong>Fall One (6 crs.)</strong></td>
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<td><strong>Spring One (6 crs.)</strong></td>
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<td><strong>Summer Two (9 crs.)</strong></td>
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<td><strong>Fall Two (6 crs.)</strong></td>
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<td><strong>Spring Two (6 crs.)</strong></td>
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Total = 64 credit hours
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<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Course Code</th>
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<tbody>
<tr>
<td>Summer Three</td>
<td>1. Seminar: Engaging Diverse Student Populations: Leadership for Social Justice</td>
<td>EDEA 780M</td>
</tr>
<tr>
<td></td>
<td>2. Seminar: Administrative Problems and Issues</td>
<td>EDEA 780K</td>
</tr>
<tr>
<td></td>
<td>3. Critical Qualitative Approaches to Educational Research</td>
<td>EDCS 732</td>
</tr>
<tr>
<td>Fall Three</td>
<td>Professional Doctorate Practicum: Individual Applied Research Project</td>
<td>EDUC 720</td>
</tr>
<tr>
<td>Spring Three</td>
<td>Professional Doctorate Practicum: Individual Applied Research Project</td>
<td>EDUC 720</td>
</tr>
<tr>
<td>Summer Four</td>
<td>EdD Conference - Presentations of Dissertations in Practice</td>
<td>EDUC 730</td>
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</tbody>
</table>

There are five core courses (three on research methods, one on leadership and administration, and one on context of education). As the college offers several options for each of the three research methods courses, the program selects which option will be offered to a particular cohort. In addition, twelve credits of coursework will vary according to the composition and needs of the cohort. Generally, these courses are selected in advance of the formation of the cohort, but some flexibility will be retained in order to adapt coursework to the needs of the cohort. Each student in a cohort, as far as possible, takes the same courses, in the same sequence, at the same time, with their cohort. Graduate courses offered in the College of Education provide a wide selection of graduate level coursework. Course descriptions are available upon request.

**Admissions.** The educational leadership doctorate is an interdepartmental offering that draws on the expertise of faculty from across the college as well as leading practitioners in the field of education. The degree focuses on the idea of educational leadership, not in the sense of administrative training, but in the sense of developing stewards of the profession who exhibit professional standards of knowledge and practice and are dedicated to the pursuit of educational change and renewal (Walker et al, 2008).

**Admissions requirements.** The admissions process is a critical step in determining the closeness of fit between the program and each applicant’s aspirations. Care is taken to ensure that applicants understand that the EdD has a different purpose from the PhD, and vice versa. Candidates are selected via a different application process with due regard to candidates’ commitment to pursue a professional practice degree instead of a research degree. Application materials contain a clear description of available options. Professional doctorates demand standards of rigor in professional practice—high standards of inquiry directed to improvements in practice. Candidates are therefore selected according to their capacity to pursue an advanced degree of this kind. Relevant experience in the profession is expected, in addition to academic ability, in determining admissions.

Applicants for admission are required to hold a master’s degree from an accredited university with a minimum GPA of 3.0. Foreign applicants are required to have a minimum TOEFL score of 600. Applicants also should have a minimum of five years of experience in the field, either as teachers or as administrators, or in other relevant education roles. Three professional recommendations/references are required in addition to Graduate Division application, transcripts, résumé, and leadership letter. Cohort III applicants were required to attend a group face to face interview as well as complete a writing sample at the time of the interview.
**Degree Requirements.** The program features a combination of coursework and fieldwork organized around and integrated with projects dealing with problems of practice.

In order to successfully complete the program, candidates must complete the required coursework with a minimum GPA of 3.0. Candidates must submit a group consultancy project in which they have actively contributed, proportionate to the size of the group. And finally, they must complete a satisfactory action research project, submit an action research report of approximately eighty pages, and present the results at a concluding public forum in the form of a conference.

**Required course work.** All EdD candidates are required to complete the equivalent of twenty-seven credit hours of course work. Course work varies according to the nature of the cohort groups, but all students are required to complete fifteen credit hours of fixed content that includes instruction in research and evaluation.

**Group Consultancy Project and Report.** Group Consultancy Projects are independent research and reflective activities embedded in group projects. Each project is formed around an actual problem of practice submitted by external clients. Students are organized in research teams to explore problems of practice submitted by state agencies such as school districts, post-secondary institutions, philanthropic organizations, and so on. The submissions, arising from “Requests for Proposals” (RFPs), are screened for applicability and a final set prepared for the “consultancy” teams. The aim is for each group to provide a contextual analysis of their assigned problem, to research the problem, to conduct data analysis (financial, operational, evaluative and demographic, as the case may require), to consider ethical implications, to provide program recommendations, and to offer strategies for implementation. All EdD candidates complete twelve credits of group fieldwork during the fall and spring semesters of the first year of the program. Participants receive a grade based on their individual participation in the group project.

**Dissertation in Practice.** Students formulate an individual inquiry project that arises in the context of their own practice as professional educators. These projects are discussed in conference with an interim advisor along with a professional mentor. The object of this work is to enable EdD candidates to demonstrate their analytical skills, research ability, professional knowledge, and understanding of context and culture in which the problem is embedded. In addition, it is a chance to apply their skills by implementing a well-researched plan of action that is directed to an improvement in practice. All EdD candidates complete a total of 24 credits of individual fieldwork during the fall and spring semesters of the second and third years of the program. They also help to plan and make presentations of their projects at a concluding program conference in the final summer semester. The degree of EdD is awarded after successful completion of all phases of the action research project. This entails, in addition to carrying out the project in the field, the submission and presentation of a report containing sections with details of the nature of the problem, a review of literature conducted to inform the implementation of the project, an account of the plan of action and the solutions adopted, a discussion of methods used for the collection of data regarding its implementation, a summary of data collected, analysis of data, and a discussion section with recommendations for future practice.

The committee of advisors (corresponding roughly to the dissertation committee in a PhD program) composed of members of the graduate faculty, with input from professional mentors,
determines who has conducted a successful action research project that meets professional and ethical standards of practice. Each candidate then makes the final presentation of their project at the conference attended by fellow participants, graduate faculty, professional mentors and other interested parties.

