



CETL Funded Projects Application

Before beginning the application process, it is highly advised that you contact Erin Gilligan, Project Coordinator, Center for Excellence in Teaching and Learning at 678-331-4493, or Erin.Gilligan@life.edu.

Application forms and supporting documents should be compiled and submitted by attaching the completed file below (including this application form, documentation of IRB and any attachments including price quote attachments, etc.). Please include your completed application package along with a copy of your current resume or curriculum vitae.

Application Submission Date:

DO NOT LEAVE ANY AREAS BLANK; write N/A if the question does not apply to you.

Principal Investigator/Project Director

- Name: [REDACTED]
- College/Department: College of Chiropractic Chiro Sciences
- Phone and Email: [REDACTED]

Co- Investigator/Co- Director(s)

- Name: [REDACTED]
- College/Department: College of Chiropractic Chiro Sciences
- Phone and Email: [REDACTED]

Co- Investigator/Co- Director(s)

- Name: [REDACTED]
- College/Department: College of Chiropractic Chiro Sciences
- Phone and Email: [REDACTED]

Project Title: Development of extremity adjusting force profiles for clinical training in a chiropractic program.

Funding Request: UPDATE DATES TO FIT APPLICATION PERIOD

Year 1 (July 1, 2022 through June 30, 2023): 13,500
Year 2 (July 1, 2023 through June 30, 2024):

With the submission of this document, I certify that the information contained herein is accurate, that all listed co- applicants have reviewed and agreed to the scope of work, and that all relevant supervisors have reviewed and approved the involvement of each key personnel listed above.



04/14/23 | 12:33 EDT

Type Name of Principal Investigator/Project Director

Type Date

Human Subjects Research:

Institutional Review Board approved (approval attached)

Institutional Review Board application submitted and under review; submission date

Other (explanation required): [IRB details are in the overview section of the attached submission.](#)

*Please complete the following project overview in the [provided Word document template](#). **Attach by clicking the icon on the left to submit your documents.***



IN NO MORE THAN TEN PAGES, PLEASE PROVIDE A DESCRIPTION OF THE FOLLOWING:

A. Project Summary/Abstract: Provide a one-paragraph summary of your project, including details on WHO is involved, WHAT is the research problem/question/hypothesis, WHY it is important knowledge for the field, WHEN in terms of a timeframe of data collection, and HOW in terms of the basic study protocol.

B. Introduction/Background: Provide a description that succinctly contextualizes your project, defines the problem, and demonstrates your knowledge of the topic and what has been done and/or gaps in knowledge/practice around it. Citations should be formatted in the standard of the field related to your project.

C. Rationale, Research Question(s)/Problem/Hypothesis, and Goals: If you are proposing a research project, describe your research question(s) (and/or, as applicable) testable hypothesis, specific aims or objectives to be addressed and what, specifically, you hope to accomplish.

If you are proposing an innovation, service, or education project, describe your problem or question, specific aims or objectives to be addressed, and what you hope to accomplish.

D. **Project Design and Methods:** This is the heart of the application that describes in greater detail what you will be doing, where the work will take place and why the location is appropriate, who will be involved, and specific outputs for each stage of your research.

For research projects, include a description of the approach/methods you will be using (e.g., qualitative surveys and/or focus groups, participant or site observations, media or discourse analysis, interviews, quantitative data gathering and analysis, controlled experiments, etc.), the theoretical framework that informs your approach, and how you will adhere to ethical standards (especially if using human subjects).

For innovation, service, or education projects, describe your project design process, planned deliverable(s) (final product), why you have selected this approach and deliverable(s), and how you will adhere to ethical standards (especially if using human subjects).

E. **Project Timeline:** Major activities and tasks with sufficient detail to indicate you have analyzed time and effort and human resource requirements. You can depict the timeline in table format or use bullets.

F. **Evaluation Plan:** Describe how you will assess progress toward achieving your stated objectives or aims (what are your benchmarks and metrics), and the planned outcomes for your project.

G. **Dissemination Plan:** Describe how you plan to disseminate your results, especially in terms of peer-reviewed presentations and publications for research projects, or to the LIFE or wider community for innovation, service, or education-related projects.

H. **Anticipated Limitations or Challenges:** Discuss some of the likely obstacles that you might encounter and your plan for overcoming those obstacles should the case arise, as well as limitations of what can be discovered or shown through this project.

I. **Relevance:** Discuss how the project is relevant to the mission and/or strategic initiatives of Life University, to advancing knowledge/practice in your field and/or across disciplines, and benefits to/potential impact on society more broadly.

J. **Funding Request/Budget:** Please provide an itemized breakdown of the cost of all needed resources to undertake the work, including, contract labor/consultants, equipment, materials and supplies, travel, reproduction, etc. In the rare instance you are requesting release time, this must be pre- approved by the Dean and Supervisor.

Budget Categories	Year 1	Year 2	Total
Salaries and Wages			
Stipends (fixed regular sum)			
Consultant Fees			
Equipment (>\$5,000)			
Materials & Supplies			
Subscription/Communications			
Travel (data collection related*)			

Postage/Shipping			
Miscellaneous			
Subtotal			

- Attach quotes/provide url address for supplies/equipment; justification required for preferred vendor.

K. Budget Narrative: Please explain project costs per category, per year (as applicable):

- Salaries and Wages: List all key personnel (faculty, staff or students) performing work on the project for whom you are requesting funding support. You should provide each person’s title on the project, describe the role they will play, and the time and effort expected, i.e., PI at 3- credit overload to oversee study design, IRB protocol approval, recruit participants, ethnographic research, etc.
- Stipends: A fixed, regular sum paid over a term period to a LIFE U faculty, staff or student to support work on the project, i.e., PSY faculty to develop, validate and administer survey instrument or sport health science faculty performing bone density analysis using DEXA imaging.
- Consultant Fees: A fixed sum paid over a term period to non- LIFE U personnel for a specific scope of work, i.e., design and lead focus group sessions or analyze metabolite data using LCMS. A basis should be provided for the fee (including a written quote from the vendor). If available, the consultant(s) should be identified.
- Equipment: With a value equal or greater than \$5,000 per unit. Include written quote or link to url. If a single source vendor is required, provide justification. Detail *why* equipment is needed, its *specific use*, *where* it will be housed, and plans for post- project *maintenance* and *access*.
- Materials & Supplies: Value less than \$5,000 per unit. Include written quote or link to url. List *name* of item, *cost*, *specific use*, plans for post- project *maintenance* and *access*, if applicable.
- Travel (data collection-related): List project staff traveling, destination/event, and mode of transportation and estimated cost. Non- LIFE U faculty, staff or students *are not eligible* for travel support. *Note: Funded Projects covers travel for data collection-related purposes; it does *not* cover travel expenses for conference presentations or publication (these are covered by CETL Professional Development Grants).
- Postage, Shipping, Duplication: Detail as applicable.
- Miscellaneous/Other: List other project costs not captured on previously referenced cost categories. This might be participant support costs such as gas/bus cards, food for after-hour focus groups or extended meetings, etc. All costs must be detailed and justified.

