

UNE COM Research and Scholarly Activity Plan

The University of New England (UNE COM) has continued to improve its biomedical, clinical, and educational research capacity and increase its research productivity. This on-going effort is guided by the [UNE COM's mission](#), the *UNE COM Strategic Plan*, the report from the 2010 American Association for the Advancement of Science (AAAS) site visit hosted by the UNE [Center for the Excellence of the Neurosciences](#) (<http://www.une.edu/research/cen/events/aaas-visit-and-panel>), and the recommendations provided by Previous COCA site visits. During the 2010 scheduled seven-year reaccreditation comprehensive evaluation conducted by the COCA, the team of evaluators stated that UNE COM “*is to be commended for its investment in new research laboratories. Student success in research is also impressive (AFAR, HHMI/NIH, and Fogarty scholars).*”

I. The UNE COM Research Infrastructure

The UNE COM has established/improved its infrastructure significantly in the recent years in order to continue to support faculty/staff research and scholarly activities, to improve the research culture within the UNE COM, and to promote/facilitate student participation of research and scholarly activities.

1. Associate Dean for Research and Scholarship

Guided by the 2010 UNE COM Strategic Plan, the UNE COM created a new position, Associate Dean for Research and Scholarship to facilitate the goal of focusing and expanding collaborative research in neuroscience and pain, chronic disease (e.g., diabetes), infectious diseases, primary care, geriatrics, OMM, health policy (Center for Health Policy, Planning, and Research (CHPPR)), community health (M.P.H./Coastal Healthy Communities Coalition (CHCC)), medical education and oceans and health/land-sea interactions. An interim Associate Dean was appointed and the hiring process for this position is ongoing. The UNE COM faculty and staff have provided their input in preparing a comprehensive while realistic job description for this position. The creation of this position and the revision of the mission statement and functions of the UNE COM Committee on Research and Scholarship (see below) are vital actions the UNE COM took to address the recommendation made by the 2010 COCA visit team: “*It is recommended that UNECOM research faculty have a voice in the further development and implementation of research policies and procedures. Faculty engagement is important in creating a culture that respects the breadth and depth of research across the College.*”

2. The UNE COM Research and Scholarship Committee

The UNE COM has created the [Research and Scholarship Committee \(RSC\)](#) in October, 2008. The UNE COM RSC exists as a standing committee of the college and is comprised of six to nine members with a chair appointed by the Dean and vice-chair elected by the committee members. The committee chair will sit as a regular member of the Dean's Leadership Team until such time as an Associate Dean for Research & Scholarship has been filled. The committee reports to the COM Faculty Assembly (COMFA) and the Dean's Leadership Team (of which the Associated Dean for Research and Scholarship is a member). Starting from 2016, a designated full-time staff member has been assigned solely to RSC to coordinate all CRS related activities. The RSC holds regular monthly meetings and maintains meeting minutes year-round. The goal of the RSC is to provide a faculty voice and administer matters pertaining to the UNE COM research and scholarship. The newly revised mission of RSC is “through the collaborative efforts and creativity of the committee members, our mission is to advance and administer the research and scholarship agenda within the UNE COM to include UNE's Centers of Excellence where appropriate and develop opportunities for research and scholarship education and practice.” The UNE COM RSC has four main functions: (1) Assist in formulating recommendations and policies including processes or procedures designed to enhance research and scholarship within UNE COM; (2) Develop as appropriate degree/non degree granting research endeavors

to advance student training in research; (3) Foster and facilitate mentoring of UNE COM students in a variety of research and scholarship endeavors; (4) Administer and implement the Peter Morgane Student Research Fellowship Program and Annual UNE COM Research Forum; and (5) Coordinate web-site content and information related to the functions of this committee. RSC achieves these functions by working in conjunction with the UNE COM Associate Dean for Research and Scholarship, the UNE COM faculty and staff, the UNE COM students, and the UNE Office of the Vice President for Research and Scholarship (R&S). RSC also takes the lead on organizing/coordinating several seminar series (see below) and the COM research forums. In addition, RSC prepares and distributes a list of "[Faculty Research Interest](#)" to the current and prospective UNE COM students to show potential research opportunities the UNE COM students have thus further encourage student participation in research.

