NINDS Clinical Trials Methodology Course (CTMC)
Syllabus and Expectations 2022

The Clinical Trials Methodology Course (CTMC) is composed of several phases. The first phase involves distance learning in small groups and webinars in the Spring. This is followed by a Virtual Intensive/Residential Experience during the Summer - July. The third phase, which takes place in the Fall, is composed of additional small groups and a mock study section. We do some work developing an idea (proposal), then we fill out relevant sections of a scientific protocol to specify what the clinical trial is and how it will be conducted. Finally, you put things back together with a research proposal (grant). The grant will not have all the details of the protocol. The course faculty will invest time in your project; therefore, your participation in ALL aspects of the course, including the residential course, is required to ensure your success. The goal of the CTMC is to assist trainees in the design of practical and successful clinical trials. The first step is to help you clearly define your experimental intervention and general background and objectives for your study. The next is to create a protocol which accurately describes a reproducible clinical research study, and a proposal which effectively provides the background scientific justification and summarizes the approach. The ultimate goal of a proposal is to gain the funding that will be necessary to conduct your protocol. Incorporating well-defined details into the protocol will make proposal development a much smoother process and make implementing the project (if funded) considerably easier. The CTMC is supported by the following grant: *DCC Grant Number U01 NS077352.* The following institutions administer CTMC: University of Michigan, the University of Iowa, the University of Indiana, and Los Angeles Biomed. Additional support is provided by the American Academy of Neurology.

Ethics:
All faculty and trainees will consider the projects as confidential and the intellectual property of the developer. Similar to peer review of a grant or paper, the use of any material or idea presented by the trainees is prohibited without written permission. Please report any concerns to the course leadership. Misconduct may be reported to the involved institution(s) and/or the Office of Inspector General, Department of Health and Human Services.

Publications:
Please remember to acknowledge the support of NeuroNEXT DCC Grant Number U01 NS077352 in publications or clinical trials developed from your work in the course. Each publication, press release, or other document about research supported by an NIH award must include an acknowledgment of NIH award support and a disclaimer such as, *"Research reported in this publication was supported by the National Institute of Neurological Disorders and Stroke of the National Institutes of Health under Award Number R25NS088248 and the NeuroNEXT DCC Grant Number U01 NS077352. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health."*

Contents

Teleconferencing and File-sharing Software

Zoom – cloud-based meeting platform used for small group meetings, webinars, the Virtual Intensive Course, and the Mock Study Section in the fall. We strongly encourage each participant and faculty member to use a webcam within the virtual conference rooms. Appointments will be added to your calendar. An app is available for tablets or smartphones. Your default should be to use a computer and webcam. You can also use phone or tablet apps, with camera. If you must use a telephone, call in information can be found in appointments. Do not use a telephone AND computer audio (this causes feedback).

MS Teams – document sharing service. Links will be provided to any readings assigned during the course. You will each have a folder (labeled with your last name) within your small group channel, and you will be expected to upload all your documents in it. Your faculty members will provide feedback directly within the documents (assuming that they are submitted with enough lead time prior to the respective meeting). We will also store recordings of meetings here. Please check your junk mail folder if you have not received an invitation. Also, whenever possible please upload word processor documents (either .doc, .docx, or .rtf) so that the faculty can provide comments directly in your documents for you. MS Teams allows you to restore old versions of files as necessary. You may want to consider creating an additional subfolder for older documents, and perhaps subfolders for references if you think your faculty would find that helpful.

Course Text, Resources/Examples, and Website

Course Recommended Text: We encourage you to purchase *Clinical Trials in Neurology: Design, Conduct, Analysis* (Ravina et al, 2012). Please follow the link to selected chapters from the text which are available in MS Teams: Ravina et. al. 2012. Clinical Trials in Neurology: Design, Conduct, Analysis. Selected Chapters

Grant Example Materials: The links below connect to multiple grant-related resources as well as examples

