Carmen Pettapiece, D.O. Student Research Fellowship
&
Peter Morgane Student Research Fellowship
The University of New England College of Osteopathic Medicine
2018-2019

APPLICATION INSTRUCTIONS & TIME LINE

Medical students at the University of New England College of Osteopathic Medicine (UNE COM) can apply for funding to conduct research projects through either the UNE COM Dean's office (**Peter Morgane Student Research Fellowship**) or UNE COM Student Government Association (Carmen Pettapiece Student Research Fellowship). These are great opportunities for UNE COM students who wish to participate and obtain experience in biomedical, clinical, experiential, or translational research either at UNE or at other locations nationally/globally. Research projects can have a basic science, community health, clinical, and/or osteopathic orientation. Applications are evaluated through respective review processes and selections are made accordingly. All current UNE COM students who are matriculated at the time of the award and in good academic standing are welcome to apply.

NOTE: Students may apply for both Fellowships but may only be awarded one of the Fellowship awards. Students must indicate which award is preferred should a student's application be accepted for both.

SECTION I: PROGRAM OVERVIEW

The following deadlines and activities may apply to one or both Fellowship opportunities, indicated by an "X" in the box corresponding to the **Carmen Pettapiece** and/or **Peter Morgane Research Fellowships**. Included within this Instruction document are details specific to each Student Fellowship. Please refer to Sections noted in the final column for detailed information. Note that for particular activities listed here (indicated by *), the dates may be flexible and be determined on an individual basis. <u>Also pay special attention to all items indicated by ***** throughout this document</u>.

Time	Activity	Carmen Pettapiece Application	Peter Morgane Application	Related Section(s) Instructions
Early February	• Application materials become available at: http://www.une.edu/com/student-life/get-involved/research-opportunities	X	X	Read This Document
Before March 1 (Strongly recommended)	• Select mentor(s) for your research • Prepare research proposal with the mentor(s)	X	X	Section II
	Funding Amounts	**$2,000**	**$3,000**	
March 25 – 11:59 PM	**Deadline for Student Research Fellowship Application**	X	X	Section III
March 26-May 7	• COM Research & Scholarship Committee Reviews Applications • COM Student Professional Development Committee Reviews Applications with the Faculty Mentor	X	X	Section IV & Appendix B
May 8	• Announcement of Student Research Fellowship recipients	X	X	Section IV
June 1, 2018 – May 31, 2019* (See note below)	• Conduct research as proposed*	X	X	Section II-B and V

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Time	Activity	Carmen Pettapiece Application	Peter Morgane Application	Related Section(s) Instructions
				Be familiar with Section VI
June 5	• Deadline for completion of required UNE COM research training modules • Deadline for completing mentor-identified specific training ✓ Note that deadlines for completing all additional required training should be specified by the mentor in the application.	X	X	Section V and VI
June 5	• MSUCOM Research Training		X	Section V.4.a. and VI
July 1	• Submit Progress Report (form to be provided)*****		X	Section V and VI
Fall (Date TBD)	• Attend Keynote Address at the UNE COM Research Forum	Optional but encouraged	X	Section V and VI
Fall (Date TBD)	• Presentation during UNE COM Research Forum*	X	X	Section V and VI
Winter /Spring	• Optional presentations for MOA Poster Session (February) and/or NEOMEN Research & Scholarship Forum (May)	X (Optional but encouraged)	X (Optional ONLY if already presented at UNE COM Research Forum*) See Section V.5.	Section V and VI

* Each student researcher needs to work with his or her mentor(s) to propose a realistic timeline so the proposed project can be completed during the academic year. (Please see later sections indicated by ***** for details).

SECTION II: PREPARING YOUR APPLICATION

A. Mentor

1. **Every applicant must identify a primary mentor to assist in preparation of his/her application.** The primary mentor can be a faculty member from any UNE college (internal mentor) or a professional from another institution with adequate research/training experience (external mentor). For **Peter Morgane Applications ONLY**, if a co-mentor (internal or external) is identified, the co-mentor will share the responsibilities listed below with the primary mentor and will also need to provide all documents listed below.