3. *UNE COM Seminar Series*

Many individual colleges and centers at the UNE host regular research seminar series year-round. The research/scholarship seminar series that are sponsored by the Department of Biomedical Sciences at the UNE COM, the UNE Office of R&S, and the Center for Excellence in the Neurosciences (CEN) are the most relevant seminar series to the UNE COM faculty. Due to the shared interest, the UNE COM, UNE COM Department of Biomedical Sciences, and CEN together created a shared Google doc sheet that lists all seminars (past and planned) from individual seminar series to facilitate the scheduling of seminars and often co-sponsor seminars. As the results, the UNE COM faculty and students can enjoy talks provided by preeminent scientists/scholars weekly on a year-round basis. In addition, other seminars or research activities that are relevant to the COM, including those hosted by other colleges and centers within and outside of the UNE, are also communicated through the Google doc sheet and announced to all of the COM faculty and students via emails and the [UNE COM Research Seminar posting](#). It should also be noted that the UNE COM also invites student clubs to co-sponsor external speakers, which further increases the COM students' overall interest in research seminars and research in general. In addition, the UNE COM is dually accredited by the American Osteopathic Association and the Maine Medical Association's Council on Continuing Medical Education to provide continuing medical education (CME) for physicians. Starting from summer 2017, with the collaboration between RSC and [UNE COM Department of CME](#), many seminars became eligible for CME credits, which further enhanced the participation of physicians in the seminar series.

4. *The UNE Office of the Vice President for Research and Scholarship (UNE's Office of R&S)*

The UNE COM has worked closely with the [UNE's Office of the Vice President for Research and Scholarship \(UNE's Office of R&S\)](#) and made the leading effort in strengthening the UNE's research infrastructure, enhancing collaborations among various UNE's programs, and securing extramural funding. The UNE's Office of R&S was established in 2008 in response to UNE's fast growing research and scholarly activities. The UNE's Office of R&S oversees all of the [UNE's Centers and Institutes](#) for R&S related activities (*the Center for Excellence in the Neurosciences* and *the Center of Biomedical Research Excellence (COBRE)* for the Study of Pain and Sensory Function (funded by NIH/NIGMS), *the Center for the Enrichment of Teaching & Learning*, *the Center for Excellence in Health Innovation*, and the upcoming *Center for Excellence in Aging and Health*, are particularly closely related to UNE COM's research mission), the Office of Sponsored Programs, the Office of Research Compliances, Core Research Facilities and Services, as well as a variety of faculty mini-grant mechanisms (additional details in later sections). The UNE's Office of R&S provides leadership to the UNE community in building research and scholarly activities.

II. Major UNE COM Research Programs

In line with the osteopathic principle, a couple of decades ago, the UNE COM critically evaluated its research strength and determined that the UNE COM could make significant contributions to the advancement of knowledge and the development of osteopathic medicine in the following research areas.

1. Neuroscience Research in collaboration with the Center for Excellence in the Neurosciences (CEN)

Since 2009, the UNE has established several [research centers and institutes](#) to coordinate a university-wide effort in advancing research and scholarly activities in focused areas. These centers were built on existing strengths of faculty and educational programs and are designed to promote collaborative research and scholarly activities across the university. As one of the inaugural research centers, the [CEN](#) remains to be one of the most vibrant centers within the UNE community and is well-known by the neuroscience research community and local community. The mission of the CEN is to foster creativity and collaboration among people who have a passion for understanding the complexities of the nervous system and applying this knowledge to improve human health, productivity and quality of life. Significant numbers of the UNE COM faculty members are affiliated with the CEN (<http://www.une.edu/research/cen/about/people>). As members of the CEN, the COM faculty actively conduct extramurally funded research, provide high quality training to post-doctoral fellows, Ph.D., Master's, undergraduate students, medical and other health professional students in neuroscience research, and participate in K-12 outreach events. The UNE COM's leadership role in neuroscience research is reflected by the fact that both the inaugural and current CEN directors are UNE COM faculty members.