Assessment of Coursework and Projects. In conformity with UHM Graduate Division (GD) requirements, students are expected to maintain a GDGPA of 3.0 or above. Students who obtain a C grade or below in any course are required to repeat the course or its equivalency at a later date. Assessments completed in EDUC 710, EDUC 720 and EDUC 730 include: Group Consultancy Project and Report, Professional Practice Dissertation Project, Professional Dissertation Project Final Report, and Conference Presentation. When a student fails to achieve “acceptable” in any one or more of the requirements, they are asked to revise their work and resubmit. If, after resubmitting their work, they fail to achieve above minimal in any or all of the requirements, they may be offered the opportunity of an extended period of one semester to complete their work satisfactorily or of joining a later cohort. If after an extended period of one semester, a student fails to attain “acceptable” on all requirements, they will be dismissed from the program. Appendix C: Assessment Criteria for Degree Requirements is available upon request.

Program Administration. The EdD in Professional Educational Practice is housed in the College of Education and is a college-wide, interdepartmental offering, much in the same way that the PhD in Education is a college-wide degree. The program is directed by a graduate chair/program director selected from among the graduate faculty in Education and appointed by the Dean of the College of Education with approval from the Graduate Division. The director is responsible for day-to-day operations of the program.

In addition, the program director chairs an EdD Program Advisory Committee (EDPAC) with representatives of the various groups—students, faculty, staff, other partners—involved in the program. Due to the practical nature of the EdD, recognition must be given to the important contribution and expertise of professionals in the field. The partnership between field experts and UH faculty in what Olson and Clark (2009) refer to as “Leader-Scholar Communities” is of critical importance to the success of the degree program and to its efficient implementation. Thus, its organizational structure makes provisions that facilitate cooperation between the university and the field, between theory and practice, and between advisors and students. Issues arising in the EDPAC include such matters as access to the field, curriculum, professional guidance on matters of professional expertise, program evaluation, program planning, and professional mentoring.

Program Advising. Due to the partnership nature of the EdD and the requirement that students conduct projects dealing with problems of practice in actual educational settings, program advising involves a combination of COE graduate faculty members and professional educational practitioners. Recognition of the dual nature of the required expertise in leadership experience and research know-how serves to ensure the close integration of theory with practice while recognizing the vital contribution of experts in the field. Faculty advisors help guide candidates’ projects from the perspective of their own areas of academic knowledge; external field advisors, on the other hand, make vital contributions on practical matters by facilitating field work, advising on institutional matters, and sharing experiences in educational leadership.
The current structures and organization of the EdD Program, including the curriculum, admissions requirements, degree requirements, along with its distinctive administrative and advising organizational structures focused on the close integration of theory with practice, effectively allow the program to meet its objectives.

(2) Is the Program Meeting its Learning Objectives for Students?

Descriptions of Major Assessments

The following presents a brief synopsis of whether the program has succeeded in achieving its four student learning objectives (SLO) in the context of its two major milestones: the group consultancy project and the dissertation in practice. At the time of this analysis, Cohort II had completed their Group Consultancy Project and the Midterm Assessment of Dissertations in Practice. Assessment criteria for degree requirements and a description of each major assessment are available upon request.

Cohort I

SLO #1: Work collaboratively to solve problems and implement plans of action.

The program has been very successful in creating an opportunity for our learners to work collaboratively to solve problems and implement plans of action. Based on the Group Consultancy Project and Report (GCPR) for Cohort I, 93% of the cohort met the target for this SLO. According to the student surveys of that report, the majority reported great satisfaction with the collaboration among group members and credit their group projects’ success with the passion, diverse skills, and synergy generated when they worked together. In the words of the student mentors and advisors, they also echoed the strong collaboration they observed when working with their student groups.

SLO #2: Application of research to bring about improvements in problems of practice.

The program has succeeded in bringing about improvements in problems of practice. Based on the GCPR, all 28 learners of Cohort I received marks of “acceptable” or better with respect to the application of research methods to project, review of literature, and data collection and analysis. Furthermore, all the clients of the Group Consultancy Project not only recognized the value as well as the short- and long-term benefits of this endeavor, but also have since taken actions to implement the recommendations of the group consultancy projects’ respective final report.

The Midterm Assessment of Dissertation in Practice also assesses SLO #2. On this assessment 27 of 28 candidates met Acceptable or Target on SLO #2. Many of the Cohort I’s dissertations focused specifically on trying to improve current problems in education. For example, given the heterogeneity of local cultures that make up the student population in Hawai‘i, many learners elected to research culture-based education and how it can be effectively utilized to improve student performance. Especially, given the substantial number of Native Hawaiians students in Hawai‘i’s DOE that are at educational risk, it is admirable how many recognized this and decided to try and address this situation.

SLO #3: Reflect ethically and critically on matters of educational importance.

The program has succeeded in getting learners to reflect ethically and critically on matters of educational importance. Based on the GCPR, all 28 learners of Cohort I received marks of Target with respect to SLO #3. Based on the Ed.D. Completion Survey for Cohort I, 100% reported of the
importance of the professional ethics and dispositions that were gained through their experience within the program, 86% acknowledged the importance of knowing the ethics of conducting educational research, particularly on human subjects, and 96% reiterated the importance of the ability to understand and critique research conducted by others.

The Midterm Assessment of Dissertation in Practice also assesses SLO #3. On this assessment 27 of 28 candidates met Acceptable or Target on SLO #3. Moreover, many of the dissertations of cohort members reflected conscious effort in researching topics of major educational importance. For example, some of the dissertation areas included effective school leadership, the transformational importance of teachers to teacher-leaders, as well as determining the financial stability of small independent schools. It was the breadth of those dissertations that clearly reflected the program’s success in this regard.

SLO #4: Take a broad interdisciplinary perspective on educational issues.

The program has succeeded in having their learners gain experience in taking a broad interdisciplinary perspective on educational issues, assessed by the GCPR and the Midterm Assessment of Dissertation in Practice. According to the EdD Completion Survey, learners recounted how networking was vital in order to gain a more comprehensive perspective when addressing problems in education. They also recollected how the Consultancy Project, in particular, was instrumental in opening their own outlook of education to new paradigms. All 28 candidates received a Target rating on SLO #4 on the GCPR. Finally, the entire cohort was unanimous in citing how beneficial it was for them to incorporate an interdisciplinary perspective in conducting their own dissertation in practice.