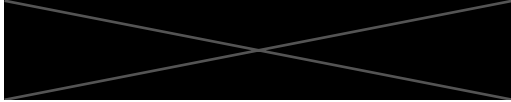
L. Additional Funding Sources: Please note whether applications for funding are being provided to/or have been approved by any other agencies or organizations and provide detail of those requests/awards.

M. List of Bibliographic References (in the style appropriate to your field). (This information is not included in the page limit)

Reminder: Your completed application must include the following:

1. This application form
2. CV or resume
3. Human Subjects Research IRB approval/determination
4. Any additional attachments including price quote attachments, etc.

Please submit our completed application along with materials via DocuSign.



04/14/23 | 12:33 EDT

Date

DocuSigned by:



CETL signature

04/14/23 | 14:02 EDT

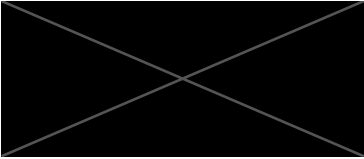
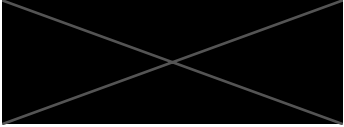

Date



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**Office Use Only:**

Proposal Status:   Pending     Declined     Funded     Withdrawn   Proposal Number

**Life University Institutional Review Board (IRB)**  
 Committee for the protection of human participants in research  
**Full Review or Expedited Review application & protocol form**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Title of project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Development of extremity adjusting force profiles for clinical training in a chiropractic program.</b>                                                                                                                                                                                                                                         |                                                                                               |                                                                                                 |
| Intended start date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>July 2023</b>                                                                                                                                                                                                                                                                                                                                  |                                                                                               |                                                                                                 |
| Name of Principal Investigator (P.I.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                  |                                                                                               |                                                                                                 |
| P.I. e-mail address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |
| P.I. telephone number(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |
| Category,<br>[X] as appropriate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Life U employee <input type="checkbox"/> administration <input checked="" type="checkbox"/> <b>faculty</b> <input type="checkbox"/> staff<br>Life U student <input type="checkbox"/> DC program <input type="checkbox"/> CGUS graduate <input type="checkbox"/> CGUS undergrad<br>Non-employee / off-campus collaborator <input type="checkbox"/> |                                                                                               |                                                                                                 |
| Faculty or staff PI: campus department                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chiropractic Sciences                                                                                                                                                                                                                                                                                                                             |                                                                                               |                                                                                                 |
| Student or non-employee PI: mailing address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/S                                                                                                                                                                                                                                                                                                                                               |                                                                                               |                                                                                                 |
| For Life U. student or non-employee: name & contact info of campus faculty or staff sponsor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N/A                                                                                                                                                                                                                                                                                                                                               |                                                                                               |                                                                                                 |
| Will this project have funding?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <input type="checkbox"/> yes <input checked="" type="checkbox"/> <b>no</b> <input type="checkbox"/> maybe / pending                                                                                                                                                                                                                               |                                                                                               |                                                                                                 |
| Name of funding source, if applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Funded Projects                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |
| Funding deadline date, if applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                               | <input checked="" type="checkbox"/> new project <input type="checkbox"/> funding continuation |                                                                                                 |
| Other funding information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | N/A                                                                                                                                                                                                                                                                                                                                               |                                                                                               |                                                                                                 |
| <p><b>PRINCIPAL INVESTIGATOR</b> - <i>My signature below testifies that I pledge to conform to the following:</i></p> <ul style="list-style-type: none"> <li>As one engaged in investigation using human participants, I acknowledge the rights and welfare of the participants.</li> <li>I acknowledge my responsibility as an investigator to secure the informed consent of the participants by explaining the procedures, in so far as possible, and by describing the risks, as weighed against the potential benefits of the investigation.</li> <li>I assure the Committee that all procedures performed under the project will be conducted in accordance with those federal regulations and University policies that govern research involving human participants. Any deviation from the project (e.g., change in principal investigator, research methodology, participant recruitment procedures, etc.) will be submitted to the Committee in the form of an amendment for its approval prior to implementation.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Date                                                                                                                                                                                                                                                                                                                                              | 04/14/2023                                                                                    | CITI #<br> |
| Sponsor signature, if applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | N/A                                                                                                                                                                                                                                                                                                                                               | Date<br>N/A                                                                                   | CITI #<br>N/A                                                                                   |
| <p>Signatures on this page and the next may be submitted separately from the application and protocol.<br/>         The CITI # is found on your completion certificate for the CITI human research participants protections course.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                   |                                                                                               |                                                                                                 |



**Will your project involve any “vulnerable populations” listed below?**     YES     **NO**  
 If yes, mark the appropriate box [X], and explain how you will address the issue.

|                                                                                             |                                                                        |
|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> persons with physical disabilities                                 | <input type="checkbox"/> persons with mental disabilities              |
| <input type="checkbox"/> economically or educationally disadvantaged                        | <input type="checkbox"/> minors (under age 18); approximate age: _____ |
| <input type="checkbox"/> pregnant women                                                     | <input type="checkbox"/> fetuses                                       |
| <input type="checkbox"/> incarcerated persons                                               |                                                                        |
| <input type="checkbox"/> other vulnerable population – describe:                            |                                                                        |
| Why are you using this group, how are they vulnerable, and how will you address this issue? |                                                                        |

**Will your project involve any of the groups listed below?**     **YES**     NO  
 If **yes**, mark the appropriate box [X], and explain how you will address the issue.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> students<br><i>(issue: may perceive pressure to participate (whether real or implied) in research conducted by faculty members or administrators, and may be concerned that non-participation could affect grades or relationships with instructors)</i>                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> patients who entered clinic or private practice for non-research purposes<br><i>(issue: may perceive pressure to participate (whether real or implied) in research conducted by treating doctor and may be concerned that non-participation could affect their care or relationships with doctor or clinic personnel)</i>                                                                                                                                                                                                                                                                                                         |
| <input type="checkbox"/> employees of the university<br><i>(issue: may perceive pressure to participate (whether real or implied) in research involving employees and may be concerned that non-participation could affect their job or relationships with supervisors)</i>                                                                                                                                                                                                                                                                                                                                                                                |
| Please explain how you will address the issue:<br>All participants will be members of the Life University faculty (some possibly staff or administration.) The topic of the survey may be controversial, as there are some strong historical disagreements, and many of the methods being inquired about are subject to personal opinion and preference. However, we believe there is sufficient trust between the investigators and the participants for us to be able to obtain the information we seek, and the participants will be assured that their identities and individual opinions will not be shared with anyone other than the investigators. |