2. Chronic Pain Research in collaboration with the Center of Biomedical Research Excellence (COBRE) for the Study of Pain and Sensory Function

The UNE [COBRE](#) for the Study of Pain and Sensory Function was established in 2012 through a \$10 million National Institute of Health (NIH) grant from the National Institute of General Medical Sciences (NIGMS) with Dr. Ian Meng, a faculty member in UNE COM as the Program Director. The Center's mission is to significantly contribute to the scientific understanding of the neurobiology of chronic pain, facilitating the discovery and development of novel therapies. The primary focus of the Center is to provide support to several junior scientists as they establish independent, extramurally funded research programs. To date, the Center has supported eight [principal investigators \(PIs\)](#) since its establishment including five junior PIs from the UNE COM, with NIH R01-size funding for each PI (ranging from \$136,000 to \$250,000 per year). The Center has also supported numerous [pilot projects](#) led by additional UNE faculty (five from the UNE COM) (ranging from \$ 25,000-50,000 per investigator per year), six Post-doc fellows, five Ph.D. students, eight master's students, and numerous undergraduate student researchers. In addition, with the COBRE funding, two core facilities, the [Behavioral and Genotyping Core](#) and the [Histology and Imaging Core](#), have been established allowing researchers across the university and outside of the UNE access to specialized instrumentation and equipment to carry out cutting-edge research, as well as the necessary training and expertise for using these instruments and equipment. As a result of the robust support from COBRE, over the last five years, faculty members affiliated with the COBRE have yielded a total of ~\$10 million new extramural funding, 49 peer-reviewed publications, and over 200 poster presentations (<http://www.une.edu/research/cobre/news>).

3. Research in Aging in collaboration with the upcoming Center for Excellence in Aging and Health

In the field of aging, Maine is at the center of one the biggest demographic shifts in our history. It is predicted that one in four Mainers will be 65 years of age or older within the next two decades. Some towns within Maine, such as Kennebunk, will reach this prediction more than 10 years ahead of the national prediction. Although the number of workers in Maine has increased by approximately 800 people per year, economic forecasts indicate that our state will need an additional 2,500 people per year to meet the projected 2017 demand, thus leaving us with a deficit of 1,700 workers. These statistics have important implications for our state and economy. Examples include, employers facing a retiring workforce, families balancing work with the care of aging parents, and aging Maine seniors facing costly health care needs. The UNE COM has recognized this issue and has made research on aging one of its main focuses. As a result of this focus, the UNE COM has been recognized as a leader in aging research. In 2015, a report was completed through the Maine Council on Aging (MCOA) assessing research conducted at Maine's Higher Education Institutions that either focused on aging or impacted aging. Marilyn R. Gugliucci, Ph.D., MCOA board member and a faculty

member of the UNE COM's Department of Geriatric Medicine, was the co-chair for this statewide assessment. The UNE was tied with the University of Maine with 26 projects each that met the criteria set by MCOA. Most of the UNE aging research is through CEN, the Department of Geriatric Medicine, and UNE COM's Department of Biomedical Sciences.

Within the Department of Geriatric Medicine there are three areas of ongoing research: (1) Balancing Act Falls Prevention Program– NIH Funded 2014-2016 to test the Balancing Act Program with older adults that have vision impairment and blindness; (2) Learning by Living Nursing Home Immersion – unique to the UNE COM whereby medical students are “admitted” into a nursing home for two weeks with a diagnosis to live the life of an elder resident complete with standard procedures of care; and (3) 48 Hour Hospice Home Immersion – in which second -year medical students are paired and immersed in an in-patient hospice home for 48 hours to provide patient, family and post mortem care in an interprofessional team environment. The falls prevention research is based on blinded randomized clinical trials and the immersion projects are based on qualitative ethnographic/auto-biographic research designs. Additionally, Kouta Ito, MD, the UNE COM Geriatrician, has conducted research and published with his colleagues at Brigham and Women's Hospital on the cost-effectiveness of full coverage of aromatase inhibitors for Medicare beneficiaries with early breast cancer.