On the Midterm Assessment of Dissertation in Practice, 27 of 28 candidates received an Acceptable or Target rating on SLO 4. In analyzing their respective dissertations, it was educationally clear that the entire cohort made great effort to take an interdisciplinary approach to researching their subject areas. For example, many learners elected to research culture-based education and its implementation in student instruction. Hence, in the effort to improve culture-based instruction, it was necessary for candidates to firmly understanding current western standards and pedagogy first, before evaluating where those standards can be effectively infused with the culture they wish to merge. Consequently, it becomes apparent that the program was successful in cultivating the use of interdisciplinary perspectives among its learners.

Cohort II

Appendix E (available upon request) provides data for each SLO embedded in the Group Consultancy Project and Report and a Student Learning Outcomes Survey for Cohort II. These data indicate the candidates in Cohort II were meeting the student learning objectives.

SLO #1: Work collaboratively to solve problems and implement plans of action.

The program has been very successful in creating an opportunity for our learners to work collaboratively to solve problems and implement plans of action. Based on the Ed.D. Consultancy Project Evaluation, the learners of Cohort II reported spending as much as 80 hours within a 1 to 2-week period in client meetings and as much as 160+ hours for at least a 4-week period in team meetings in working with their client, advisors, and mentors in completing their Consultancy Project. In addition, learners also reported that being members in the Consultancy Teams led to
group synergy, which allowed the diverse talents of individual group members to be unleashed and utilized to complete their group tasks.

In that same evaluation, Faculty Advisors and Field Mentors confirmed their learners’ responses by reporting they spent as much as 160+ hours for at least a 4-week period in meetings and working with their assigned teams. Moreover, the Clients themselves universally reported active participation and collaboration with their Consultancy Teams with effective lines of communication throughout the process, which they felt were a major factor in the success of their assigned teams.

In 2015-2016, a group of faculty, mentors, and Cohort II students implemented a research study analyzing the impacts of consultancy projects on both student and community client learning. The study used practice theory framework and analyzed both existing and new data from Cohort I and II projects as well as data from community partners. The project found that consultancy projects, as a collaborative “inquiry-in-action”, demonstrate a potential to transform students’ and clients’ practices by enhancing the cultural-discursive, material-economic, and social-political arrangements that shape the leadership practice in consultancy project partnerships. A paper, based on this study is in print in our COE Educational Perspectives journal (Twomey, 2018), and another manuscript reporting on the study findings was submitted to Studies in Higher Education (Twomey et al, under review).

SLO #2: Application of research to bring about improvements in problems of practice.

The program has succeeded in giving an opportunity for our learners to bring about improvements in problems of practice. The learners of Cohort II reported spending as much as 160+ hours for at least a 4-week period conducting all facets of the research process (i.e., literature review, data gathering, data analysis, write-up) towards completing their Consultancy Project. In addition, many learners commented how the application of research taken to complete the Consultancy Project well-prepared them for their own dissertation research. This was also confirmed by the findings of the research study that explored the impacts of consultancy project on student learning.

Faculty Advisors and Field Mentors also reported spending up to 80 hours for 2 weeks working with their respective learners in providing feedback and guidance; reaffirming the application of research that was taking place. Moreover, Clients of the Consultancy Project expressed their appreciation and gratitude for the work undertaken by their respective Consultancy Teams as well as shared how they intended to implement the recommendations listed in their respective final reports.

Finally, many of the cohort’s dissertation topics focus specifically on trying to improve current problems in education. For example, topics ranged from the effectiveness of coaching, to leadership and organizational structures and their potential impact on independent schools, to educational crises leadership. Hence, it is a promising sign that our EdD candidates are trying to address current problems in education.

SLO #3: Reflect ethically and critically on matters of educational importance.

Many of the dissertation topics of cohort members do reflect conscious effort towards researching topics of major educational importance. For example, some the dissertation topics included the importance of motivation in program effectiveness, factors that contribute and the need for programs that foster entrepreneurship, and the importance of digital leadership as professional development. Hence, such topics are a good sign that our learners are taking account of matters of educational importance in their own selection of dissertation topics.
SLO #4: Take a broad interdisciplinary perspective on educational issues.

It was educationally clear that the entire cohort made great effort to take an interdisciplinary approach to researching their subject areas. For example, three learners selected the impact of ho‘ike on Hawaiian focused charter schools, how to reshape learning on the Leeward Coast, and Marshallese indigenous learning frameworks, respectively. All three topics are not only worthy topics for educational research, but clearly illustrate how each learner will eventually in due course incorporate an interdisciplinary approach as they research their subjects.

(3) Are the Program Resources Adequate?

All the resources required for implementation and maintenance of this program come from tuition, fees, and the reallocation of COE resources.

a) All graduate faculty in the field of education are eligible to act as advisors in the EdD program. The list shown in the table below includes College of Education faculty, affiliates, and community mentors who have taught and advised in the EdD.

b) The library resources that are currently available are sufficient. No new resources have been required beyond the library holdings for the PhD program.

c) The College and University possess the necessary resources to offer this degree. Tuition and fees have been sufficient to fund needed staff, provide graduate assistantships, and cover costs of physical resources.