- ❑ REACHOUT – an ongoing R01 single site trial:
    - R01 Summary statement:
        - REACH OUT R01 Grant Summary Statement
        - The grant was submitted (and subsequently funded in this format)
    - R34 Summary statement:
        - The grant was submitted twice in this format and was not funded either time
        - REACHOUT R34 Grant Summary Statement First Submission
        - REACHOUT R34 Grant Summary Statement Second Submission
- ❑ ICECAP – an ongoing R01 multi-site trial:
    - R01 Summary statement:
        - ICECAP R01 Summary Statement
    - R01 Grant Submissions:
        - ICECAP R01 Grant Application First Submission
        - ICECAP R01 Grant Application Second Submission
- ❑ *"Hair Extensions": Using Hair Levels to Interpret Adherence, Effectiveness, and Pharmacokinetics with Real-World Oral PrEP, the Vaginal Ring, and Injectables.* Gandhi, Monica – a R01 application summary statement example
    - Hair Extensions R01 Application Summary Statement
    - Originally posted by the NIH National Institute of Allergy and Infectious Disease on the "NIH Sample Applications and More" page: NIH "Sample Applications and More"
    - Please note that the full application and other examples are available on said page
    - Please see section 4.2.1 "Session 10: Research Strategy/Research Plan" for a full discussion of the features/caveats of this example and the website overall with respect to the Clinical Trials Methodology Course
- ❑ Course website: http://neurotrials.training

Evaluation Surveys

We will send various surveys via Qualtrics and REDCap. Some surveys will be focused on your progress throughout and after the course (e.g., about your professional accomplishments). Surveys will include:

- ❑ Small group evaluations
- ❑ Webinar evaluations
- ❑ Intense Portion Course evaluations
- ❑ Outcome Assessments (what has happened to you and your project **after** the course) – these will come from REDCAP

Course Stages and Task List

Stage 1: Baseline

1.1 Baseline Tasks:

- ❑ Review 2022 Syllabus and Expectations document
- ❑ Attend first webinar, Designing Meaningful Early Phase Clinical Trials, from 12:00 – 2:00pm ET. 1:30-2:00 will be dedicated to 2022 cohort orientation.
- ❑ Review instructions for MS Teams and practice logging in
- ❑ Read and review the NINDS Transparency in Reporting Guideline: Improving the Quality of NINDS-Supported Preclinical and Clinical Research through Rigorous Study Design and Transparent Reporting

Stage 2: Spring/Summer 2022

2.1 Spring/Summer Webinar Series:

Unless otherwise specified webinars will generally be held on Fridays at 12:00 PM EDT

Zoom: please use a computer with webcam, or the app if possible. If you must use a phone call in numbers can be found on the invitation. DO NOT CALL AND USE COMPUTER AUDIO SIMULTANEOUSLY.

Logistics:

- ❑ Real-time attendance at and participation in the webinar series is strongly recommended
- ❑ Recordings will be posted to the course website https://siren.network/training/ctmc/ctmc-webinars and the course YouTube channel for those who cannot attend in real time
- ❑ Please EVALUATE each webinar as we use the feedback to improve them and incorporate helpful suggestions: https://umichumhs.qualtrics.com/jfe/form/SV_bBGz37dAyXpSS1g

2022 Spring/Summer Webinar Schedule:

- ❑ **January 21:** CTMC Q & A – Course Directors
- ❑ **April 22:** Designing Meaningful Early Phase Clinical Trials *2 hours – Course Directors
- ❑ **May 13**: Specific Aims - Presented by Jordan Elm, PhD and Robert Silbergleit, MD
- ❑ **May 27**: Open Forum Q&A – Course Directors
- ❑ **June 10**: What to Know About Sample Size - Presented by Sharon Yeatts, PhD
- ❑ **June 24**: NINDS Health Disparities & Global Health Agenda / Common Data Elements - Presented by Carolina Mendoza-Puccini, MD & Richard Benson, MD, PhD
- ❑ **July 8**: Open forum Q&A & Pre Residential Course Information – Course Directors and TBD

AMA Credit Designation Statement:

The American Academy of Neurology Institute designates this enduring material for a maximum of 8 *AMA PRA Category 1 Credit(s)™.* Each webinar is eligible for up to 1 *AMA PRA Category 1 Credit(s)™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Accreditation Statement:

This activity has been planned and implemented in accordance with the accreditation requirements of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American Academy of Neurology Institute, the University of Iowa, Los Angeles BioMed, and the University of Michigan. The American Academy of Neurology Institute is accredited by the ACCME to provide Continuing Medical Education (CME) for physicians. In order to obtain CME credits, you must do both of the following:

- ❑ complete an evaluation form (a link to the evaluation form will be provided during the webinar)
- ❑ provide your name and email address.