**Please identify all co-investigators and their certificate numbers for the CITI Research, Ethics, Compliance, and Safety Training online training course. Send certificates and scan of signatures separately.**

| Co-investigator name                                                                                                 | CITI # | Signature (print/sign/scan or electronic insertion) |
|----------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------|
|                                   |        |                                                     |
|                                   |        |                                                     |
|                                   |        |                                                     |
|                                   |        |                                                     |
| Co-investigators' signatures indicate a pledge to conform to the same ethical principles listed for the PI on Page 1 |        |                                                     |

**The federal guidelines from the U.S. Office of Human Research Protections (OHRP) assume that research projects will be reviewed by a full committee meeting unless they are “exempt” from full review or qualify to have expedited review.**

Both types can be reviewed by 1 or a few members rather than waiting for a meeting of the full committee.) If you believe your project may qualify for exempt or expedited review provide at least 1 qualifying Research Categories as defined by the OHRP, which may be accessed via the URL below or on the Life University IRB’s Blackboard site (*Start here >> Types of Review >> Current Federal guidelines for expedited and “exempt” review categories.*) Input the major category and any applicable subcategories in the text box.

Expedited: <https://www.hhs.gov/ohrp/regulations-and-policy/guidance/categories-of-research-expedited-review-procedure-1998/>

Exempt: <https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/common-rule-subpart-a-46104/>

Exempt category 2: Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met (a) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects, or (b) Any disclosure of the human subjects’ responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, educational advancement, or reputation.

**Section A: Purpose and overview**

- *Briefly describe the general nature and purpose of the proposed research. Use plain language, avoiding technical jargon whenever possible. Write in a way understandable to readers who do not have a background in your area of study.*
- *Also, indicate whether this is student research for a course, a thesis, a dissertation, or independent research.*

The chiropractic profession includes a wide range of techniques and assessment protocols for determining whether and where to provide a chiropractic adjustment. This is complicated by the various theoretical constructs associated with how changes following a chiropractic adjustment occur. The proposed study represents an initial step in an effort to systematically catalogue the multitude of assessment protocols—especially related to nervous system assessment—that are used for determining: the location of a subluxation, whether to adjust the subluxation, and the presence of neurophysiologic consequences related to the subluxation.

Since Life University College of Chiropractic technique faculty were hired based on their experience and expertise in the field of chiropractic, we will begin by surveying and interviewing volunteer technique faculty members. The intent will be to anonymously record their opinions related to when and where to provide a chiropractic adjustment. An initial survey form with a list of potential assessment methods will be provided, along with fill-in-the-blank spaces for 3 more recommended methods.

To provide an opportunity for inclusion of additional assessment methods and the provision of available research, an optional interview session with [REDACTED] will be offered. The interview will not be anonymous but interview responses will be separated from participant identities.



It is anticipated that the results of this study will serve as a foundation for the development of a consensus assessment protocol for determining when and where to provide a chiropractic adjustment.

This project does not include any student research.

**Section B: Recruitment**

- Describe how participants will be recruited, state how many participants will be involved in the research (realistic estimate is acceptable), and how much time will be required of them.
- If minors are to be included, indicate the age range.
- Describe screening procedures. List specific eligibility requirements for participants – inclusion and exclusion criteria. If your study uses only male or female subjects, explain why.
- Disclose any relationship between researcher and subjects - such as teacher/student, doctor/patient, superintendent/principal/teacher, employer/employee.

Our primary participant targets are current technique faculty members of Life U’s College of Chiropractic (CoC). Secondary participant targets could include other faculty, staff, or administrators of the university who have been technique faculty members or who otherwise are familiar with the technique methods taught at the university. It is possible that as many as 20-25 people may participate in the survey. All will be DCs who are familiar with the technique methods taught by Life U’s CoC and who are willing to share informed opinions about what methods of patient assessment are most important for determination of whether and where to perform chiropractic adjustments. All participants will be employees of Life University.

One of the investigators, [REDACTED] is a technique faculty member for the College of Chiropractic, and formerly the Assistant Dean supervising all technique faculty members (TFMs). [REDACTED] has knowledge of which faculty members currently teach technique classes or have in the past, and has knowledge of some other faculty members, members of the administration, and faculty clinicians with C-HOP who are familiar with methods taught by Life University. She will compile a list of individuals to contact via 2 emails (an initial email and a follow-up), in which potential participants will be provided with a URL link and a QR code, either of which may be used to access the JotForm survey. Individuals will be blind-copied, with the email sent to [REDACTED] herself. Verbiage for emails will be:

Dear faculty and staff,

Below you will find a link for an anonymous survey conducted by the Dr. Sid E. Williams Center for Chiropractic Research. In this survey we are asking you to share informed opinions about what methods of patient assessment you feel are most important for determination of *whether and where* to perform chiropractic adjustments. The data gathered will be used as a starting point for further research. If you participate, your answers will be completely anonymous.

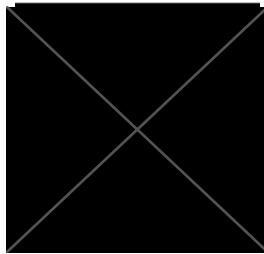
You will also have the opportunity to expand on those reasons for your preferences or provide additional information in a post-survey interview.

Questions? Contact [REDACTED]

The survey may be accessed here:



Or from this QR code



(The same links may also be used by IRB reviewers.)

will also post a flyer on her office door; the flyer will include the QR code that interested participants could scan to access the survey (our proposed flyer has been supplied separately to the IRB.)

She may also make an announcement at the Chiropractic Sciences Division meeting at the end of the quarter. She will not initiate any recruitment via individual personal contact, but will answer questions if contacted by an interested individual.

The survey is set up to begin with an informed consent section, such that anyone unwilling or apprehensive about sharing their opinions should not continue. Participants must have at least 1 year of practice experience beyond their educational experience (but are not required to currently be in active practice); and will therefore be asked in the survey to exclude themselves if they have less than 1 year of practice experience. Gender is neither an inclusion nor exclusion criterion.

It is anticipated that completion of the survey will require no more than 10 minutes of the participant's time.