It should also be noted that recently UNE became the first university in northern New England and the fifth in the nation to be officially recognized as an Age Friendly University (AFU) by the international Age Friendly University Global Network, which is led by Dublin City University with support in the United States from the Association for Gerontology in Higher Education highlighting the role higher education plays in meeting the challenges and opportunities of an aging population (<http://www.une.edu/news/2017/university-new-england-named-%E2%80%9Cage-friendly-university%E2%80%9D>). This recognition, together with the upcoming Center for Excellence in Aging and Health (<http://www.une.edu/news/2017/une-announces-new-center-excellence-aging-and-health>) will further promote the UNE COM faculty to continue to advance UNE's aging research.

4. Medical Education Research in collaboration with the UNE's Center for the Enrichment of Teaching and Learning (CETL)

With the transformation of medical education and the evolution of non-lecture based curriculum, an emerging group of faculty became devoted to medical educational research. Areas of research include but not limited to team-based learning, concept mapping, curriculum integration, nutrition in the medical school curriculum, interprofessional education, active learning, reflective writing, health promotion for medical students, and online education with science prerequisites for the health professions. The UNE COM faculty members have consistently presented high quality work at various national and international conferences on education including [the International Association of Medical Science Educators \(IAMSE\) Annual Conferences](#).

Many UNE COM faculty/staff's medical education research projects are supported by the [Scholarship of Teaching and Learning \(SoTL\) mini-grants](#). To serve the needs of the UNE's commitment to teaching excellence, the UNE established the [Center for the Enrichment of Teaching and Learning \(CETL\)](#) in 2015. The CETL is a dynamic resource that serves as a catalyst and support for innovative, vibrant, and effective teaching and learning. The center provides various services related to teaching and learning improvement, including organizing workshops, hosting external speakers, individual consultation, drop-in and learn sessions, and online resources. Importantly, CETL also provides [mini-grants](#) to UNE faculty / staff to promote the scholarship of teaching and learning within the UNE community. To date, seven UNE COM faculty/staff members are past and current [SoTL mini-grant recipients](#).

The UNE COM offered an online [Master of Science in Medical Educational Leadership \(MMEL\)](#) until the end 2014-2015 academic year when the MMEL program was transitioned to UNE's Online College of Graduate and Professional Studies. Thirty-one UNE COM faculty (including faculty from clinical sites), staff and students have enrolled in this program to improve their skills in medical education and leadership. Eight faculty members from other UNE colleges have also enrolled in the program. The MMEL program offered a course in medical education research that included the design of a research study. Students also had the opportunity to conduct the research study in the six-credit applied project or to conduct a project related to their professional work in education and/or leadership in an academic setting. Their projects were often presented at national meetings and submitted for publication.

5. *Interprofessional Education and Research in collaboration with the Center for Excellence in Health Innovation*