2.2 Office Hours

Office hours *generally* occur on the 1st and 3rd Friday of the month (on the opposite Fridays of the webinars.) Office hours are open times where executive committee members and core faculty are available to answer questions related to protocol development, small group assignments, webinar topics, or other general topics.
Schedule: 5/6, 5/20, 6/3, 6/17, 7/1, 7/15
Zoom link: https://umich.zoom.us/j/93774995449?pwd=WkZFYUg0UHEydm5hOUlBR0R3dzlxdz09

2.3 Spring Small Group Sessions:

- ❑ **Objectives, Logistics, Leadership:**
  - Objective: The goal of the small group sessions is protocol and proposal development
  - Logistics:
    - There are twelve sessions in total for the course year
    - Course participants are expected to attend every session
    - All of them will take place before the Summer Intensive Portion (please see below).
    - Each session will be 60 minutes long
    - All sessions will be conducted via Zoom video teleconference
    - Each small group has the login information in their calendar invites
  - Leadership: Each small group will have three leaders that play an unique role though they will also collaborate with one another:
    - A clinical core faulty member
    - A biostatistical core faculty member
    - A biostatistician.
- ❑ **Faculty assignment and obtaining feedback:**
  - Each trainee will be primarily assigned to one of the group core faculty members who will be responsible for primary feedback on submissions
  - Each of the core faculty members within their respective groups will be familiar with all of the projects in that group
- ❑ **Transcription/Taking group meeting notes:**
  - It can be VERY productive to assign a note taker for each session
  - Assignment Recommendations – two options:
    - The core faculty leader takes real-time notes when the other faculty and trainees are providing feedback
    - The trainees assign yourselves to take notes for the specific projects – e.g., one person per project:
      - Said notes can be emailed or added to a running document in MS Teams
      - The running document format may be more helpful as it provides a timeline and recording of both thoughts and overall progress
  - Small Group Recommendations:
    - It is recommended that each small group session be recorded for note-taking/internal review purposes only
    - If that is to be done, everyone in the small group must agree to being recorded before starting.
    - Course faculty logged in as "moderators" can record the meeting
  - Caveat:
    - Please note that we are working on having both auto-record and auto-generated transcription features available
    - However, technology does have its limitations and therefore agreeing on a back-up method to insure both recording and transcription is recommended

2.3.1 Session 1: Introduction and Defining Clinical Question

- ❑ **Scheduling tips:**
  - Please leave time to discuss which weeks you will be holding sessions
  - Course participants are expected to attend all twelve small group sessions for the year:
    - Nine sessions in the Spring semester
    - Three sessions in the Fall semester
  - If both faculty members are unavailable for a given week it should likely be cancelled
  - Arrangements and scheduling potentially can be covered by email prior to the first session
  - You can contact the general CTMC contact group (NINDS-CTMC-Info@umich.edu) to take any dates you won't be using off your calendars.
- ❑ **Assignments: Specific Aims; Project Information Form; Brief Presentation**
  - Written documents:
    - Structure/Foci:
      - Please submit the following:
        - A draft of your "Specific Aims" page - please focus primarily on the objectives of your research
        - Your completed "Project Information Form" - note that you may have already completed said form as part of your application
        - Here is the link to the form: CTMC 2022 Project Information Form
    - Guidelines:
      - The documents are due as soon as possible and should be uploaded to MS Teams.
      - The deadline for both written assignments is ***no later than 48 hours prior to the first session***. This will allow faculty to both review and offer preliminary feedback
      - Formatting:
        - Word processing document file format is preferred
        - Examples include *.doc, *.docx, etc.
        - This will allow faculty to directly comment within document, offer feedback, etc
        - *.pdf file format is acceptable if no other option is available:
          - Faculty may find it more challenging to comment as effectively
          - Please be aware of the limitations before submission
  - Introduction Presentation:
    - Structure/foci:
      - Please design a 5-minute clinical presentation of your project idea
      - Assume that your audience will not know anything specific about the disease that you are addressing with your project
      - This presentation should focus on your clinical trial and its significance
      - Please use the aforementioned project information form as a guideline to structure your presentation and highlight high yield topics such as:
        - Disease
        - Phenotype
        - Preclinical justification
      - Please include discussion regarding:
        - Scientific premise
        - Rigor of prior research
        - Rigor of preclinical data
    - Guidelines:
      - Each trainee will present (with 5 minutes of feedback from faculty) during the first session
      - The presentation should be 5 minutes long