EdD Program Faculty, Mentors, and Their Areas of Expertise

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Area of Expertise</th>
<th>Cohort(s)</th>
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<tbody>
<tr>
<td>Hunter McEwan</td>
<td>Faculty, Director ('11-'14) (Retired Faculty)</td>
<td>Educational Foundations</td>
<td>I and II</td>
</tr>
<tr>
<td>Jeffrey Moniz</td>
<td>Faculty, Director ('14-'16)</td>
<td>Teacher Education</td>
<td>I and II</td>
</tr>
<tr>
<td>Sarah Twomey</td>
<td>Faculty, Director ('16-18)</td>
<td>Curriculum Studies</td>
<td>I, II, III</td>
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<tr>
<td>Ron Heck</td>
<td>Faculty, Director ('18-present)</td>
<td>Leadership, Administration, Policy</td>
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<tr>
<td>Nathan Murata</td>
<td>Dean</td>
<td>College of Education</td>
<td>I, II, III</td>
</tr>
<tr>
<td>Baoyan Cheng</td>
<td>Faculty</td>
<td>Educational Foundations</td>
<td>I, III</td>
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<tr>
<td>Than Truc Nguyen</td>
<td>Faculty</td>
<td>Curriculum. Research &amp; Development</td>
<td>I, III</td>
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<tr>
<td>Patricia Haligao</td>
<td>Faculty</td>
<td>Curriculum Studies</td>
<td>III</td>
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<td>Jamie Simpson-Steele</td>
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<td>Kimo Cashman</td>
<td>Faculty</td>
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<td>Kahunawai Wright</td>
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<td>III</td>
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<td>Julie Kaomea</td>
<td>Faculty</td>
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<td>II, III</td>
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<tr>
<td>Eomailani Kukahiko</td>
<td>Faculty</td>
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<tr>
<td>Chris Au</td>
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<tr>
<td>Barbara Dougherty</td>
<td>Faculty Mentor</td>
<td>CRDG</td>
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<td>Lori Fulton</td>
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<tr>
<td>Theresa Lock</td>
<td>Instructor Mentor</td>
<td>Early Childhood</td>
<td>III</td>
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<tr>
<td>Amanda Smith</td>
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<td>III</td>
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<tr>
<td>Deborah Zuercher</td>
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<tr>
<td>Larson Ng</td>
<td>Instructor</td>
<td>Curriculum Studies; Quant. Methods</td>
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</tr>
<tr>
<td>Name</td>
<td>Role</td>
<td>Institution/Department</td>
<td>Courses</td>
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<td>-------------------------------</td>
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<tr>
<td>Joanne Cooper</td>
<td>Instructor (Retired Faculty)</td>
<td>Educational Administration</td>
<td>I and II</td>
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<tr>
<td>Sanjeev Sridharan</td>
<td>Instructor</td>
<td>Evaluation Methodology</td>
<td>I, II, III</td>
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<tr>
<td>Ruth Fletcher</td>
<td>Instructor &amp; Mentor</td>
<td>Punahou Dean; Action Research</td>
<td>I and II</td>
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<tr>
<td>Lori Ideta</td>
<td>Instructor &amp; Mentor</td>
<td>UHM VC; Sociocultural Contexts</td>
<td>I, II, III</td>
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<tr>
<td>Walter Kahumoku III</td>
<td>Instructor &amp; Mentor</td>
<td>UHWO Sociocultural, Leadership</td>
<td>I, II, III</td>
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<tr>
<td>Steven M. Shiraki</td>
<td>Instructor &amp; Mentor</td>
<td>HIDOE Admin.; Leadership &amp; Policy</td>
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<tr>
<td>Dan White</td>
<td>Instructor &amp; Mentor</td>
<td>Island Pacific Academy Headmaster (Retired)</td>
<td>I, II, III</td>
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<tr>
<td>Val Iwashita</td>
<td>Mentor</td>
<td>Iolani School Headmaster (Retired)</td>
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<tr>
<td>Sachi Edwards</td>
<td>Instructor &amp; Mentor</td>
<td>UHCOE</td>
<td>III</td>
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<tr>
<td>Maya Soetoro-Ng</td>
<td>Mentor</td>
<td>UHM Specialist; Peace Education</td>
<td>I</td>
</tr>
<tr>
<td>Catherine Payne</td>
<td>Mentor</td>
<td>Retired HIDOE Administrator</td>
<td>I</td>
</tr>
<tr>
<td>Louise Wolcott</td>
<td>Mentor</td>
<td>Retired HIDOE Administrator</td>
<td>I</td>
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<tr>
<td>Makalapua Alencastre</td>
<td>Mentor</td>
<td>UH Hilo Assoc. Prof.; Indigenous Ed.</td>
<td>II, III</td>
</tr>
<tr>
<td>Mary Hattori</td>
<td>Mentor</td>
<td>UHM East West Center; Ed. Tech.</td>
<td>II, III</td>
</tr>
<tr>
<td>Sylvia Hussey</td>
<td>Mentor</td>
<td>COO, Office of Hawaiian Affairs</td>
<td>II, III</td>
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<tr>
<td>Veselina Lambrev</td>
<td>Mentor</td>
<td>UHM Educational Foundations</td>
<td>II, III</td>
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<tr>
<td>Lynn Mochizuki</td>
<td>Mentor</td>
<td>HIDOE Academic Officer</td>
<td>II</td>
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<tr>
<td>Alice Kawakami</td>
<td>Mentor</td>
<td>UHM Emeritus COE</td>
<td>II, III</td>
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<tr>
<td>Paris Priore Kim</td>
<td>Mentor</td>
<td>Punahou Head of Elementary Division</td>
<td>II</td>
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<tr>
<td>Ty Tengan</td>
<td>Mentor</td>
<td>UHM Dept of Ethnic Studies</td>
<td>II</td>
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<tr>
<td>Lloyd Hisaka</td>
<td>Mentor</td>
<td>Emeritus Dept of Kinesiology</td>
<td>II</td>
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<tr>
<td>Amber Makaiu</td>
<td>Mentor</td>
<td>UHM, COE – Secondary Education</td>
<td>II</td>
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<tr>
<td>William Pila Wilson</td>
<td>Mentor</td>
<td>UH Hilo – Hawaiian Studies</td>
<td>II</td>
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<tr>
<td>Kathryn Daub</td>
<td>Mentor</td>
<td>UH Hilo - Nursing</td>
<td>II</td>
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<tr>
<td>Randy Hirokawa</td>
<td>Mentor</td>
<td>UH Hilo - Communications</td>
<td>II</td>
</tr>
<tr>
<td>Robert Peters</td>
<td>Mentor</td>
<td>Hawai’i Association Independent Schools</td>
<td>II</td>
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<tr>
<td>Julie Walsh</td>
<td>Mentor</td>
<td>UHM – Centre for Pacific Island Studies</td>
<td>II</td>
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<tr>
<td>Warren Nishimoto</td>
<td>Mentor</td>
<td>UHM – Center for Historical Research</td>
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<tr>
<td>Hiapo Perreira</td>
<td>Mentor</td>
<td>UH Hilo – Hawaiian Language Studies</td>
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<td>Kathy Au</td>
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<td>Kalehua Krug</td>
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<tr>
<td>Ke‘ala Losch</td>
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<td>KCC</td>
<td>III</td>
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<tr>
<td>Jan Javinar</td>
<td>Mentor</td>
<td>UH West O‘ahu</td>
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<tr>
<td>Ed Noh</td>
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<tr>
<td>Marie Alohilani Brown</td>
<td>Mentor</td>
<td>UH Hawaiian Studies</td>
<td>III</td>
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<tr>
<td>Paul Le Mahieu</td>
<td>Mentor</td>
<td>Carnegie Project on Educational Doctorates</td>
<td>III</td>
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<tr>
<td>Aaron Sickle</td>
<td>Mentor</td>
<td>UHCOE</td>
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<tr>
<td>John Wood</td>
<td>Mentor</td>
<td>University of Virginia</td>
<td>III</td>
</tr>
<tr>
<td>Stephanie Kamai</td>
<td>Mentor</td>
<td>UH West O‘ahu</td>
<td>III</td>
</tr>
</tbody>
</table>

The program has been funded through a combination of reallocated general and special funds, and funds accumulated through tuition and grants. We have made no request for university funds. Existing College resources have been reallocated and the initial program planning was supported by external funds from the Hawai‘i Association of Independent Schools (HAIS) and Kamehameha.
Schools (KS). In the last Mānoa prioritization plan, the EdD was identified by the COE as a program marked for investment. Existing faculty resources supported by tuition revenue received via Outreach College have been used.