There will be an option to provide more detailed information in one-on-one interviews. Participants completing the survey will see name and email address. The investigators will not know the identities of those who complete the survey, so participation in the interview is completely dependent on follow-through by those individuals. Completion of the interview will likely require no more than an additional 15 minutes of the participant's time.

### **Section C: Methods**

- *Describe all procedures to be used on human participants and describe what you'll be asking participants to do.*
- *State where the study will take place.*
  - *Note that if your project will involve the Life University chiropractic clinic system in any way, approval must be obtained from the clinic administration (see the IRB's Blackboard site >> The IRB Process >> Research involving the Life U clinics).*
  - *Consider that the IRB ascertains whether your project meets federal standards for ethical conduct of research. Use Life University resources, such as reservations of classroom or other space, may need separate approval by a department or Dean.*

As stated above, the study has 2 parts: the first part will involve an anonymous survey. The second part will involve direct contact with participants by one investigator during interviews (other investigators will not know participant identities.)

Interested individuals who either use the link provided above or scan the QR code will first see an informed consent section; those who wish to participate will only be able to access the survey itself by clicking a radio button in agreement of the terms of the survey and self-declaring that they meet the criteria.

At the end of the survey, they will be invited for a discussion with [REDACTED] to expand on some of the topics of the survey.

“The investigators invite you to participate in an interview with one of the investigators, [REDACTED]. The interview will provide an opportunity for you to expand on the reasons for your preferences. It will allow you to discuss research on your preferred methods (e.g., validity and reliability) if you wish to do so. Interview participation is optional, and your identity will be kept confidential.

If you would like to participate, please send an email to [REDACTED] with the subject line “interview”.

While we are directing interested individuals to contact [REDACTED] email, some have offices near hers and we anticipate some may decide to contact her in person.

Interview responses may be handwritten or typed on a tablet or laptop – whichever is most convenient at the time to [REDACTED] – and may be recorded with her cell phone (audio only, not video.) Audio recordings of the interviews will help ensure the additional comments are captured as the participants intended. Recordings will be used to verify accuracy of statements during note taking. Verbal consent will be noted in the recordings (“Participant code xx-1a, do you consent to being recorded?”) However, the participants will have the option to not have their interview recorded.

Interviews will take place on the Life University campus either within the Chiropractic Sciences division office or another location mutually agreeable to individual participants and [REDACTED]

In our examination of comments from the survey and the interviews, we will (1) look for answers that are repeated by more than one respondent and attempt to organize compile those together into themes and (2) differentiate those from responses that are unique. We have not identified a more sophisticated method than to compile answers into a Word document or Excel spreadsheet and subjectively organize into like items or to use the Find feature to look for common terms.

#### **Section D: Risks**

- *State the potential risks - for example, physical, psychological, financial, social, legal or other - connected with the proposed procedures.*
- *Briefly describe how risks to subjects are reasonable in relation to anticipated benefits. Describe procedures for protecting against, or minimizing, potential risks. Assess their likely effectiveness.*
- *If you are using an electrical device that is attached directly to subjects explain how the subjects will be protected from shock.*

Participation in this study has little or no risk. Most of the participants already know each other and [REDACTED] and are already familiar with each other’s professional opinions.

Nevertheless, there may be perceived risk. Some participants could fear negative consequences, should their opinions differ from the methods taught at Life University. However:

- the situation of faculty DCs having personal preferences for patient assessment methods that differ from the methods taught at Life University is not uncommon. Coexistence with differing professional opinions is “standard fare” for chiropractors.
- Anyone eligible to participate who wishes to decline may do so without coercion.
- Anyone who wishes to participate but remain anonymous may do so by completing only the survey and not the follow-up interview.

### **Section E: Confidentiality**

- *Describe methods for preserving confidentiality.*
- *How will data be recorded and stored, with any identifiers attached?*
- *How will reports will be written, in aggregate terms, or will individual responses be described?*
- *If applicable, what will happen to paper records, audio recordings, and video recordings at the end of the study?*

JotForm surveys will be anonymous. The investigators will have no identifying information. The survey system will be set up such that only one response can come from each distinct email address.

Interview records may consist of coded handwritten notes on paper, coded electronic notes typed on a tablet or laptop, coded voice recordings, and a log sheet of codes and names.

No investigator other than [REDACTED] will have personal contact with any participants, see their names, or listen to the voice recordings. [REDACTED] will not disclose the identities or responses of any participants to any other participants. Handwritten notes will be scanned to PDF and the originals will be destroyed. Voice recordings will be destroyed after the contents have been transcribed to an electronic document. The log sheet of codes with participant names also will be saved on the CCR’s Research Data drive – and ONLY in that location – after [REDACTED] has verified that the information from the notes and recordings all match correctly, at which time she will delete her record. The log sheet will only be accessed later if a participant wishes to reverse their agreement to participate or wishes to withdraw some statements they made.

JotForm survey results and anonymized interview notes may be shared as electronic documents among the investigators and kept in study folders on investigators’ Life University computers and the CCR’s Research Data drive. All require username and password for access. Electronic records of the survey results and anonymized interview notes will be kept for an undetermined period of time after the completion of the study.

Although reports mainly will be written in aggregate terms, interviews will produce unique individual responses, which may be quoted, though without identities revealed, nor with sufficient individual description such that the person could be identified.

### **Section F: Benefits & compensation**

- *What direct benefits, if any, are to be gained by the participants? Examples of direct benefits include potential improvements in physical, psychological or emotional health, learning or knowledge benefits, or diagnostic information. If there are no direct benefits to participants, clearly state this.*
- *Will the participant receive any form of compensation? If they will receive money, gift cards, merchandise, services, complimentary health care visits or bloodwork analysis, or other compensation with financial value – describe all payment arrangements (amount of payment or value of other receivable, and the proposed method of disbursement), including reimbursement of expenses. Explain if there will be any partial payment if the subject withdraws prior to completion of the study.*
- *For Life University student participants: If class credit will be given, state the amount. State alternative ways to earn the same amount of credit if those exist.*

The study is not designed to benefit the participants personally, though may ultimately benefit indirectly if the information gathered helps to clarify or organize educational aspects of the program in which they teach. Participants who only complete surveys will be anonymous and will receive no compensation. Those who participate in surveys will be offered a \$5 Starbucks gift card.

**Section G:**

- *What information may accrue to science or society in general as a result of this work?*

There are well over 100 different methods of patient assessment and adjustment within the chiropractic profession. Conceptual models and terminology differ between methods and the overall landscape is confusing. This project will take a step toward consensus-building, at least within Life University.



