

Membership Application

Application Process:

To be considered for membership, the institution will need to submit an application that will consist of:

- A written request of participation by the senior leadership (e.g., CEO, COO) of the given institution.
- Supporting documentation, including a description of the organizational structure or working relationships of the institution's integrative medicine/health program, its ongoing efforts in at least two of the following: research, education, and clinical care, and the how the institution addresses diversity within its faculty, students, and trainees. Supporting documentation should also address the institution's commitment to this field and how the membership dues will be paid and sustained.

Choose one: Health System Academic Health Centerⁱ X

Institution:

Mailing Address:

City, State:

Website:

Person preparing application:

Name:

Title:

Phone:

Email:

Name of CEO/Dean supporting the application:

Institutional Representative (may be the person completing the application or someone else:

Name:

Email:

Alternate Institutional Representative (may be the person completing the application or someone else:

Name:

Email:

Person who handles dissemination of news about your institution's activities and integrative medicine:

Name:

Email:

Title (i.e., Dir. Of Comms, Admin Asst):

October 15, 2023

Dear Academic Consortium for Integrative Medicine and Health:

This letter is in reference to the application for City of Hope National Medical Center to join the Academic Consortium for Integrative Medicine and Health. City of Hope is in full support of Dr. Richard Lee's application, and we are fully committed to its success. As noted in our application, we have recently established the Cherng Family Center for Integrative Oncology based on a \$100M gift to support this important area of medicine. Under the leadership of Dr. Lee, we are actively building an integrative medicine program at City of Hope. We are excited to be part of this growing field and believe that City of Hope has much to offer the Academic Consortium.

Please feel free to contact me with any questions regarding our application.

Sincerely,



Edward S. Kim, MD, MBA, FACP, FASCO
Physician-in-Chief & Senior Vice President, City of Hope Orange County
Construction Industries Alliance City of Hope Orange County Physician-in-Chief Chair
Vice Physician-in-Chief, City of Hope National Medical Center
Professor, Department of Medical Oncology & Therapeutics Research



City of Hope National Medical Center
Application for Membership in the
Academic Consortium for Integrative Medicine and Health

October 2023

Name: Richard T. Lee

Title: Clinical Professor

Cherng Family Director's Chair for the Center for Integrative Oncology
Medical Director, Supportive and Integrative Oncology Program, Orange County

Steering Committee Member – Richard T. Lee

Alternate Steering Committee Member – Judy Rose

Dissemination – Daisy Gonzalez



The mission of City of Hope is to transform the future of cancer care. Each day, we work to turn science into a practical benefit, hope into reality. We accomplish that by unifying the branches of biomedical research, treatment and academia. Having scientists, treatment staff and manufacturing facilities in convenient proximity, our treatment advances can travel from laboratory to patient with life-saving speed..

Part A: Executive Summary

1. Summarize the institution's activities in integrative medicine and health (IMH) at the institution.

Background: City of Hope (COH) is a private, not-for-profit academic institution located in Duarte, California consisting of the City of Hope Comprehensive Cancer Center (COHCCC), National Medical Center, and Beckman Research Institute (BRI). The COH main campus resides on 110 acres of land adjacent to the boundaries of Duarte and Irwindale, with a clinical network of 36 locations (Los Angeles, Orange, Riverside, and San Bernardino counties) throughout Southern California and a state-of the-art clinical and research facility in Orange County, California

COH recently expanded to a national footprint, with the acquisition of Cancer Center Treatment Centers of America (CTCA). CTCA sites are now known as City of Hope Phoenix, City of Hope Atlanta, and City of Hope Chicago, and will support care of greater numbers of COH patients and offer a robust network of sites for recruiting patients to clinical trials.

COH is best known for its world-class cancer treatments and has been a National Cancer Institute (NCI) designated Comprehensive Cancer Center since 1998. In addition, COH is focused on broad spectrum of laboratory-based and clinical research in cancer, diabetes, and other life-threatening diseases. Research performed at COH has fundamentally expanded the world's understanding of how biology affects diseases such as cancer, HIV/AIDS, and diabetes. In fact, COH played a key role in the development of synthetic human insulin in 1978 that has transformed the care of patients with diabetes.