(4) Is the Program Efficient?

Typically, EdD programs of professional practice require around sixty credit hours of study, though some require more. Rutgers for example, requires a total of seventy-two hours. At Penn State, seventy-five credit hours are required. Among the more innovative programs such as those at the University of Southern California and Vanderbilt University, students work in cohort programs that require sixty credit hours of course and field work and take around three years to complete. In the Washington State University program, a total of seventy-two semester hours is required for completion, of which at least twenty semester hours is devoted to an action research project. Our program requires a total of sixty-four credit hours of study. Annually, this has amounted to a mean average of 617 student semester hours per school year. Year-to-year breakdowns of SSH are shown below.

**Headcount Enrollment (Fall) and Annual SSH, by Cohort**

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<tr>
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<tbody>
<tr>
<td>Actual EdD</td>
<td>30</td>
<td>28</td>
<td>28</td>
<td>26</td>
<td>25</td>
<td>25</td>
<td>29</td>
<td>29</td>
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<tr>
<td>Undergraduate</td>
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<td>991</td>
<td>1196</td>
<td>1200</td>
<td>1124</td>
<td>1090</td>
<td>1082</td>
<td>1096</td>
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<tr>
<td>Graduate</td>
<td>944</td>
<td>870</td>
<td>751</td>
<td>727</td>
<td>786</td>
<td>777</td>
<td>746</td>
<td>787</td>
<td>Not available</td>
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**Student Semester Hours (SSH)**

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<tbody>
<tr>
<td>EdD Cohorts</td>
<td>705</td>
<td>588</td>
<td>770</td>
<td>554</td>
<td>535</td>
<td>550</td>
<td>689</td>
<td>689</td>
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**Degrees Conferred**

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<tr>
<td>EdD (cohorts)</td>
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<td></td>
<td></td>
<td>28</td>
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<td>Undergraduate</td>
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<td>260</td>
<td>243</td>
<td>274</td>
<td>220</td>
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<tr>
<td>Graduate</td>
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<td>233</td>
<td>245</td>
<td>245</td>
<td>234</td>
<td>200</td>
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Cohort I = red; Cohort II = blue; Cohort III = green

The program is currently funded by tuition revenue. Under our funding model, administrative services assess a service fee of 27% of tuition. Program expenditures, including instructor salary, fringe benefits, supplies, stipends, etc., are paid from the remaining tuition revenue. This funding model nets a small annual surplus that allows the program to provide valuable program-related learning experiences for our students and faculty, including our local program conferences, and limited faculty travel support and conversion of key components of the program to a hybrid, e-learning framework. Since Cohort II, the program continues travel support to neighbor island students due to increase expenses associated with taking all coursework in Honolulu. This current
fiscal model does not include: a) a dedicated director (currently, the director assumes program management/leadership as an additional responsibility); b) dedicated faculty (currently, all faculty come from other disciplines in the College of Education); c) dedicated staff (currently, only the graduate student position is dedicated to the program).

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<tr>
<td>Faculty FTE</td>
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<td>2.00</td>
<td>2.00</td>
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<td>Faculty Salaries (overload)</td>
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<td>$98,851</td>
<td>$103,237</td>
<td>$88,456</td>
<td>$78,851</td>
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<td>Lecturers ($)</td>
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<td>Graduate TAs ($)</td>
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<td>$21,989</td>
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<tr>
<td>Other (Advisors, Lab Techs, etc)</td>
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<td>Travel</td>
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<td>Outreach College</td>
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<td>$116,969</td>
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</table>

(5) Evidence of Program Quality

External Recognition

Carnegie Project on the Education Doctorate (CPED) Program of the Year Award. The Program of the Year (POY) award is bestowed annually to one or more institutions whose CPED-influenced programs show themselves to be distinctive, innovative, and useful to other CPED members. The program must offer evidence of a proofing site that lifts up and features its approaches and components that might stimulate change and innovation among other CPED-influenced programs.

The University of Hawai‘i’s EdD program has demonstrated that it: a) adopted a mission, outcomes, curriculum, and practices that respond to its institutional context; b) integrated the CPED principles and design concepts through all aspects of its program including, but not limited to, admissions, curriculum, signature pedagogies, assessments, and DiPs (Dissertation in Practice); c) promoted innovative practices that caused CPED members to grapple with something new or understand something differently; d) demonstrated evidence of quality, continuous improvement, and meaningful impact on students’ practice and their communities; and, e) demonstrated engagement and leadership within the CPED consortium. We are proud to have received such a
prestigious award that recognizes the past 11 years of work to establish, implement, and continuously improve what we provide to our students.

**CPED Dissertation in Practice Award.** The achievement of having two of our students, Dr. Makalapua Alencastre (Cohort I, 2015) and Dr. Erin Thompson (Cohort II, 2018), win the Dissertation in Practice Award from our international consortium of over 120 institutions, confirms the program quality—our curriculum, our program processes, and the efforts of our faculty and mentors. Dr. Alencastre’s dissertation, *E Ho 'oulu 'Ia Nā Kumu Mauli Ola Hawai'i: Preparing Hawaiian Cultural Identity Teachers* investigated the program effectiveness and impact of UH Hilo’s Kahuawaiola Indigenous Teacher Education Program. Dr. Thompson’s dissertation, *From Mo 'olelo to Mana ‘o: Transforming Postsecondary Support Systems for Native Hawaiian Education Students (An Action Research Narrative Inquiry)*, examined the lives of Kanaka Hawai'i who were on their journey toward completing their degree in education. Both were selected for their high-quality research and potential to impact practice in education. Since its inception in 2012, of the 15 awards given, our program has two. This is remarkable since we only submit one every cohort—every third year—and both cohorts have produced award winning dissertations.