The UNE established its Center for Excellence in Interprofessional Education (IPE) in 2009 to coordinate the college based IPE effort across the university. In 2010, the UNE Interprofessional Education Collaborative (IPEC) was formally established. In the fall of 2015, the Center for Excellence in IPE was expanded and renamed as the [Center for Excellence in Health Innovation](#). These IPE-focused centers have transformed UNE's education in various health professions including the UNE COM in both pre-clinical and clinical phases and promoted/facilitated the collaboration between various health profession programs. UNE COM is committed to interprofessional education and research. In 2015, the UNE received a major grant award from the Josiah Macy Jr. Foundation for \$600,000 to expand its interprofessional team-based curriculum to all health professional programs. The UNE COM is the first osteopathic medical school in the country to receive Josiah Macy Jr. Foundation funds to expand interprofessional education offerings through all four years of the curriculum. The ultimate goals of the [Macy grant](#) are to ensure all health care professionals who are UNE graduates are equipped with the necessary team-based skills to ensure high quality patient care, and to address shortages of health care professionals in rural Maine. Since the beginning of the Macy grant, along with students from other health professions (dental, pharmacy, social work, physical therapy and occupational therapy): (1) All first-year COM students participated in facilitated, focused IPE seminars (TeamSTEPSS); (2) Eighty-seven UNE COM MSI and MSII students participated specific IPE programs including a Care for the Underserved Pathway (36), Mercy Pain Clinic (8), Rural Health Immersion (10), Point of Dispensing Public Health Emergency Preparedness Exercise (20), Vaccine Clinics for Underserved Populations (13); and (3) COM MSIII and MSIV students rotating at the Eastern Maine Medical Center (EMMC), a UNE clinical affiliate, continued to participate in the IPE student home visits (average eight visits per week), as part of EMMC's clinical IPE program. In the meantime, IPE-related research started to emerge gradually within UNE and UNE COM. For example, Dr. Ling Cao, an associate professor in the Biomedical Sciences Department at the UNE COM recently completed a [pilot project](#) that evaluated an education program "Supervised Student Interprofessional Pain Clinic", in the spring of 2016, which was later presented at the 2017 IMASE conference. This is a collaborative project between UNE's various health professional programs and the Mercy Pain Center in Portland, Maine and was funded by the UNE CETL. This program has since become a regular IPE offering for all interested health professional students.

III. Research Supporting Offices

The UNE COM faculty/staff receive supports/services from the following offices to conduct extramurally and intramurally funded research activities and to ensure compliance in all research and scholarly activities.

1. *Office of Sponsored Programs*

The mission of the [Office of Sponsored Programs](#) is to facilitate the University's goal of becoming a significant research institution by providing faculty with the highest quality research support services, while also protecting the University's interests by reviewing all proposals to external funding agencies, and by initiating and implementing research related policies and procedures, providing training and outreach, and

serving as a liaison between the University and its sponsors. The office's major functions and responsibilities are detailed on the [Office's web site](#).

2. Office of Research Compliances

The [Office of Research Compliances](#) was established to ensure all research activities performed at UNE is in compliance with applicable federal and state mandates. Promoting ethically responsible research is of utmost importance in facilitating a culture of compliance. The office, overseen and supported by the Director Research of Integrity, works with various compliance committees including the [Institutional Review Board \(IRB\)](#), the [Institutional Animal Care and Use Committee \(IACUC\)](#), and the [Institutional Committee on Biosafety \(IBC\)](#) to help ensure both the ethical conduct of research and the protection of the rights and welfare of humans and animals in research conducted at the UNE. Currently, IACUC oversees approximately 100 protocols, with the COM faculty or personnel responsible for 60-75% of those protocols at any given time. In a given month, the IACUC receives anywhere from 15-30 submissions from investigators, which include initial submissions, *de novo* renewals, and amendment submissions. The IRB oversees approximately 350 active protocols, with the COM faculty or personnel responsible for 5-8% of those protocols. In a given month, the IRB receives anywhere from 25-45 submissions, which include initial submissions, renewals, and amendments. The IBC has over 10 active exempt protocols with majority of which involve COM faculty and staff.

IV. Research Facility

All of the UNE COM faculty who conduct basic bench research have assigned lab space and have access to many shared major equipment for their research needs. Over the last several years, the UNE COM research faculty are further benefited from the UNE's overall improvement in research facility. These improvements are reflected by the newly renovated research space both on the fourth floor of Stella Maris Hall and on the second floor of the Pickus Center for Biomedical Research building, and growing numbers of core facilities supported both by the UNE's Office of R&S and extramural funding.