Translational and discovery research are conducted within the Beckman Research Institute (BRI) of COH. BRI was organized in 1984, becoming the first of five institutes endowed by the Arnold Beckman Foundation. BRI is the primary research arm of COH. Principal investigators within BRI conduct research ranging from investigation of DNA damage and repair to developmental and stem cell biology; immunology; molecular imaging; computational medicine; and the development of experimental therapeutics and gene therapy for use in treating cancer, diabetes, blood disorders, and other diseases.

In 1981, the COH Cancer Center became an NCI clinical cancer center, achieving comprehensive status in 1998; COH is one of only 53 NCI-designated comprehensive cancer centers. The mission of the COH Comprehensive Cancer Center (COHCCC) is to reduce the burden of cancer for the patients of today through skilled, integrated and compassionate care and to eliminate the threat of cancer for the patients of tomorrow through research and education. The COHCCC conducts its activities across the entire Duarte Campus, facilitating interactions among clinical, translational, and basic science researchers.

All COHCCC members who conduct laboratory research hold appointments as BRI faculty. These collaborative interactions between the COHCCC and BRI provide tremendous opportunities for translation of laboratory discoveries directly into new therapies for patients. As a result, COH has many ongoing clinical trials that build on the research discoveries of BRI investigators; at any given time COH has more than 30 active investigational new drug applications and 350 clinical trials ongoing. COH is



recognized worldwide for its compassionate patient care, innovative science and translational research, which rapidly turns laboratory breakthroughs into promising new therapies. As an independent medical and research institution, COH can break through the barriers that traditionally stand between scientists and physicians, accelerating the application of laboratory findings to more effective treatments.

COH is distinguished by tremendous breadth and depth of in-house experience in conducting clinical trials, especially first-in-human trials, with more than 200 physician providers and 225 basic scientists, dedicated to translational and clinical research. COH is the largest stem cell therapy center in California and the second largest in the nation, performing 775 hematopoietic stem cell transplants (HCTs) in 2020. The COH HCT Program offers transplantation with autologous, allogeneic, umbilical cord blood, haploidentical, engineered and manufactured stem cell products. This program is governed by a comprehensive array of SOPs that cover the full scope of program activity, including training, process and document control. Quality control systems are managed with an integrated quality program designed to meet accreditation standards of expert organizations and the FDA. COH's 10,000th bone marrow transplant procedure was formally recognized in the U.S. Congress's active session in 2011, and the Bone Marrow Transplant program celebrated its 47th year in 2023.

In addition to state-of-the-art shared resources for basic research, COH has a diverse infrastructure available to facilitate translational and clinical research which are outlined below. The combined strengths of our program in basic, translational and clinical research, as well as community outreach, provide these PIs with a rich and supportive environment to conduct fundamental research towards realizing the long-term goal of "bench-to-bedside" and making an impact in the clinic and the community.

The new Cherng Family Center for Integrative Oncology at City of Hope will bring together the best of Eastern and Western medicine to improve outcomes and quality of life for cancer patients and survivors. This \$100M is the single largest gift to cancer care in our history – and one of the two largest gifts ever given to City of Hope. The Cherng Family Center for Integrative Oncology will be able to offer several integrative treatments and resources on the Duarte and Orange County campuses later this year. The gift will immediately accelerate research, therapeutic development and clinical trials so researchers can develop evidence-based practices for cancer patients nationwide.

- City of Hope will accelerate research, therapy development and clinical trials so scientists and physicians can develop evidence-based practices for cancer patients nationwide.
- Education and training programs will address the shortage of knowledgeable clinicians in this field. Within the next year, City of Hope plans to create one of the first integrative oncology fellowships created and led by oncologists.
- Programs will be piloted at City of Hope campuses in Los Angeles and Orange County, California. Experts will build scalable infrastructure and develop platforms to track clinical data to further scientific discoveries and improve cancer patient outcomes. The benefits of integrative oncology will then be extended to patients throughout City of Hope's national cancer care and research system.