2. **The mentor responsibilities include:** Sponsoring and supervising the proposed research project, including providing the necessary resources for the project; assisting the applicant with the application process (**BUT NOT WRITING THE PROPOSAL FOR THE APPLICANT**); ensuring that the applicant, if funded, completes all required training (see section V), stays on track with the research project; and aids in the preparation of the required research presentation at the UNE COM Research Forum.

3. **Each mentor needs to provide a letter indicating:** (a) A willingness to supervise the applicant, (b) the availability of space and resources needed to conduct the proposed research, and (c) the training/experience the student will obtain during the fellowship. The letter should also indicate whether the applicant will be under direct supervision

of the mentor, and if not, indicate who will be supervising the applicant. If a co-mentor is selected, in mentors' letters, please specify the roles of primary and co-mentor in the project.

Note: A mentor's letter is <u>NOT</u> a recommendation letter but indicating his/her commitment to the student.

4. **Each mentor needs to provide** a recent Curriculum Vitae (CV) or NIH Biosketch for the student's application.

5. **For Peter Morgane Application ONLY**:

   a. Mentors for Peter Morgane Fellows also need to complete and sign the "**Student Research Fellowship Mentor's Agreement**" (Appendix A).

   b. The mentor (a) must allow time for the awardee to prepare the required progress report; (b) approve the progress report; and (c) will be visibly copied (cc'd) on all communications to the Peter Morgane Fellow regarding the status of his/her application or fellowship (during the award period).

B. Application Instructions

Please use the guideline below and work with your mentor to prepare your application. All applications will be submitted via an online form (see Section III). It is recommended that you review the online form to gather necessary information **before** submitting your application.

1. Administrative information:

   Please fill in all required administrative information. Make sure to list all required trainings as directed in the application form. Note that for selected areas, you will need to consult with your mentor(s); for example, training requirement and NSF research fields (Appendix C) and type (Appendix D).

2. Research Proposal:
   Please use <u>Times New Roman Font 11 with 1" margin all around</u>). Please DO NOT exceed the allowed space for each section. Applications that exceed the space allowed will not be considered.

   *For the following sections (a-c), please focus on **YOUR PROPOSED** project, **not your mentor's project**.*

   (a) Background/Significance and Specific Aims (up to 1 page)
   - Provide a brief background about the problem(s) that will be addressed in **YOUR PROPOSED** project and discuss the significance. Provide a <u>brief</u> background on how the proposed project fits into an existing program (if applicable).
   - State concisely the specific aims of **YOUR PROPOSED** project (such as solving a particular problem/answering a question or learning/developing a new technique), along with a clear hypothesis [quantitative research]/assumptions [qualitative research].

   (b) Experimental Approach (up to 1¾ pages) - *The use of subheadings is often helpful*.
   - For each specific aim, describe the experimental design, methodology, and data analyses to be used.
   - Discuss anticipated results, potential problems, and alternate strategies.

   (c) Time Line of the Project (up to ¼ page)
   - Provide a **REASONABLE** time line for completing **YOUR PROPOSED** project.
   - Please include time for training to acquire necessary skills, time needed for completing each specific aim, and time for data analyses.

   * NOTE: Although most students plan to complete their proposed projects during the summer break, you and your mentor(s) should discuss and decide on a realistic timeline within the academic year. Both funding mechanisms fund projects from June 1 2018 – May 31, 2019.

   (d) Literature Cited (do not exceed one page) - *Citations should be in AMA format.*
   https://www.lib.jmu.edu/citation/amaguide.pdf

3. Assemble your Fellowship Application Package for uploading:
   - All components of the application package should be arranged in the following **ORDER** and converted into a **SINGLE** PDF file.
   - Please name your PDF file as: LastName_FirstInitial_2018-19_Fellowship_App

     ☐ Research Proposal

☐ Applicant's CV

☐ **Completed Primary Mentor's Agreement (Appendix A) Peter Morgane Applicants ONLY**

☐ Primary Mentor's Support Letter

☐ Primary Mentor's CV or NIH Biosketch

NOTE for Peter Morgane Applicants ONLY:
If there is a Co-Mentor, include the Co-Mentor's Support Letter, Co-Mentor's Agreement, and his/her CV/NIH Biosketch AFTER the Primary Mentor's documents.