**EdD Day in Hawai'i.** The Governor and Lt. Governor recognized November 11, 2014 as Doctor of Education (EdD) Day. The proclamation honored our program and its graduates, providing valuable external recognition from our state's executive leaders for the particular contributions of our EdD program. A copy of the proclamation and a photo from EdD Day at the Capitol are available upon request.

**College of Education ranks among the best colleges of education in the country.** The UHM College of Education ranks 66th out of 255 ranked institutions, according the *U.S. News & World Report* Best Graduate Schools, 2020 edition.

A listing of selected publications and presentations of EdD graduates and students (Appendix F) is available upon request.

### (6) Are Program Outcomes Compatible with the Objectives?

**Student Learning Outcomes (SLOs) Reflected in Career Advancement**

Program objectives are based on our four program principles and aligned with national standards for school leaders. The transformative effects of the program are reflected in the career advancement of our students and graduates. These outcomes, re-listed below, are followed by examples of the program’s transformative effects on the advancement our graduates’ careers as leaders.

**Objectives: student learning outcomes (SLOs)**

- SLO 1: Leaders in professional educational practice work collaboratively to solve problems and implement plans of action.
• SLO 2: Leaders in professional educational practice are able to apply research skills to bring about improvements in practice.

• SLO 3: Leaders in professional educational practice can reflect critically and ethically on matters of educational importance.

• SLO 4: Leaders in professional educational practice are able to take a broad interdisciplinary perspective on a wide variety of educational issues.

Transformative effects. On the EdD Completion Survey for Cohort I, eleven out of twenty-one (52%) survey respondents indicated that they changed career positions since beginning their EdD Program. Seven did so during the course of the program and four did so shortly after graduation. Consider the following comments from their program completion survey:

“Comment on how your career goals have changed since starting the EdD program.”

1 I felt empowered to venture into administration and leadership.
2 I was a Principal and I have since taken a position as a head of school.
3 After graduation, employers at other institutions have expressed interest in hiring me. Opportunities to deliver workshops, presentations and speeches have increased in number and scope.
4 I am moving to Oahu from a neighbor island and I am becoming the administrator of a school effective March 1, 2015. I already was an administrator so am changing schools now. I am also interested in the university level of education as a result of the program.
5 While my career goals have not changed, they have definitely been refined.
6 I have yet to settle on what my next pursuit may be, that said I remain open to possibilities that I may not be aware exist. Having gained research experience and a much broader circle of professional colleagues, I look forward to opportunities in which we may continue to network and utilize our collective expertise to serve the educational community. I entered the EdD program with the desire to challenge myself intellectually and grow my professional circle of friends. I feel blessed to have accomplished both. Mahalo to xxxx, all the faculty members and mentors who were instrumental in our journey as cohort I.
7 I believe I may have other options beyond my present position.
8 I began to consider a leadership role that would have far reaching impact to on students beyond my then scope of work.
9 I am more confident and interested in pursuing a school head position at some point in the future. I wasn't sure if that's what I wanted, or was ready for, prior to the program.
10 After this program I have realized that my potential as a school leader is far greater than I originally believed. With that, I believe that I've opened myself up to more options.
11 As the result of the EdD program, I realized where I needed to position myself in the Department of Education.
12 I have gained more confidence in my ability as a leader. This confidence has opened my eyes to career opportunities that I never considered before enrolling in the Ed.D program. I am considering positions in higher ed and the government.
13 I have developed the skills and confidence to prepare to take on an administrative
position in the next couple of years.

14 I feel that I have more options open to me. I believe that I am still most effective in the classroom and it is where I want to be, however, I can also be a part of other programs and initiatives, and maybe one day it will lead me to teaching at a University setting.

15 Work on our keystone project helped with my new network of professionals, and then my work now on authentic dissertations helps to steer me toward a new position.

Also, the following list of highlighted individuals is meant to show the many and various ways that those involved with the EdD Program have transformed in their professional lives:

- Graduate, Cohort I: Associate Professor of Indigenous Education at the University of Hawai‘i, Hilo, continues to work with the EdD Program as a mentor; her dissertation was named as the 2015 Carnegie Project on the Education Doctorate (CPED) Dissertation in Practice of the Year Award winner.

- Graduate, Cohort I: Haleakala Waldorf School Chair of School named as Administrative Director of Honolulu Waldorf School.

- Graduate, Cohort I: Associate Professor of Information Technology, Kapiolani Community College, became Outreach Director, Center for Pacific Island Studies, University of Hawai‘i at Mānoa; continues to work with the EdD Program as a mentor and instructor.

- Graduate, Cohort I: After graduation became Executive Director of the Native Hawaiian Education Council; continues to work with the EdD Program as a mentor specializing in consultancy projects; elected as Treasurer for the National Indian Education Association; nominated to Charter School Commission.

- Graduate, Cohort I: Evaluator/Instructional Specialist at Kamehameha Schools Hawai‘i became an Assistant Professor of Education at University of Hawai‘i – West Oahu.

- Graduate, Cohort I: former Student Services Coordinator at Pearl Ridge Elementary School became an adjunct faculty member at the University of San Francisco, another CPED member institution.

- Graduate, Cohort I: Complex Academic Officer for the Windward District Office, HIDOE, begins serving as a mentor for our EdD Program’s Cohort II.

- Graduate, Cohort I: Principal of Pearl Ridge Elementary School appointed to Governor David Ige’s Every Student Succeeds Act (ESSA) Team.

- Graduate, Cohort I: Punahou School Dean became the new Junior School Principal at Punahou.

- Graduate, Cohort I: Punahou Junior School Principal became the Head of School of the prestigious San Francisco Day School in California.
• Current Student, Cohort II: Hanalani Schools Upper School Principal named National Association of Secondary Principals (NASSP) Hawai‘i Principal of the Year; NASSP Digital Principal Award winner.

This list is by no means exhaustive. It is meant to simply provide a broad and diverse sampling of the transformative effects reflective of the objectives involved in producing our program outcomes. The quality of our program is evident in the career accomplishments and emerging scholarship of our graduates and students.

(7) Are Program Objectives Still Appropriate Functions of the College and University?