The City of Hope National Medical Center is excited at the prospect of being a member of the Academic Consortium for Integrative Medicine & Health and are committed to the organization's mission of advancing integrative medicine.



Part B: Faculty & Staff

Below is a list of the faculty and staff members at City of Hope National Medical Center involved with Integrative Medicine clinical care, education and research efforts.

Richard T. Lee, MD, FASCO
Clinical Professor
Director, Cherng Family Center for Integrative Oncology
City of Hope National Medical Center

Judy Rose, MSW, LCSW
Director of Supportive Care and Integrative Medicine
City of Hope National Medical Center

David Horne, PhD
Vice Provost and Deputy Director, Beckman Research
Dr. & Mrs. Allen Y. Chao Chair in Development Cancer Therapeutics
City of Hope National Medical Center

Shiuan Chen, PhD
Professor and Chair
Cancer Biology and Molecular Medicine
City of Hope National Medical Center

Ajay Goel, PhD
Professor and Chair
Department of Molecular Diagnostics and Experimental Therapeutics
City of Hope National Medical Center

Anne Reb, PhD, N.P
Assistant Professor
Department of Population Sciences
City of Hope National Medical Center

George Semeniuk III, MD
Clinical Professor
Department of Medical Oncology & Therapeutics Research
City of Hope National Medical Center

Jasmine Zain MD
Clinical Professor
Director, T Cell Lymphoma Program
City of Hope National Medical Center



Bahareh Bahadini MD
Assistant Clinical Professor
Department of Medical Oncology & Therapeutics Research
City of Hope National Medical Center

Sarah Ali, MD
Associate Clinical Professor
Department of Medical Oncology & Therapeutics Research
City of Hope National Medical Center

Edyssa Uy, NP
Integrative Medicine
Department of Supportive Care Medicine
City of Hope National Medical Center

Frank Munoz, PhD, BCC
Clinical Spiritual Care and Mind Body Medicine
City of Hope National Medical Center

Amy Truong, DTCM, MPH, L Ac
Acupuncturist
City of Hope National Medical Center

Christy Roames LMT, BCTMB
Oncology Massage Therapist
City of Hope National Medical Center

3. Description of current activities that focus on integrative medicine/health Clinical Care and Research:

A. CLINICAL CARE AND CLINICAL RESEARCH FACILITIES

Clinical facilities at the main campus in Duarte include Helford Clinical Research Hospital (HCRH), the Brawerman and Duarte Outpatient Facilities, the Michael Amini Transfusion Medicine building (MATM), and the Cellular Therapy Day Hospital, which houses outpatient care facilities for stem cell transplantation. In addition to the main campus in Duarte, the COH clinical network includes 36 locations throughout Southern California (Los Angeles, Riverside, San Bernardino, and Ventura Counties) that are integrated with the main campus and provide a diverse source of patients to support our clinical trials. Collectively, we have a substantial patient base for evaluation/enrollment to investigational trials of novel therapies because virtually all patients (inpatients and outpatients) seen at COH are considered for protocol entry.

COH has ~1,048,000 sq. ft. of patient care facilities at the main Duarte location and within outpatient clinics in the Catchment Area. An additional 1,066,000 sq. ft. of auxiliary space supports clinical and research activities.

At the present time COH operates 217 inpatient beds, with a 72-bed transplant unit, 94 positive-pressure HEPA-filtered rooms, and an 18-bed, combined adult and pediatric intensive care unit. These facilities are equipped with state-of-the-art imaging technology. All operating rooms can accommodate one of COH's four da Vinci robots, and all possess heads-up displays for surgeon review of patient imaging studies. A GE picture archiving and communication system (PACS) was deployed several years ago, and was upgraded to a Sectra PACS in July, 2018. An Epic clinical information system is used for electronic medical records. An additional 240,000 sq. ft. of auxiliary space supports both clinical and research facilities.