1. Research Space Renovation

Research space renovations were made in response to the UNE's fast growth in biomedical research and recent hiring of research faculty within the UNE COM, and supported by the UNE's Office of R&S and the UNE COM. The fourth floor of the Stella Maris building was completely renovated in 2012-2013 and now provides research space for three UNE COM faculty who conduct research in microbiology and drug development, as well as the COBRE Behavioral Core and a shared certified radiation room for projects using radioactive materials. The second floor of the Pickus Center for Biomedical Research building was partially renovated to fit the needs of the COBRE histology and imaging core, and two new UNE COM faculty who conduct research in cancer immunology and developmental biology respectively. The UNE COM evaluates its needs in research space annually and further renovations will be made to accommodate future research needs.

2. The Core Research Facilities and Services

The [Core Research Facilities and Services](#) at the UNE were established through both internal funding and external grants to provide the University community and other scientific institutions with access to state-of-the-art equipment and training. The purpose of the Cores is to make technology and expertise available to all students, faculty, staff and external researchers. The Cores are shared facilities categorized into centralized labs organized by areas of technology and scientific study and managed by highly qualified and trained facility managers. The UNE currently hosts the following core facilities:

- [Genomics, Analytics & Proteomics Core \(GAPC\)](#), providing researchers with state-of-the-art technologies, technical support and educational programs in genomics, analytics and proteomics;
- [In Vitro Drug Screening Core](#), offering expertise and services in various stages from the initial conception of therapeutic drugs to clinical testing;

- [Histology & Imaging Core](#), providing service, training and specialized instrumentation related to tissue processing, sectioning, staining, immunohistochemistry, microscopy, and image analysis;
- [Microscope Core Facility](#), providing training and services related to two specialized microscopes, the confocal microscope and an atomic force microscope;
- [Behavioral and Genotyping Core](#), providing services, training and apparatuses for variety of animal behavioral assessments, as well as genotyping genetically modified animals.

In addition, with the help from the UNE COM and the University Offices of R&S and CEN, the Biomedical Sciences department has purchased significant numbers of equipment (including maintenance cost in some cases) that are shared by all faculty within the COM and are often made available to other faculty within the UNE community. Frequently, decisions on equipment purchase (including some of the UNE core equipment mentioned above) are made according to the needs of the faculty, as recommended by the 2010 COCA visit team “...engaging research faculty in the assessment of core equipment and the prioritization of equipment purchases will enhance relationships and ensure the research outcomes expressed in the strategic plans are supported by the equipment required to accomplish expected outcomes.”

V. Time Allocation and Funding support for Faculty Research

1. Time and Effort Allocation

To ensure that faculty have protected time to pursue research and scholarship activities, the UNE COM has been innovative and flexible when assigning percentage effort (teaching, research, and services) to its faculty. Responsibilities for individual faculty are reflected by the times/efforts that are assigned to perform their tasks and are determined based to individual faculty members’ strengths and individual departmental needs. To maximize the research productivity, the UNE COM also established a faculty research track. This initiative provides the COM opportunity to recruit faculty members who are predominantly funded externally and willing to provide teaching service to the COM students. As a result, within the UNE COM, there is a mix of faculty who are research-dominant and faculty who are teaching-dominant. More details can be found in the Appendix C section on “College of Osteopathic Medicine College RPT Standards” within the [UNE Faculty Handbook](#).

2. Policy on Distribution of F&A Recovery Funds

To recognize the need to strategically invest in research and provide incentive for PIs to increase their research productivity, the UNE continues to have a unique policy to distribute the Facilities and Administrative Recovery (F&A sometimes referred to as “indirect”) from external grants (published in the “Attachment 7 Policy on Distribution of F&A Recovery Funds” within the [UNE Faculty Handbook](#)):

F & A Recovery (100%) = General funds (25%) + Office of R&S (40%) + Dean (10%) + PI (25%)

As a result, individual PIs would obtain additional funding to support their research program, and the office of R&S would be able to help contribute to new faculty start-up packages, shared research resources, and faculty mini-grants, and other strategic investments designed to increase research volume and improve the administrative support that faculty receive (OSP, research compliance, etc.). In addition, budget relief, which results from grant funded faculty salaries remain within the college, providing further incentives for increasing faculty participation in research at the college level.