Relationship to Campus Mission and Strategic Plan

The EdD serves the mission and strategic plan of the university by
• improving educational effectiveness across the P-16 spectrum,
• increasing access by Hawai‘i residents to public higher education, particularly advanced study,
• strengthening partnerships with public and private educational institutions,
• partnering with the Department of Education to improve the overall effectiveness of public education in Hawai‘i, and
• employing the most up-to-date information and communication technology to enhance instructional activities on campus and globally.

One of the potential benefits of starting an EdD program in the College of Education was that it strengthened our larger doctoral program by providing an advanced degree option for many educational practitioners who do not intend to pursue careers as educational researchers. As shown in the Emsi Q2 2018 Data Set, the regional trend for Educational Leadership and Administration completion rates has decreased by nearly 20% since 2003, while the national change has almost doubled. The last three admissions cycles showed 3 to 4 times the number of applications to spots available, indicating a strong interest in a doctoral degree in Educational Leadership in Hawai‘i.

Not only has the new EdD kept the College in line with national reforms in higher education, it fills an important need in the state by preparing a new generation of educational leaders. The program allows expanded access to better serve educators on neighbor islands and others who have not been able, by reasons either of location or work demands, to pursue an advanced degree. Access has been enhanced by using non-traditional scheduling, innovative teaching strategies, and emerging communication technologies that make use of synchronous and asynchronous methods of instruction and communication an important tool for our neighbor island students. A new EdD website has been designed and is currently being constructed and in partial use with the Cohort III.
https://programs.coe.hawaii.edu/edd/program/
The following shows the demographics of our three EdD cohorts:

<table>
<thead>
<tr>
<th>Count of Id Number</th>
<th>Sem Yr First</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Ethnicity Desc</td>
<td>Cohort I</td>
</tr>
<tr>
<td>African American or Black</td>
<td>1</td>
</tr>
<tr>
<td>Caucasian or White</td>
<td>4</td>
</tr>
<tr>
<td>Chinese</td>
<td>1</td>
</tr>
<tr>
<td>Filipino</td>
<td>2</td>
</tr>
<tr>
<td>Guamanian or Chamorro</td>
<td>1</td>
</tr>
<tr>
<td>Japanese</td>
<td>4</td>
</tr>
<tr>
<td>Korean</td>
<td>1</td>
</tr>
<tr>
<td>Mixed Asian</td>
<td>3</td>
</tr>
<tr>
<td>Mixed Race (2 or more)</td>
<td>4</td>
</tr>
<tr>
<td>Native Hawaiian or Part-Hawna</td>
<td>9</td>
</tr>
<tr>
<td>No Data</td>
<td>1</td>
</tr>
<tr>
<td>Grand Total</td>
<td>28</td>
</tr>
</tbody>
</table>

Indigenous-serving. Since its inception, our new EdD Program in Professional Educational Practice has been successful in attracting and retaining Native Hawaiians pursuing our doctoral degree. Through our admissions process, we have been able to successfully attract a relatively large number of highly qualified applicants of Native Hawaiian ancestry.

<table>
<thead>
<tr>
<th>UHM EdD Cohort</th>
<th>Number of Native Hawaiians (%)</th>
<th>Number of Pacific Islander Indigenous Students, not Native Hawaiian (%)</th>
<th>Total Number of Indigenous Students (%)</th>
<th>Total Number of Students in Cohort</th>
<th>Graduation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort I (2011-2014)</td>
<td>13 (46%)</td>
<td>1 (4%)</td>
<td>14 (50%)</td>
<td>28</td>
<td>93% (26/28)</td>
</tr>
<tr>
<td>Cohort II (2014-2017)</td>
<td>13 (50%)</td>
<td>1 (4%)</td>
<td>14 (54%)</td>
<td>25</td>
<td>100% (25/25)</td>
</tr>
<tr>
<td>Cohort III (2017-2020)</td>
<td>16 (55%)</td>
<td>1 (3%)</td>
<td>17 (57%)</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

It is also important to note that most of these students engage in group consultancy projects and dissertation research that contribute directly to their Indigenous communities, both locally and globally. Doctor of Education (EdD) projects that focus on Native Hawaiian and Indigenous
professional educational practice complement the graduate programs at Hawai‘i‘niu‘kea (UH Mānoa) and Ka Haka ‘Ula o Ke‘elikolani (UH Hilo). In the spirit of our University’s goal of being a model Indigenous-serving university, our Doctor of Education program positions us well to continue meeting the needs of a rising global Indigenous consciousness.

**Program Evaluation as Collaborative Research.** A group of program participants, including graduates, students, faculty, and mentors, from across both EdD cohorts, recently conducted a study of the impact of our program’s Group Consultancy Projects. They found the following: (1) the significance of course design in facilitating the preparation of leaders at the doctoral level who emphasize equity, ethics, and social justice in their practice, and (2) the interplay of theory and research (as operationalized in UH Mānoa Group Consultancy Projects) and its pivotal role in providing doctoral students in the EdD Program with the empirical knowledge to bring about solutions of complex problems of practice within a partnership model grounded in equity and ethics. The team presented their research to a receptive audience eager to hear the results, at the CPED Annual Convening in June 2016, and reported further on the impact of consultancy projects at the 2017 Annual CPED Convening.

**Need Factors**

**(a) Direct Relevance to Needs of Hawai‘i**

Four arguments justify the need for a practitioner doctoral degree program in educational leadership at UHM. First, a strong demand exists within the state for such a program. Public and private K-12 schools, community colleges, small private colleges, and the military continue to express an interest in the EdD. Second, reform of doctoral education in the field of education at the UHM is necessary to stay current with national reforms at benchmark institutions. Third, the College of Education needs to adopt more practical approaches to the delivery of leadership education in order to expand access to educators across the state. Fourth, the College of Education has a responsibility to adopt programs that exemplify and promote best practices in improving education in Hawai‘i.

A growing demand exists for a professional practice doctorate in both the public and independent school sectors. This program developed in response to needs expressed by the Hawai‘i Department of Education, the Hawai‘i Association of Independent Schools (HAIS), and Kamehameha Schools (KS). The University of Hawai‘i community colleges and military also expressed interest in the program.