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 St. Paul MN 55105  
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 www.novelusa.com

# Quotation

|           |         |
|-----------|---------|
| Date      | Quote # |
| 6/13/2022 | 13064   |

## Name / Address

Life University



|        |                 |              |
|--------|-----------------|--------------|
| Terms  | Expiration Date | FOB          |
| Net 30 | 7/13/2022       | Prepay & Add |

| Item # | Description                                                                                                                                                                                                                                | Qty | Unit Price | Total    |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|----------|
|        | MT LOADPAD<br>Single purchase pieces (includes setup and online training)                                                                                                                                                                  |     |            |          |
| L3111  | loadpad MT sensor (rectangle)<br>sensor size: 11 x 5 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 1 coin cell batteries CR2032 | 1   | 4,750.00   | 4,750.00 |
| L3112  | loadpad MT sensor (square)<br>sensor size: 11 x 11 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 2 coin cell batteries CR2016   | 1   | 4,950.00   | 4,950.00 |
| L3113  | loadpad MT sensor (thumb)<br>sensor size: 3.5 x 2.5 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 1 coin cell batteries CR2032  | 1   | 3,250.00   | 3,250.00 |



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# Quotation

Date: 6/13/2022  
Quote #: 13064

## Name / Address

Life University



Terms: Net 30  
Expiration Date: 7/13/2022  
FOB: Prepay & Add

| Item #    | Description                                                                                                                                                                                                                                                                                                                                                                                    | Qty | Unit Price | Total     |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|-----------|
| L3111_2-4 | Additional piece purchases (qty discounts available at other numbers.<br>Contact novel for further details)<br>loadpad MT sensor (rectangle) qty 2-4, price per additional sensor<br>sensor size: 11 x 5 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 1 coin cell batteries CR2032 | 1   | 4,275.00   | 4,275.00  |
| L3112_2-4 | loadpad MT sensor (square) qty 2-4, price per additional sensor<br>sensor size: 11 x 11 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 2 coin cell batteries CR2016                                                                                                                  | 1   | 4,450.00   | 4,450.00  |
| L3113_2-4 | loadpad MT sensor (thumb) qty 2-4, price per additional sensor<br>sensor size: 3.5 x 2.5 cm<br>Contains sensor with electronics<br>iOS App - iPhone/Pad/Pod required (not included)<br>1 capacitive sensor<br>100 Hz measurement rate<br>battery: 1 coin cell batteries CR2032                                                                                                                 | 1   | 2,925.00   | 2,925.00  |
| L3111_5-9 | loadpad MT sensor (rectangle) 5 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                  | 5   | 3,950.00   | 19,750.00 |
| L3111_10+ | loadpad MT sensor (rectangle) 10 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                 | 10  | 3,650.00   | 36,500.00 |
| L3112_5-9 | loadpad MT sensor (square) 5 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                     | 5   | 4,100.00   | 20,500.00 |
| L3112_10+ | loadpad MT sensor (square) 10 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                    | 10  | 3,800.00   | 38,000.00 |
| L3113_5-9 | loadpad MT sensor (thumb) 5 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                      | 5   | 2,700.00   | 13,500.00 |
| L3113_10+ | loadpad MT sensor (thumb) 10 PACKAGE PRICE                                                                                                                                                                                                                                                                                                                                                     | 10  | 2,500.00   | 25,000.00 |

Operating systems for emed, pedar, pliance: Windows 10.

All amounts in US Dollars.

This quotation is valid for thirty days unless otherwise noted.

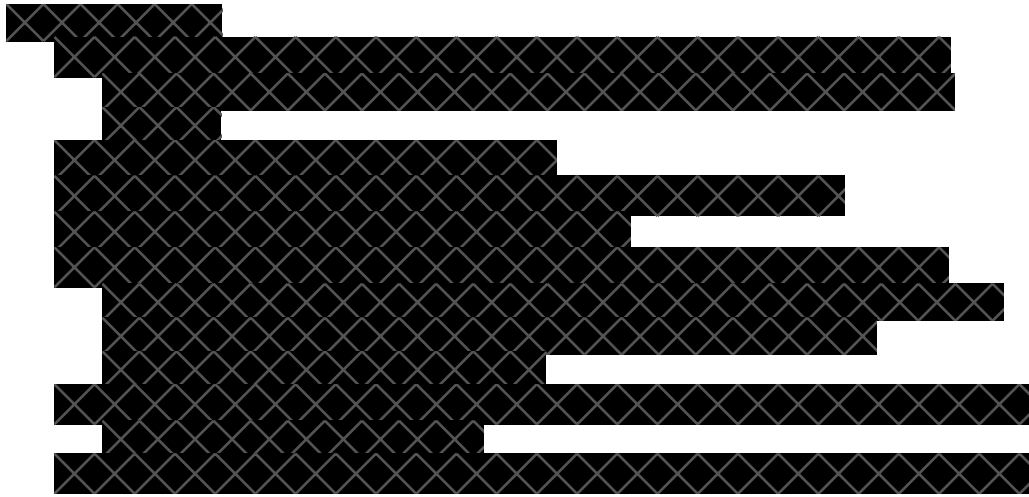
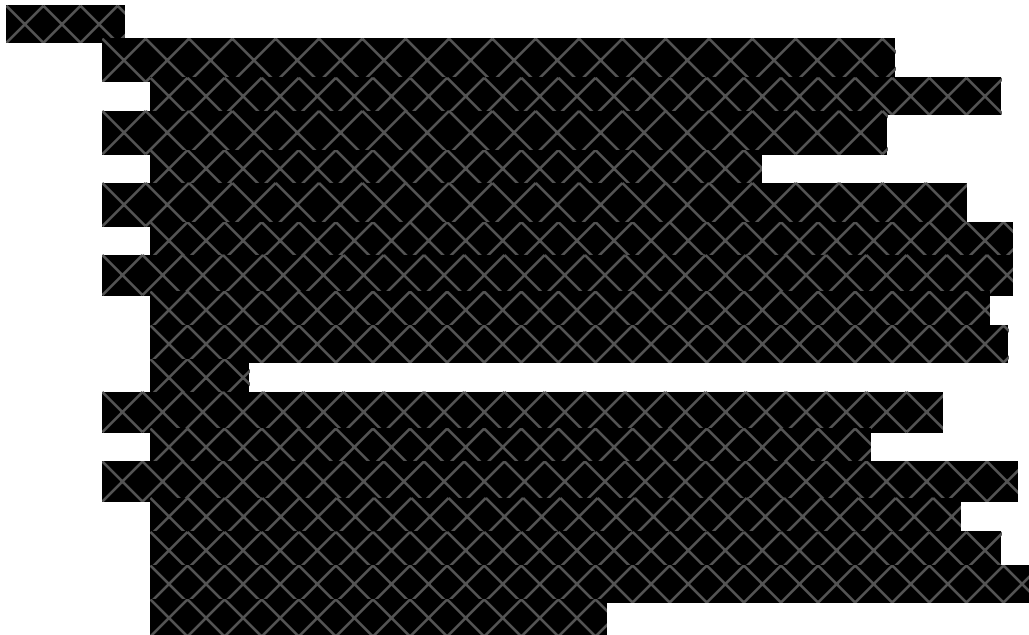
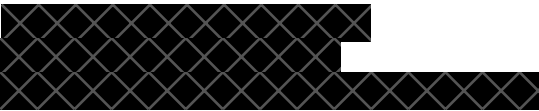
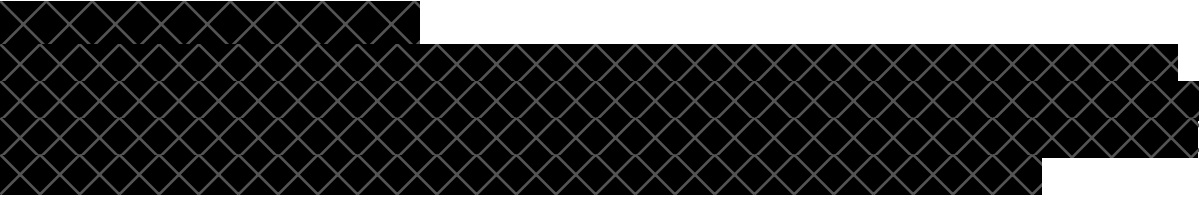
Shipping and handling charges are not included in this quotation unless otherwise noted.