Helford Clinical Research Hospital

The heart of inpatient care activities is the 144-bed, 7-story, Helford Clinical Research Hospital (HCRH; 340,000 sq. ft.). Opened in 2005, HCRH has state-of-the-art facilities that incorporate the latest in medical, surgical, radiological, and communications technologies, combining modern diagnostic, radiology, and imaging tools in a digital environment.



Nurses' workstations are located close to patient rooms to offer easy access and monitoring of patients' rooms for nurses and medical personnel. To provide timely care and help maintain a peaceful atmosphere, our units are equipped with Vocera devices, which provide personnel with real-time notifications without the need for a public address system. Our pediatric and intensive care units offer a satellite pharmacy, making it easier to provide timely care when needed.

HCRH has a full time pharmacy and satellite pharmacies, and trained research pharmacists with expertise in supporting Phase I, 2 and 3 clinical trials.

Lennar Foundation Cancer Center

In 2019, COH began investment of >\$1B to expand the cancer research and clinical care footprint in Orange County. In 2022, COH opened the Lennar Foundation Cancer Center (190,000 sq. ft.), in Orange County. This patient-focused outpatient location offers highly specialized cancer care and patient access to Phase 1-3 clinical trials (including cellular therapies), precision medicine, early detection (blood testing and imaging), and prevention programs (based on genetic risk assessments, biomarker panels and environmental surveys). The Center is also equipped to offer targeted immunotherapies, robotic minimally invasive surgeries and personalized treatments, such as stereotactic body radiation therapy.

Lennar Foundation Cancer Center is located on 11 acres of the master-planned FivePoint Gateway community. In 2025, COH will open another hospital (168,000 sq. ft.) dedicated to cancer care at the same location.

Outpatient and Ambulatory Care

Outpatient services for cancer patients, along with treatment for other chronic illnesses, are provided in the adjoining **Geri and Richard Brawerman Ambulatory Care Center**. A skyway connects the Center to HCRH. COH is also currently constructing the **Duarte Outpatient Clinic**. Scheduled to open in 2024, the new outpatient clinic will comprise eight stories and over 350,000 sq. ft., becoming the largest ambulatory care building on campus and a beacon of hope for patients.



Helford Clinical Research Hospital.



Lennar Foundation Cancer Center, City of Hope.

Briskin Center Clinical Research Unit (CRU)

COH's outpatient Clinical Research Unit (CRU) is the hub for the majority of clinical research protocols conducted at COH. The CRU works in concert with the Clinical Trials Office and the Investigational Drug Service to provide patients access to novel therapies in a timely and expeditious manner with the goal of delivering best-in-class care for all research patients. To support the expansion of clinical trials and provide the best possible care for seriously ill patients participating in trials, COH remodeled the Familian Building to create an 8,600 square foot CRU at the entrance to our campus in the Briskin Center for Clinical Research. This new CRU opened in the summer 2018 and is a combination of a complete renovation of 5,500 square feet of existing space plus a 3,100 square foot new addition. This spa-like new building addition provides a bright, airy environment for our research patients to receive treatment. Inspired by site visits to globally-recognized peer-dedicated clinical research units, the new, state-of-the-art CRU includes 17 infusion spaces (combination of beds and chairs), two nurse stations, three exam/procedure rooms, an outside seating area for patients and families plus on-site EKG, pharmacy and lab services. Physicians are able to see patients in this space, and it accommodates research nurses and dedicated schedulers to assist patients in making follow-up appointments. The Briskin Center for Clinical Research allows COH to treat a large number of patients simultaneously and provide seamless, high quality, and timely care in an environment that best meets patient needs.