SECTION III: SUBMIT YOUR APPLICATION

A. Deadline for submission: **Sunday, March 25 at 11:59 PM**

- Applications must be submitted electronically at http://www.une.edu/com/student-life/get-involved/research-opportunities.

- All correspondence regarding the application should be communicated via email **COMPMRF@une.edu**

B. Note that **late, incomplete, or incorrectly assembled** applications **WILL NOT** be considered for funding for either **award.**

SECTION IV: APPLICATION REVIEW PROCESS

A. Carmen Pettapiece Student Research Fellowship

1. Upon receipt of completed applications (see section II and III), the Chair of the SGA Professional Development Committee will convene a committee meeting to review the materials submitted. Applicants should be available at this time to answer any questions.

2. With the guidance of the faculty advisor(s), applications will be ranked by scientific merit and contribution to medicine.

3. Committee members shall vote on applications to be presented to the SGA for funding approval; the Chair shall vote only in the event of a tie.

4. Recipients of the Pettapiece Student Research Fellowship will be notified by May 8th**.**

B. **Peter Morgane Student Research Fellowship**

1. All qualified applications (see section II and III) will be forwarded to the UNE COM Committee on Research and Scholarship for critical/competitive review.

2. If the mentor (primary or co-mentor) listed for a particular application is a member of the Committee, he/she will recuse himself/herself from the review of that application.

3. Ad hoc reviewers may be assigned by the Research Committee.

4. Recipients of the Peter Morgane Student Research Fellowship and their mentors will be notified by May 8th**.**

NOTE TO APPLICANTS: *1)* *Refer to the review guidelines (see Appendix B) to craft a competitive application.*

2) *In order to receive and maintain the award, the applicant must be in and remain in good academic standing during the award period.*

3) *Students who apply for Peter Morgane funding, but their applications are not selected for funding, may request a meeting with Dr. Ling Cao [lcao@une.edu] to discuss the strengths and weaknesses of their applications.*

C. If you applied for both Fellowships and your application successfully meets the review criteria by both Committees, the Fellowship you indicated as the priority on your application will be considered first as funding is distributed.

SECTION V: REQUIRMENTS FOR STUDENT RESEARCH FELLOWSHIP RECIPIENTS

1. All award recipients are expected to conduct their research as proposed. It is the **AWARDEE's** responsibility to ensure the completion of their project during the proposed time period.

2. Complete the following training modules (Administrative information of the Application).
   a. CITI online training modules for research with human subjects, animals, or special agents (rDNA, infectious agents, select agents, and/or toxins) (if appropriate) – by June 5th
      - For Peter Morgane Student Fellows: Verification will be obtained by Dr. Cao from the administrator of UNE's Office of Research Compliance.
      - For Carmen Pettapiece Student Fellows: Inform your mentor when you have completed the training.
   b. Other required training identified by the mentor (Administrative information of the Application) – completion dates are determined on an individual basis (which should be included in the Application). For example, if you will be working in a research laboratory at UNE, you will have to complete the OSHA Blackboard training modules on laboratory safety, which **must be completed** prior to working in the laboratory (June 5 in most cases).
      - For Peter Morgane Student Fellows requiring UNE trainings on Blackboard, the student must send a screen shot of the Blackboard completion page to COMPMRF@une.edu email account. For other NON-UNE Blackboard training, verification must be sent from the mentor to Dr. Ling Cao at COMPMRF@une.edu.
      - For Carmen Pettapiece recipients, it is the student's and his/her mentor's responsibility that all required trainings are completed on time. Awardees need to make arrangements with his/her mentor regarding UNE trainings on Blackboard (if applicable).

3. Prepare a presentation for the UNE COM Research Forum, held in the Fall.

      - For Peter Morgane Student Fellows: Those that do not have sufficient materials to present their projects in the Fall, 2018 will be required to give a presentation about their research project in the coming Spring at the Maine Osteopathic Association (MOA) or New England Osteopathic Medical Education Network (NEOMEN) Research & Scholarship Forum. ***It is the students' responsibility to obtain an excused absence in advance if clinical or academic duties may be in conflict with participation of any of these Research Forums.*** If special arrangement regarding presentation is needed, please contact Dr. Ling Cao at COMPMRF@une.edu.