Purchase orders may be emailed to [novelinc@novelusa.com](mailto:novelinc@novelusa.com).

Full payment required upon receipt of invoice.

novel software is delivered with a 30 day license. Upon receipt of full payment at novel inc, the full license is released.

All hardware components come with a 1 year warranty, sensors and insoles have a 6 month warranty unless otherwise noted.







[Redacted text block]

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elopment





IN NO MORE THAN TEN PAGES, PLEASE PROVIDE A DESCRIPTION OF THE FOLLOWING:

A. Project Summary/Abstract: Provide a one-paragraph summary of your project, including details on WHO is involved, WHAT is the research problem/question/hypothesis, WHY it is important knowledge for the field, WHEN in terms of a timeframe of data collection, and HOW in terms of the basic study protocol.

The primary goal of this proposal and request for funding is to develop force profiles of chiropractic adjustive thrusts to extremity joints. No such information exists in the chiropractic published literature Establishment of force profiles in extremity adjusting would enhance student learning and allow students to differentiate the force needed for the appendicular skeleton versus existing data for the axial skeleton (i.e., the extremities vs. the spine.) [REDACTED] [REDACTED] would be collecting data in the lab sections of TECH 3837 and 3838, Upper and Lower Extremity adjusting. In these labs, the performance of adjustment by students, under supervision by licensed DC instructors, is already being utilized. The plan is to pilot recording thrust profiles of two upper and two lower extremity adjustments commonly seen in practice (sternoclavicular, ulna, talus, and cuboid, respectively) over a period of three quarters, and assess the data. The force profiles will help to inform future students and can be used as benchmarks for appropriate thrust and patient safety. After the initial study of force profiles is obtained, and ultimately those findings are published, the instructors will continue to add to the list of joints assessed, establishing parameters for each extremity until all have been assessed.

We propose to use Novel Electronics, Inc. Load Pads to measure force during standard lab activities. (<https://www.novelusa.com/loadpad>) Novel is an established manufacturer, founded in 1978 in Munich, Germany. Among health care researchers, they are perhaps best known for force and pressure-sensing equipment; their website says Novel is focused on, “medical electronics and sensor technology for industrial applications.” These load pads have been used in a study of knee mobilization and lumbar spine mobilization which has some similarities to what we propose. (1-3)



[REDACTED] and the proposed project are a part of the Art of the Adjustment (AotA) research team, of the Dr. Sid E. Williams Center for Chiropractic Research. The Load Pads are versatile, and two additional AotA projects have been proposed to make use of them: (1) forces of adjustment thrusts delivered to a PAT mannequin’s thoracic region would be measured by a Load Pad placed between the thruster’s hand and the mannequin, and compared to the forces measured by our existing table-mounted force platform, which the mannequin lies on top of; (2) forces of adjustment thrusts delivered to a PAT mannequin’s neck would be compared to published literature and between students and doctors performing the thrusts. Neither protocol has been formally developed (and will not, until we have the Novel Load Pads), but the relevant individual procedures have been used in previous studies.

B. Introduction/Background: Provide a description that succinctly contextualizes your project, defines the problem, and demonstrates your knowledge of the topic and what has been done and/or gaps in knowledge/practice around it. Citations should be formatted in the standard of the field related to your project.

Students in the DC program at Life University must perform manipulation of the appendicular and axial skeleton as part of their core curriculum. The examination and treatment of extremity subluxation – that is, mechanical joint misalignment or dysfunction of extraspinal joints such as the shoulders, wrists, or ankles – is an established part of chiropractic practice. [4,5] There is wide agreement that chiropractic students should receive instruction in adjustment (manual manipulation), of the extremity joints. [6] There are a number of studies demonstrating beneficial outcomes following extremity adjustment by chiropractors. [7-15] However, while there are numerous studies of the forces used by chiropractors in adjustment or manipulation of the spine, [for example, 16-22] there have been no studies published of the forces used in extremity joint adjustment.

Traditionally, conveying the correct “feel” for a thrust to an extremity is demonstrated by instructors on students during the course, then the student “patient” gives feedback to their lab partners. This method has been the only teaching tool available, as there are no references or force profiles available in the literature. At issue is that there are no guidelines for students with unskilled hands, who may have a lack of understanding of the differences between forces for the axial skeleton versus the appendicular skeleton.

C. Rationale, Research Question(s)/Problem/Hypothesis, and Goals: If you are proposing a *research* project, describe your research question(s) (and/or, as applicable) testable hypothesis, specific aims or objectives to be addressed and what, specifically, you hope to accomplish.

If you are proposing an innovation, service, or education project, describe your problem or question, specific aims or objectives to be addressed, and what you hope to accomplish.

The primary goal of establishing appendicular skeleton force profiles is to set a benchmark for students inexperienced in delivering an extremity adjustment. While the inability to deliver a sufficient amount of force in a controlled manner may result in no therapeutic benefit, an excessive amount of force may compromise patient safety, with potential for tissue damage, ligament laxity, joint dysfunctions, and compromises to other joints in the kinetic chain. Developing force profiles in the appendicular skeleton provides data that can supplement and improve the delivery of the extremity adjustment by students.