Briskin Center Clinical Research Unit

Clinical Trials Office (CTO)

The CTO at COH assigns, oversees, and coordinates the staffing of clinical research coordinators (CRCs) and clinical research nurses (CRNs) to the various clinical trials conducted at COH and the community practices. There are more than 70 CRCs and approximately 50 CRNs in the CTO, and each works within one of several 'disease or modality teams'. The disease and modality teams are managed operationally under the direction of a clinical research nurse director who reports to the senior director of the CTO. In addition, biospecimen coordinators work within the CTO on all study specimen collection activities. The Investigational Drug Service has a long track record of appropriately handling investigational agents, with facilities for secure storage and inventory of agents at room temperature, -20°C , and -70°C .

Sheri & Les Biller Patient and Family Resource Center

Creating a go-to support network and resource hub is the goal of the Department of Supportive Care Medicine at COH and the Sheri & Les Biller Patient and Family Resource Centers are at the heart of the Department of Supportive Care Medicine patient support network and resource hub. Conveniently located on both the Duarte and Orange County campuses, the Biller Patient and Family Resource Centers integrate all support services under one umbrella. Here patients and their families will find a warm and welcoming private space to consult with the



Patient and Family Resource Center

Center's medical staff and explore the many resources available to strengthen and empower patients and caregivers before, during, and after treatment. Resources include:

- Confidential space for educational and activity sessions, such as yoga, qi gong, mind body medicine, art and music therapy, nutrition classes and a variety of support groups
- An extensive library of educational information on diagnoses, treatment, symptom management, nutrition, coping, caregiving and mind-body topics
- Free notary services
- Fiction and nonfiction cancer related literature
- Computers for viewing educational software, accessing health-related websites, obtaining information on community resources and staying connected with family and friends
- Ipads/Kindle tablets for check-out and use while on campus
- Wireless internet access for those bringing their own laptops
- Scanner, copier and fax machines for patients and caregivers

Hope and Parsons Village

Many patients who no longer require in-hospital care still need frequent medical treatments that may last months. For patients who do not reside close to COH, we provide housing on the COH main campus in the Hope and Parsons Village. The Village gives patients a private space and easy access to the medical care they need in a comfortable, private, home-like setting. Adjacent to the Village is the Village Center which offers a wide array of amenities for patients and families residing in the Village and also serves families whose loved ones are hospitalized at the Helford Clinical Research Hospital. A five-story, 150 room hotel building in the Village was opened in 2021, tripling the number of rooms available to patients. The Village Hotel also houses a limited service café, a patient-focused health and beauty boutique, a healing garden, and small fitness and spa treatment center.



Hope and Parsons Village

Rita Cooper Finkel and J. William Finkel Women's Health Center

In 2016, a new 16,000 sq. ft. Women's Center was built on the COH main campus. This facility serves as a central hub for patients to access a full range of health care professionals, including: physician specialists (breast and gynecologic cancer surgeons and medical oncologists, plastic surgeons, geneticists, and supportive care physicians), nurses, genetic counselors, schedulers, social workers, financial counselors, supportive care staff, and other health specialists. The new facility is located in the lower level of the Geri and Richard Brawerman Center for Ambulatory Care. There is convenient access to a **Positive Image Center** adjacent to the Women's Center, which helps patients cope with a number of image-related concerns due to their diagnoses and treatments.



Integrative Medicine Clinical Care

City of Hope National Medical Center has begun several new integrative services including integrative oncology consultation, acupuncture, and mind-body medicine with plans to start oncology massage therapy, integrative nutrition, and exercise counseling by the end of 2023. Acupuncture is also available at COH Phoenix and Chicago, and oncology massage is offered at COH Chicago. We have plans to expand to the Duarte campus in 2024 and community network sites in Southern California as well.

Research

Basic Science Research

City of Hope National Medical Center has several active areas of research in the area of integrative medicine. Richard T. Lee's laboratory has been activity researcher mistletoe lectin, a protein found in mistletoe extracts and with mushroom extracts. Several laboratories are researching several natural products such as white button mushroom (Dr. Chen), berberine (Dr. Horne), and curcumin (Dr. Goel).