4. **Additional Requirements for Peter Morgane Student Research Recipients ONLY:**

   a. MSUCOM Research Training Course for Residents: Modules 1, 5, 6, 7, 9, 10, 19, and 20 (***Review the section and complete the post-tests if applicable; completion of the assignment is not necessary***) – by June 5 (Verification must be sent from the mentor to Dr. Ling Cao at COMPMRF@une.edu.)

   b. Submit a mentor-approved progress report by July 1 to Dr. Ling Cao at COMPMRF@une.edu describing the progress of your research (form will be provided by Diane Labbe at a later date). Awardees who start their projects after this date will be assigned a date for the progress report submission.

   c. Peter Morgane Student Fellows must attend the keynote address at the COM Research Forum in the Fall. Exceptions may be made on an individual basis for awardees unable to return to campus, in which case, an alternative activity will be arranged.

SECTION VI: FUNDING MECHANISMS

A. Carmen Pettapiece Student Research Fellowship
   1. Maximum amount rewarded to any one student is $2,000 (research fellowship stipend). This fellowship stipend will be dispersed in one allotment upon acceptance as well as the student's completion of the IRS Form W-9 with UNE's Accounts Payable Office. The fellowship stipend is not payment for services performed on behalf of UNE since the purpose of the Carmen Pettapiece Student Research Fellowship is to foster participation and experiences for student research activities. UNE will not issue the recipients a year-end tax form for the payments. The fellowship stipend may or may not be considered taxable income and it is advised that recipients consult a tax advisor with any questions.

2. Students will be required to present their research on campus at the UNE COM Research Forum or other approved research forums.

3. All Carmen Pettapiece recipients must be in good academic standing during the award period in order to receive payment.

B. Peter Morgane Student Research Fellowship

1. Funding includes up to $3,000 for a research fellowship stipend and up to $1000 for supplies. Supply funds are ONLY available to student researchers whose Primary Mentor is a UNE faculty (i.e. internal primary mentors). The mentor should contact Diane Labbe at COMPMRF@une.edu for receiving the $1000 for supplies. All purchase requests must be made by April 1, 2019 to secure the funds. Supply expenditures not allowed include: Salaries, food or drinks – consult Dr. Ling Cao for details.

2. Fellowship stipends will be distributed in four (4) payments upon fulfillment of the specified requirements of each stage (see below). Student's completion of the IRS Form W-9 with UNE's Accounts Payable Office is required prior to the first payment. The fellowship stipend is not payment for services performed on behalf of UNE since the purpose of the Peter Morgane Student Research Fellowship is to foster participation and experiences for student research activities. UNE will not issue the recipients a year-end tax form for the payments. The fellowship stipend may or may not be considered taxable income and it is advised that recipients consult a tax advisor with any questions.

3. All award recipients must be in good academic standing during the award period in order to receive payment.

Payment	Peter Morgane Student Fellowship Condition(s)	Time of distribution
#1 ($1000)	Completion of selected training ✓ CITI online training modules for research with human subjects, animals, or special agents ✓ MSUCOM Research Training Course for Residents (Module #1, 5, 6, 7, 9, 10, 19, and 20) ✓ UNE Blackboard Lab Training (for those working in UNE Labs ✓ Other *required* training determined by the mentor (if it is required to be completed on or before June 5th	After June 5 depending on payroll schedule
#2 ($1000)	• Submit a progress report to Dr. Ling Cao at COMPMRF@une.edu. • Completion of other required training determined by the mentor (included in the application)	After July 1 depending on payroll schedule
#3 ($500)*	• Attend Keynote Address at the COM Research Forum in the Fall • Completion of additional training requirements put forth by the mentor (included in the application)	After the COM Research Forum depending on payroll schedule
#4 ($500)	• Poster presentation of the research fellowship project at the UNE COM Research Forum in the Fall	After the presentation has been completed depending on payroll schedule

In addition, all fellows (Carmen Pettapiece and Peter Morgane) will be provided a template on CV writing and be notified about the availability of a group workshop on CV writing.