3. Faculty Start-up Funding

Through working with the UNE Office of R&S, the UNE COM has also been able to provide generous start-up funding for its new faculty members who are research-dominant. Over the last several years since the 2010 COCA visit (2010-2016), the start-up funding per research-dominant faculty (who has 60% or above of total

effort in research) ranges from \$50,000 to \$400,000 with an average of \$190,000 per faculty. In the years prior to 2010, the highest start-up the UNE COM ever provided was \$150,000.

4. Funding Support for Research Initiatives

Besides individually negotiated start-up and F&A recovery received by the COM Dean that can be used to support faculty research, all of the UNE faculty, including the COM faculty have the opportunity to apply for [external grants](#) as well as internal grants administered through the UNE Office of R&S and various Centers.

Grants Activity Reports that list all currently extramurally funded or pending projects can be viewed via UNE ID and password through the [UNE Research site](#).

The following internal grant mechanisms are most relevant to the COM faculty/staff.

[VPR mini-grant](#) provided by the UNE's Office of R&S to support both junior faculty who are developing a research & scholarship program and senior faculty who are pursuing a new direction or beginning a project that has not been previously funded at any level. Research areas include Natural Sciences, Medicine, Humanities and the Creative and Fine Arts, and Social Sciences and Public Health.

[SoTL mini-grant](#) provided by the Center for the Enrichment of Teaching and Learning (CETL) to encourage faculty to investigate a component of their teaching to advance teaching practice and students' learning.

[COBRE pilot project](#) provided by the COBRE Center for the Study of Pain and Sensory Function to support faculty pilot projects related to understanding the neurobiology of chronic pain. Projects should be aimed at acquiring preliminary data for NIH R01/R15/R21 /SBIR/STTR or comparable grant applications and for publication in peer-reviewed journals.

[Core facility grant](#) - CEN has proposed additional funding opportunities to support individual researches to take advantage of the resources within UNE's core facilities.

VI. OPTI Research

The [College's OPTI \(NEOMEN\)](#) has robust research support tools for the residents associated with it. An online research methodology course, available asynchronously, vetted and proctored by the UNE COM professors, exists for those residents being first introduced to research. Each of our institutions runs its own IRB for research on their campus and provides specific research requirements to its residents. Once a year NEOMEN hosts a [research forum](#) open to both the UNECOM students and NEOMEN residents. It has consistently grown in size and is now mandated by many of the NEOMEN sites for residents during their final post graduate year. The forum is unique in that all abstracts are reviewed and corrections sought before acceptance but if corrections are made all of the abstracts are accepted. Original research is emphasized through a cash award for the top three winners in both the resident and student categories and a lecture on the state of research or specialized research topics is given as part of the awards ceremony. Finally, significant faculty research occurs at each of our NEOMEN sites and both students and residents participate but infrastructure and administration is health-institution specific and not NEOMEN-centric.