Clinical Research

City of Hope National Medical Center is conducting a clinical trial exploring the use of white button mushroom extract for the treatment of prostate cancer funded by an NIH R01 grant (Dr. Chen). Dr. Lee has an R21 NCI funded grant to study medical cannabis for the treatment of chemotherapy-induced peripheral neuropathy as well as an U01 NCI funded study to evaluate the risks of benefits of cannabis use during active treatment among multiple myeloma patients. Dr. Lee's research group has also completed several survey studies regarding integrative therapies at a cancer center and on the use of cannabis by patients with cancer. Protocols are under review to explore meditation for cancer survivors, aromatherapy for patients receiving a bone marrow biopsy as well as for patients receiving chemotherapy. Clinical studies have recently been growing over the past few years. Several health services survey studies exploring patients' and clinicians' perspectives about integrative services have been conducted. Future studies currently being developed include acupuncture for anxiety and optimizing massage techniques for patients receiving chemotherapy.

Selected Recent Publications in the past 10 years

Richard T. Lee, MD

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3. Garcia MK, Cohen L, Guo Y, Zhou Y, You B, Chiang J, Orlowski RZ, Weber D, Shah J, Alexanian R, Thomas S, Romaguera J, Zhang L, Badillo M, Chen Y, Wei Q, Lee RT, Delasalle K, Green V, Wang M. Electroacupuncture for Thalidomide/Bortezomib-induced Peripheral Neuropathy in Multiple Myeloma: A Feasibility Study. *J Hematol Oncol* 1(1):41, 2014. e-Pub 5/2014. PMID: 24886772.
4. Lee RT, Barbo A, Lopez G, Melhem-Bertrandt A, Lin H, Olopade OI, Curlin FA. National Survey of US Oncologists' Knowledge, Attitudes, and Practice Patterns Regarding Herb and Supplement Use by Patients With Cancer. *J Clin Oncol* 32(36):4095-101, 12/2014. e-Pub 11/2014. PMID: 25403205.
5. Garcia MK, Niemtzwow R, McQuade J, Haddad R, Lee RT, Spano M, Cohen L. Acupuncture for xerostomia in cancer patients: an update. *Medical Acupuncture* 27(3): 158-67, 6/2015. PMID: 25325937
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11. Lee RT, Hemmerich J, Kwon N, Bylow K, Stadler W, Mohile S, Curlin F, Dale W. The relationship of anxiety about prostate cancer among patients with a biochemical cancer recurrence and the utilization of complementary and alternative medicines, diet and exercise. *Family Medicine and Community Health*, 5(2): 139-148, 7/2017. doi:10.15212/FMCH.2017.0129

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26. Farrell MM, Jiang C*, Moss G*, Daly B, Weinstein E, Kemmann M, Gupta M, Lee RT. Symptom Predictors of Palliative Care (PC), Hospital Admissions (HA), Acute Care (AC), Emergency Room (ER), and Death Among Advanced Oncology Patients. *Support Care Cancer*. 2023 Feb 23;31(3):183. doi: 10.1007/s00520-023-07618-5. PMID: 36821057
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Education

City of Hope National Medical Center has ongoing fellowships in Hematology-Oncology, surgical oncology, radiation oncology, and stem cell transplant. We have plans to bring a dedicated fellowship in integrative oncology in the coming year or two. COH is also hosting the 2024 Society for Integrative Oncology conference in Orange County. By joining the Academic Consortium for Integrative Medicine and Health, we hope to expand our educational opportunities for staff.

Part D: Institution Commitment to Integrative Medicine

City of Hope National Medical Center has a strong commitment to integrative medicine as evidenced by the establishment of the Cherng Family Center for Integrative Oncology based on a \$100M gift. It also has dedicated internal funding earmarked for projects that include multiple collaborators across departments. City of Hope National Medical Center will serve as a partner institution in hosting the 2024 Society for Integrative Oncology conference in Southern California.