All research fellows are encouraged to stay connected with their mentor/supervisor to consider involvement in follow-up studies and/or to present at national and research conferences.

For Peter Morgane Student Research Fellowship Awardees ONLY, funds to defray the cost of attending these national/regional conferences may be available for up to $500 per fellowship upon request (use the "Student Travel Support Request Form" – Request form from Diane Labbe – COMPMRF@une.edu)

SECTION VII: QUESTIONS

A. CARMEN PETTAPIECE STUDENT RESEARCH FELLOWSHIP:

If you have any questions regarding the application process or while your work is in progress, please contact Dr. Hwyda Arafat, Carmen Pettapiece Student Research Fellowship Faculty Advisor, at harafat@une.edu (207-602-2389).

B. PETER MORGANE STUDENT RESEARCH FELLOWSHIP:

If you have any questions regarding the application process or while your work is in progress, please contact Dr. Ling Cao, member of the COM Research and Scholarship Committee, at COMPMRF@une.edu (207-602-2213).

APPENDIX A

PETER MORGANE STUDENT RESEARCH FELLOWSHIP (ONLY)
MENTOR'S AGREEMENT

To support the student Research Fellowship applicant/recipient,

      (Applicant's name)

As a **Mentor**, who directly supervises the student's research project, I,   (Mentor's name), am aware of and prepared to perform the following duties:

1. Assist the student applicant with the application process. This includes providing necessary information on the selected project, Aiding in identifying the specific focus for the student applicant's research project, discussing the writing of the proposal, and reviewing the application;

2. Ensure appropriate protocol(s) are approved by IRB, IACUC, or IBC prior to the beginning of the proposed project when the research project involves human subjects, animals, or special agents;

3. Ensure all required research trainings are conducted prior to the student beginning his/her research;

4. Supervise the student's research and data analyses, with a particular emphasis on aiding the student in following the project's time line and ensuring the project is conducted according to IRB, IACUC, or IBC protocols;

5. If applicable, ensure the student attend and participate in the organized activities required for all Peter Morgan Research Fellowship recipients (outlined in application instructions);

6. Assist the student with preparing his/her presentation for the UNE COM Research Forum (or other approved conference); this may include editing an abstract, reviewing a presentation, etc. The presentation is a requirement for the Peter Morgane Student Research Fellowship.

Mentor signature: Date:

Title: Institution:

NOTE to the Mentor:

Along with your CV or Biosketch, please provide a letter indicating: (a) Your willingness to supervise the applicant, (b) the availability of space and resources needed to conduct the proposed research, and (c) the training/experience the student will obtain during the fellowship. This letter should also indicate whether the applicant will be under your direct supervision, and if not, indicate who will be supervising the applicant. If a co-mentor is selected, in mentors' letters, please specify the roles of primary and co-mentor in the project.

A mentor's letter is not a recommendation letter but instead indicates your commitment to the student.

Students were made aware that late, incomplete, or incorrectly assembled applications WILL NOT be considered for funding. Thank you for your support!

Peter Morgane Student Research Fellowship (only) Review Guidelines

The following are guidelines that the UNE COM Research & Scholarship Committee uses to evaluate the Peter Morgane Student Research Fellowship applications.

The studies proposed may be self-contained or a component of a larger (longitudinal) project. What is important is that there is <u>a meaningful objective/outcome for the student</u> (for example, it would not be acceptable if a student's project is to input raw data only without participating in the data collection or any data analyses) and that there is <u>clear evidence of mentorship</u> from the mentor (or an appropriate designee). Some other aspects to be considered are as follows:

> Is the study hypothesis driven or goal oriented?
> Is (are) the stated goal(s) reasonable and measurable?
> Is the experimental design suitable for completing the specified aims?
> Does the mentor have the experience and resources to direct the study?
> Is there evidence that the applicant is engaged in the research proposal?
> Will the research experience be beneficial to the student by adding a new skill or experience?

Specific criteria:

The committee will score each of the proposals based on the following areas (see table below) using the **NIH 1-9 scale (with 1 being Exceptional and 9 being Poor-see the NIH scoring guidance table in the "NIH scoring system and procedure")**.