VII. Productivity of Faculty Research and Scholarship Activities

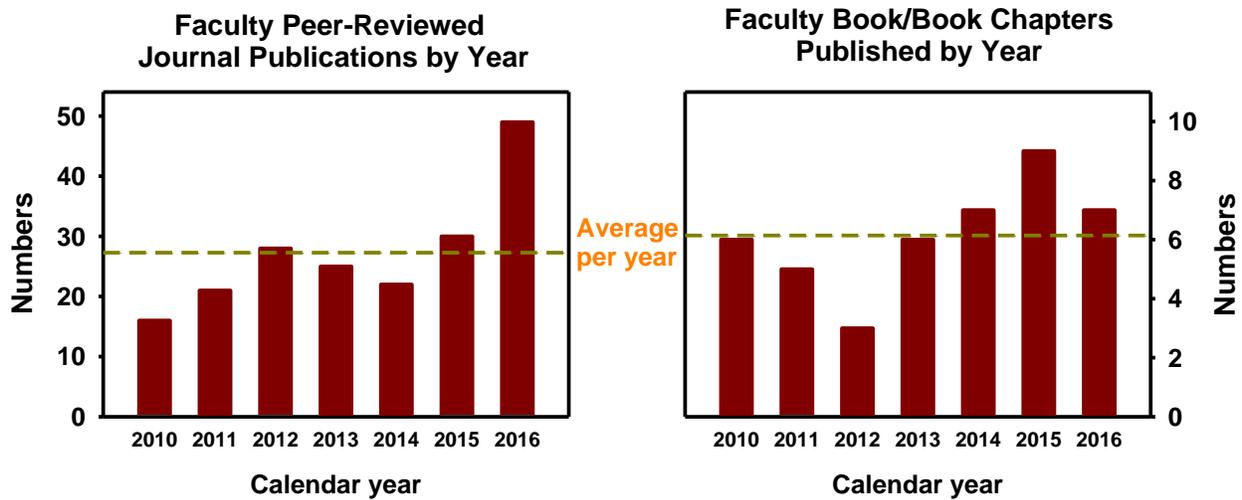
The combination of the UNE COM faculty's passion and dedication in research, and the UNE COM's consistent support for research and scholarly activities has resulted in tremendous accomplishment of its faculty in various areas. The UNE COM faculty have demonstrated its ability to make significant contributions to the advancement of knowledge and the development of osteopathic medicine through scientific research. Research productivity of the UNE COM faculty is highlighted in the following areas.

1. External Grants

All currently extramurally funded projects and projects that are pending for extramural funding are summarized in the Grants Activity Reports published by the [UNE's Office of Sponsored Programs](#).

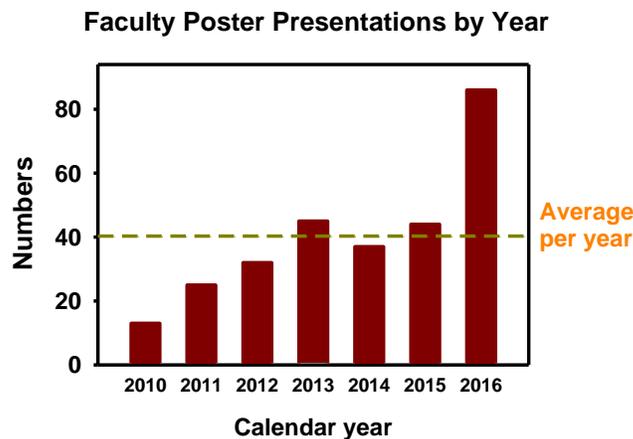
2. Publications

The UNE COM faculty continued to publish their work in high impact peer-reviewed journals, PNAS, Journal of Immunology, Journal of Neuroscience, Journal of Medicinal Chemistry, Antimicrobial Agents and Chemotherapy, Pain, Annals of the New York Academy of Sciences, Journal of Pharmacology and experimental Therapeutics, PLOS One, Journal of the American Geriatrics Society, Neuropsychopharmacology, European Journal of Pharmacology, Journal of Neuroimmunology, Medicine, European Journal of Applied Physiology, The Gerontologist, Journal of Anatomy, and Journal of the American Osteopathic Association. Summary graphs show the total numbers of publications (peer-reviewed articles and book chapters) generated by the UNE COM faculty during the time period of January, 2010 - December, 2016.



3. Presentations at Conferences

The UNE COM faculty has been presenting their research at international, national, regional and local conferences. Summary graph shows the total numbers of poster presentations made by the UNE COM faculty during the time period of January, 2010 - December, 2016 at the international, national or regional conferences. A clear upward trend over time can be seen, particularly a sharp increase in 2016.



4. Oral presentations

As the UNE COM faculty members become increasingly known by other researchers across the country, many of the UNE COM faculty members were invited to present their research orally at other institutions or major conferences. A summary graph shows the total numbers of oral presentations made by the UNE COM faculty during the time period of January, 2010 - December, 2016. Again, a clear upward trend over time can be seen.