D. Project Design and Methods: This is the heart of the application that describes in greater detail what you will be doing, where the work will take place and why the location is appropriate, who will be involved, and specific outputs for each stage of your research.

For research projects, include a description of the approach/methods you will be using (e.g., qualitative surveys and/or focus groups, participant or site observations, media or discourse

analysis, interviews, quantitative data gathering and analysis, controlled experiments, etc.), the theoretical framework that informs your approach, and how you will adhere to ethical standards (especially if using human subjects).

For innovation, service, or education projects, describe your project design process, planned deliverable(s) (final product), why you have selected this approach and deliverable(s), and how you will adhere to ethical standards (especially if using human subjects).

It should be emphasized that some details of procedures will not be finalized until we have the Novel Load Pads on campus and gain more experience in using them (some members of the AotA team have experience with force-sensing equipment and are available for consultation.) The extremity adjustment investigation will not proceed until all details have been approved by the IRB.

Here is the basic plan: Forces of extremity set-up and adjustment of the sternoclavicular joint and the ulna will be assessed during two lab meetings of TECH 3837, Extra-Spinal Technique 1 (upper extremity adjusting, 8th quarter) Set-up and adjustment of the talus and cuboid bones will be assessed in TECH 3838, Extra-Spinal Technique 2 (lower extremity adjusting, 9th quarter.) Students will be presented with an overview of the project and given the chance to consent to participate or to decline. They will have free choice – no reward will be given for participation, and those who decline will not be penalized. We understand that no students can be required to allow use of their measurements for research purposes and will work with the IRB to develop a proper consent process.

There are established methods for how the instructors demonstrate examination and adjustment of the joints and bony segments, so the research is only concerned with the forces involved. The Load Pads will be placed between the hand of the examining or adjusting instructor or student and the appropriate location on the recipient student. Forces would be assessed during examination (small-to-moderate force input to test motion restrictions of joints). This process is sometimes called “feeling for tension”, and it is possible that recordings may be done with nearly every student. The investigators regard the question "How much force is being used in the pre-thrust set-up?" as a meaningful measurement. For those joints for which an adjustment has been determined to be appropriate, forces would also be assessed during the adjustment.

It is unclear at this time exactly how many instances of examination and adjustment might be recorded. Some students might decline to participate; others might participate multiple times. Observing and recording patterns of participation will be part of the research investigation. Students' force measurements will be a formative classroom activity, and therefore will be tracked by their names during the quarter that their lab is meeting; those records will be maintained by the lab instructor. The principal investigator, [REDACTED] will have a master record, and a copy will be saved to the Center for Chiropractic Research's secure server. Such a record is necessary for tracking students who are recorded more than once. However, their data will be saved anonymously for research purposes, such that participants cannot be identified from the files analyzed by other investigators.

This research is the first of its kind. There will be subsequent projects conducted with the goal of establishing force profiles for all the joints of the appendicular skeleton.

E. Project Timeline: Major activities and tasks with sufficient detail to indicate you have analyzed time and effort and human resource requirements. You can depict the timeline in table format or use bullets.

1. July 2023 through March 2024: Data collection (methods described above), data organization, and initial analysis.
2. April-June 2024: Analyze data for pattern and inter-examiner agreement. Establish benchmarks.
3. Publish and present findings, TBD.

F. Evaluation Plan: Describe how you will assess progress toward achieving your stated objectives or aims (what are your benchmarks and metrics).

At the end of the first quarter, measurements from all instructors and all students will be examined in aggregate, for total number of set-up/examination and for each type of adjustment, and completeness of records. Force levels will be analyzed for mean force, standard deviation (e.g., thrust-to-thrust variability), and range (maximum to minimum.) If any students have received adjustments or examinations of the same area more than once, we will calculate force consistency.

At the end of the second quarter, a comparison will be made to the first quarter data, and at the end of the third quarter, there will be a full analysis in aggregate.

G. Dissemination Plan: Describe the outputs/deliverables (final products) you anticipate producing from this project and how you will disseminate your results (e.g. specific conference/professional gatherings, peer-reviewed publications, YouTube channel, etc.).

The most important use of the results will be to share them in the classroom in conjunction with the student learning outcomes of the course.

If the equipment can be obtained in time for use in summer quarter 2023, the first quarter's results could be ready by the early-September submission deadline for the next Association of Chiropractic Colleges' Research Agenda Conference (ACC-RAC, March 21-24, 2024)

The full set planned, for 3 quarters, may be submitted to the 2025 ACC-RAC; otherwise, it is intended to be submitted to a peer-reviewed journal (likely the Journal of Chiropractic Education, possibly the Journal of Chiropractic Medicine or the Journal of Manipulative and Physiological Therapeutics.)

H. **Anticipated Limitations or Challenges:** Discuss some of the likely obstacles that you might encounter and your plan for overcoming those obstacles should the case arise.

Although the equipment is claimed to be user-friendly, and some members of the AotA team have extensive experience with such equipment, we expect a learning phase. There may be calibration issues that lead to errors, especially likely in the first quarter of data collection, in which case adjustments can be made in the subsequent quarters.

I. **Relevance:** Discuss how the project is relevant to the mission and/or strategic initiatives of Life University, to advancing knowledge/practice in your field and/or across disciplines, and benefits to/potential impact on society more broadly.

From <https://www.life.edu/about-pages/mission-and-values/mission/>

Re an element of the mission statement: “Life University is committed to a global vision and excellence in teaching, learning and research, providing an exceptional student experience...”

The chiropractic adjustment is a force-based health care intervention. Although the adjustment methods being investigated in this proposal are in some cases decades old, the technology needed for accurately assessing the magnitudes of force is relatively new. Our project will add a quantitative aspect to something that has always been taught and practice qualitatively.

This project is part of Art of the Adjustment initiative of the CCR, specifically the Technique Mapping project:

“For the chiropractic profession we need to map trained technique protocols, recording specific location, force, preload, vector, and speed targets to...”

1. Preserve the adjustment profiles of master chiropractors for posterity,
2. Refine the application of the adjustment for improved effectiveness and clinician safety, and,
3. Improve chiropractic training efficiency.”