It is widely recognized that there is a looming shortage of educational leaders in Hawai‘i in both public and independent schools. Many people in leadership positions are close to retirement and a new generation is seeking the knowledge and skills necessary to assume leadership roles in their respective institutions. It is anticipated that due to upcoming retirements there is a critical need to mobilize significant numbers of emerging leaders through advanced degree work and to provide support for educators’ career advancement to higher levels of responsibility. Large numbers of Hawai‘i State Department of Education principals are eligible for retirement, while many of the heads of schools in Hawai‘i’s independent schools have recently retired. Community colleges face
similar challenges. Urgent steps need to be taken to anticipate the loss of experienced leaders and to take advantage of their expertise while circumstances permit.

In addition, many local education professionals have no interest in pursuing a doctoral degree that will prepare them for a career as educational researchers or university faculty—the main function of the PhD. Instead, they are eager to seek ways to advance their scholarly understanding of educational issues in order to further their professional knowledge, gain access to new professional opportunities in K-12 settings, and improve understanding of educational practices that they can apply in their current positions. The demands placed on educational leaders in today’s schools require considerable practical expertise in a number of complex areas of educational importance. Educators work in an increasingly complex environment and are expected to be familiar with a wide range of topics relevant to the day-to-day business of education—improving student achievement, managing personnel, implementing and maintaining technological reforms, collecting data for decision making, dealing with diverse student populations, maintaining public relations, developing 21st-century skills among staff and faculty, and dealing with the intricacies of school law, finance, methods of evaluation, policy, and so on. Our EdD Program is a major contributor to helping to meet the professional, economic, social, occupational, and general educational needs of Hawai‘i. The goal was to recruit a cohort of 25 candidates for each three-year program sequence. Cohorts I, II and III admissions exceeded that number for a total of 83 candidates admitted into the EdD program to date.

**Group consultancy projects.** A way of demonstrating our program’s contribution to meeting Hawai‘i’s needs is to show our contributions via the program’s Consultancy Projects. Our students, with the guidance of faculty advisors and mentors, provide valuable consultancy services to our educational communities. A listing of Group Consultancy Projects by Cohort (Appendix G) is available upon request.

**Institutional Affiliations and Dissertations in Practice.** Our program immediately contributes to professional educational practice in Hawai‘i by addressing educational problems directly related to the doctoral students’ problems of practice. Institutional Affiliations and Dissertation in Practice Titles for cohort I is available upon request.

**Contributions to various educational systems.** Our doctorate in professional educational practice contributes to the needs of our various school systems in Hawai‘i. The career transformations mentioned previously coincide with the increasing impact that our graduates have been making in fulfilling the educational needs of Hawai‘i. For an example in public education, consider the recent appointment of one of our graduates to Governor David Ige’s new Every Student Succeeds Act (ESSA) Team. In the areas of Native Hawaiian education and charter schools, consider the recent nomination of one of our graduates to the Charter School Commission. For an example of our impact on private school education, consider how our graduates have been serving as the leaders of our state’s most prestigious independent schools. These are clear examples that reflect our program’s aims to prepare educators for leadership and to become agents of change in educational settings.
(b) National Needs Factor

Many universities in the US have already taken steps to address similar problems in education and in other professional fields. The trend towards degrees of professional practice is well developed in several fields of endeavor in addition to education (for example, in nursing, engineering, clinical psychology, and business administration). Not only are these reforms taking place in the US, but internationally. The development of a professional practice doctorate as a professional alternative to the current research PhD was recommended by the Carnegie Project on the Education Doctorate (CPED) (Shulman et al, 2006). Currently, the CPED, which is researching ways to differentiate educational doctoral programs to clarify this mission, is working with twenty-four participating research universities in the US to implement this reform. (See http://cpedinitiative.org/).

(c) International Needs Factor

A demand exists for the professional practice doctorate across the Pacific. Currently, the program is studying the feasibility of offering an EdD Indigenous program through a hybrid delivery system to educators throughout the Pacific, and in particular in American Samoa and the Federated States of Micronesia (FSM).

Our program worked to build an international exchange relationship, initiated by Cohort I, with Oxford Brookes University’s (UK) EdD program. The relationship has already resulted in the cross-pollination of ideas from the reciprocal visits between our institutions. Cohorts I and II have also nurtured a strong relationship with indigenous Maori educators in Aotearoa (New Zealand).

(d) Basic Educational Needs Factor for Hawai‘i’s Population

A growing demand exists for a professional practice doctorate across the state. Discussions held with various Hawai‘i-based agencies such as the Hawai‘i Association of Independent Schools (HAIS), the Hawai‘i Department of Education (HIDOE), Kamehameha Schools (KS), and UH community colleges suggest that there is a large pool of potential candidates on Oahu and on other islands. Many educators in the public and independent schools and educators on neighbor islands do not have easy access to advanced doctoral study due to their location and/or their professional schedules. The HIDOE, the HAIS, and Kamehameha Schools continue to indicate considerable interest in our program and their representatives have taken an active part in the planning and execution of our EdD Program. The EdD responds well to state and regional educational needs by allowing expanded access for teachers, administrators, and other educators who have few alternatives that match their career goals. The full enrollment of the first three cohorts confirms the expressed considerable interest from the community in the EdD program.

(e) Relevance of Field of Study as a Necessary Supporting Discipline

The development of our EdD program in Professional Educational Practice has had a beneficial impact on the current PhD by creating two clear options for advanced doctoral study. This better serves students in the PhD program by allowing them to focus more intently on a program of study in educational research. Previously, the PhD program struggled to meet the needs of both groups of
students: those who intended to remain in their chosen field of practice and those who sought careers in one of the disciplinary fields of educational research. A cohort-based program that makes use of summer courses blended with online coursework and field practice has attracted a larger number of applicants and offers an attractive option for potential applicants on neighbor islands, thus widening the pool of prospective EdD candidates and reducing the number of candidates served in the PhD.

Finally, the explicit and essential difference in focus between PhD and EdD doctoral degrees is best captured in this quote from Gordon Kirk (as cited in Wergin, 2011, p. 119):

“The PhD is to understand the world. The EdD is to change the world.” [emphasis added]

Our students are oriented towards leading systemic change. We continue to build capacity for systemic change by graduating educational leaders, at the doctoral level, who make a direct impact on our education systems (i.e., UH System, HIDOE, Public Charter Schools, Independent Schools). Our program is living up to our aims to prepare educators for leadership and to become agents of change in educational settings. We strongly recommend that the Board of Regents grant established status to the UHM EdD in Professional Educational Practice.