Item #	Areas for evaluation	Score
1	**Specific Aims and Significance**	
2	**Hypothesis or assumptions where appropriate**	
3	**Experimental approach**	
5	**Training environment (Quality of the mentor, Mentoring plan and experimental resources)**	
6	**Timeline**	
Overall merit summary: Summarize the overall assessment of the proposal and the applicant's potential for conducting the research. Strengths and (more importantly) weaknesses should be stated to justify the score.		
Overall score: An overall score will be provided that reflects the rating of the application. This score is not simply an average of the individual evaluation scores, but will take into account the overall enthusiasm for the student and the project.		

EXAMPLES OF DISCIPLINES UNDER EACH R&D FIELDS

(Use this information to answer NSF question regarding research fields <u>on the online application</u>)
Share/consult with your Mentor

D. Life Sciences
1. Agricultural Sciences Agricultural business and management Agricultural chemistry Agricultural economics Agricultural engineering—report in Engineering Agricultural production operations Animal sciences Applied horticulture and horticultural business services Aquaculture Food science and technology International agriculture Plant sciences Soil sciences Wood science

2. Biological and Biomedical Sciences
Allergies and immunology Biochemistry, biophysics, and molecular biology Biogeography Biology and biomedical sciences, general
Biomathematics, bioinformatics, and computational biology Biotechnology Botany and plant biology Cell, cellular biology, and anatomical sciences Epidemiology, ecology and population biology Genetics Microbiological sciences and immunology Molecular medicine Neurobiology and neuroscience Pharmacology and toxicology Physiology, pathology and related sciences Zoology, animal biology

3. Health Sciences
Advanced, graduate dentistry and oral sciences Allied health and medical assisting services Bioethics, medical ethics Clinical medicine research Clinical/medical laboratory science/research and allied professions
Communication disorders sciences and services Dentistry Dietetics and clinical nutrition services Health and medical administrative services Health, medical preparatory programs Gerontology, health sciences Kinesiology and exercise science Medical clinical science, graduate medical studies Medical illustration and informatics Medicine Mental health Optometry Osteopathic medicine, osteopathy Pharmacy, pharmaceutical sciences, and administration Podiatric medicine, podiatry Public health Radiological science
Registered nursing, nursing administration, nursing research and clinical nursing Rehabilitation and therapeutic professions Veterinary biomedical and clinical sciences Veterinary medicine Zoology

4. Natural Resources and Conservation Fishing and fisheries sciences and management Forestry Natural resources conservation and research Natural resources economics Natural resources management and policy Renewable natural resources Wildlife and wildlands science and management

5. Other Life Sciences
Other life sciences that cannot be classified using the fields listed above

Click on Link to see additional examples of R&D Fields (Page 9 from link):
https://www.nsf.gov/statistics/srvyherd/surveys/srvyherd_2017_short.pdf

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Appendix D

Share/consult with your Mentor

NSF classification for the Research Types

Type of Research		
<u>Basic</u>	**<u>Applied</u>**	**<u>Experimental Development</u>**
Experimental or Theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.	*Original investigation undertaken in order to acquire new knowledge. It is directed primarily towards a specific, practical aim or objective.*	*Systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products or processes or to improving existing products or processes.*
Examples		
A researcher is studying the properties of human blood to determine what affects coagulation	*A researcher is conducting research on how a new chicken pox vaccine affects blood coagulation.*	*A researcher is conducting clinical trials to test a newly developed chicken pox vaccine for young children.*
A researcher is studying the properties of molecules under various heat and cold conditions.	*A researcher is investigating the properties of particular substances under various heat and cold conditions with the objective of finding longer---lasting components for highway pavement.*	*A researchers is working with state transportation officials to conduct tests of a newly developed highway pavement under various types of heat and cold conditions.*
A researcher is investigating the effect of different types of manipulatives on the way first graders learn mathematical strategy by changing manipulatives and then measuring what students have learned through standardized instruments.	*A researcher is studying the implementation of a specific math curriculum to determine what teachers needed to know to implement the curriculum successfully.*	*A researcher is developing and testing software and support tools, based on fieldwork, to improve mathematics cognition for student special education.*

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