J. **Funding Request/Budget:** Please provide an itemized breakdown of the cost of all needed resources to undertake the work, including, contract labor/consultants, equipment, materials and supplies, travel, reproduction, etc. In the rare instance you are requesting release time, this must be pre- approved by the Dean and Supervisor.

| <b>Budget Categories</b>     | <b>Year 1</b>                    | <b>Year 2</b>                    | <b>Total</b>                     |
|------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Salaries and Wages           | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |
| Stipends (fixed regular sum) | Click or tap here to enter text. | Click or tap here to enter text. | Click or tap here to enter text. |

|                                   |                                                                                    |                                  |                                  |
|-----------------------------------|------------------------------------------------------------------------------------|----------------------------------|----------------------------------|
| Consultant Fees                   | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| Equipment (>\$5,000)              | Set of 5 L3113 Loadpad MT Sensor3.5 X 2.5 cm Unit price \$2700.00. Total \$13,500. | Click or tap here to enter text. | Click or tap here to enter text. |
| Materials & Supplies              | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| Subscription/Communications       | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| Travel (data collection related*) | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| Postage/Shipping                  | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| Miscellaneous                     | Click or tap here to enter text.                                                   | Click or tap here to enter text. | Click or tap here to enter text. |
| <b>Subtotal</b>                   | <b>13.500.00</b>                                                                   | Click or tap here to enter text. | Click or tap here to enter text. |

- Attach quotes/provide url address for supplies/equipment; justification required for preferred vendor.

<https://www.novelusa.com/>

- K. Budget Narrative: Please explain project costs per category, per year (as applicable):
- Salaries and Wages: List all key personnel (faculty, staff or students) performing work on the project for whom you are requesting funding support. You should provide each person's title on the project, describe the role they will play, and the time and effort expected, i.e., PI at 3- credit overload to oversee study design, IRB protocol approval, recruit participants, ethnographic research, etc.



- Stipends: A fixed, regular sum paid over a term period to a LIFE U faculty, staff or student to support work on the project, i.e., PSY faculty to develop, validate and administer survey instrument or sport health science faculty performing bone density analysis using DEXA imaging.
- Consultant Fees: A fixed sum paid over a term period to none- LIFE U personnel for a specific scope of work, i.e., design and lead focus group sessions or analyze metabolite data using LCMS. A basis should be provided for the fee (including a written quote from the vendor). If available, the consultant(s) should be identified.
- Equipment: With a value equal or greater than \$5,000 per unit. Include written quote or link to url. If a single source vendor is required, provide justification. Detail *why* equipment is needed, its *specific use*, *where* it will be housed, and plans for post-project *maintenance* and *access*.

See attached quote at the bottom of Page 2 for the breakdown of the costs.

The Novel Sensors mobile app is included in the cost. It will be downloaded to existing iPad devices already in place in the classrooms. A representative from Novel will conduct online training for usage of the app and will be available for support.

There are only 2 manufacturers that offer sensors that could be suitable, Novel and Tekscan. Because Tekscan offers some really inexpensive pressure sensors, a few CCR research project used them and the PAT mannequins each have Tekscan sensors. Novel makes clinical grade pressure sensor products that are more user-friendly and likely to be durable. We are not aware of any competing company that supplies a product equivalent to the Load Pads.

Detail why the equipment is needed, its specific use, where it will be housed, and plans for post-project maintenance and access."

- Need and use have been covered in detail in sections A, B, C, and D.
- The equipment will be in a locked cabinet in the Mod 7 A classroom where the Ipad are currently stored. The key is kept in the locked office space and faculty have a key to the office.
- Beyond the initial study for the sternoclavicular, ulna, talus, and cuboid project, four additional extremity joints will be added and data analyzed as described above each until all force profiles for the extremities have been recorded.

- Materials & Supplies: Value less than \$5,000 per unit. Include written quote or link to url. List *name* of item, *cost*, *specific use*, plans for post- project *maintenance* and *access*, if applicable.
- Travel (data collection-related): List project staff traveling, destination/event, and mode of transportation and estimated cost. Non- LIFE U faculty, staff or students *are not eligible* for travel support. \*Note: Funded Projects covers travel for data collection-related purposes; it does *not* cover travel expenses for conference presentations or publication (these are covered by CETL Professional Development Grants).
- Postage, Shipping, Duplication: Detail as applicable.
- Miscellaneous/Other: List other project costs not captured on previously referenced cost categories. This might be participant support costs such as gas/bus cards, food for after- hour focus groups or extended meetings, etc. All costs must be detailed and justified.

L. Additional Funding Sources: Please note whether applications for funding are being provided to/or have been approved by any other agencies or organizations and provide detail of those requests/awards.

None

M. List of Bibliographic References (in the style appropriate to your field of study). (This information is not included in the page limit)

1. Anderson D, Allen C, Lester M, Deyle G,. Real-Time Feedback is an Effective Adjunct to Instructor Feedback while Teaching Joint Mobilizations to the Knee [conference abstract]. Proceedings of the American Academy of Orthopaedic Manual Physical Therapists, 2018. p. 65. Available at: <https://files.taylorandfrancis.com/2018-AAOMPT-conference-abstracts.pdf>
2. Evan J. Petersen, Stephanie M. Thurmond , Catherine A. Shaw , Kelly N. Miller , Tommy W. Lee & Jonathan A. Koborsi (2020): Reliability and accuracy of an expert physical therapist as a reference standard for a manual therapy joint mobilization trial, *Journal of Manual & Manipulative Therapy*, DOI: 10.1080/10669817.2020.1844853
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5. Himelfarb I, Hyland JK, Ouzts NE, Russell M, Sterling T, Johnson C, et al. Practice Analysis of Chiropractic 2020. Greeley, Colorado: National Board of Chiropractic Examiners. P. 100.
6. Gleberzon BJ, Cooperstein R, Good C, Roecker C, Blum C. Developing a standardized curriculum for teaching chiropractic technique. *J Chiropr Educ.* 2021;35(2):249-257.
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10. Brantingham JW, Cassa TK. Manipulative and Multimodal Therapies in the Treatment of Osteoarthritis of the Great Toe: A Case Series. *J Chiropr Med.* 2015;14(4):270-8.
11. Capes M, Russell BS, Oz M, Hosek RS. Kinetic gait assessment before and after chiropractic lower extremity adjustments [conference abstract]. *J Chiropr Educ.* 2016; 30(1): 54.
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13. Lawrence MA, Raymond JT, Look AE, Woodard NM, Schicker CM, Swanson BT. Effects of Tibiofibular and Ankle Joint Manipulation on Hip Strength and Muscle Activation. *J Manipulative Physiol Ther.* 2020;43(5):406-417.

14. Malaya CA, Haworth J, Pohlman KA, Smith DL. Immediate impact of extremity manipulation on dual task performance: a randomized, crossover clinical trial. *Chiropr Man Therap.* 2021;29(1):6.
15. Schueren S, Hunger H, Pham H, Smith DL, Layne C, Malaya CA. Immediate effect of lower extremity joint manipulation on a lower extremity somatosensory illusion: a randomized, controlled crossover clinical pilot study. *Front Hum Neurosci.* 2022 Nov 8;16:1011997.
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