- Do NOT use slides
- You should talk into your webcam

2.3.2 Session 2: Select Objectives > Define Endpoints > Rethink If Necessary

- ❑ **Reading:**
  - Review Chapter 7 in Ravina (course text)
  - Chapter Link: Chapter 7: Selecting Outcome Measures
- ❑ **Assignment: Revise Specific Aims page**
  - Structure/Foci:
    - Please revise your "Specific Aims" Page
    - Someone reading your specific aims page should be able to understand your main outcome measure
  - Guidelines:
    - Turn in revised specific aims page in 48 hours PRIOR to session 2 by uploading the assignment in MS Teams folder
    - Core faculty will provide feedback on submitted outcome measures in one of two ways:
      - within specific aims page
      - as a supplement with additional information on the outcome measurements) during session 2 (10 minutes each)

2.3.3 Session 3: Overall Trial Concept (Design Overview/Selection/Structure/Initial Feasibility – Ballpark Sample Size/Schedule of Assessments)

- ❑ **Readings:**
  - Review Chapters 2 and 4 in Ravina (course text)
  - Chapter 2 Link: Chapter 2: The Sequence of Clinical Development
  - Chapter 4 Link: Chapter 4: Fundamental of Biostatistics
- ❑ **General Assignment: Protocol drafting - "Significance" Section**
  - Structure/Foci:
    - Prepare a 1-3-page "Significance" section for a grant (involving your clinical trial idea).
    - ***The overall goal is to let the reader understand why your project is significant***
    - For example:
      - Does your project address an unmet need?
      - Is the study question that you are asking novel?
      - Does your study question address an important disorder/disease/problem?
      - Why is it relevant to the clinical environment?
  - Guidelines:
    - Include references
    - Upload document to MS Teams at least 48 hours PRIOR to session 3
    - Core faculty will provide feedback on concept document during session 3 (10 minutes each)
- ❑ **Biostatistics trainees (if applicable for small group):** please upload a list of questions about each study concept to the appropriate MS Teams folder of each clinical trial.

2.3.4 Session 4: Sections of Protocol (Patient Population Inclusion/Exclusion)

- ❑ **Reading:**
  - Review Chapter 27 in Ravina (course text)
  - Chapter Link: Chapter 27: Clinical Trial Planning - An Academic and Industry Perspective
- ❑ **Assignment: Protocol Drafting – multiple sections**
  - Structure/Foci:
    - Download the NIH Trial Template here: NIH-FDA Phase 2 and 3 IND/IDE Clinical Trial Protocol

Template
        - Start building the relevant parts of your trial protocol
        - Please draft and submit the following sections:
            - Section 1: Overview
            - Section 2: Introduction. Please note that this should be derived from your "Significance" section
            - Section 3: Objectives and Endpoints
    - Guidelines:
        - Please upload to MS Teams no later than 48 hours before first protocol session so that core faculty can review

2.3.5 Session 5: Treatment Allocation and Interventions

- ❑ **General Readings: n/a**
- ❑ **General Assignments: Protocol revision; Protocol drafting – multiple sections**
    - Structure/Foci:
        - Protocol Revision: Revise sections 1-3 of protocol based on feedback from first session:
            - Section 1: Overview
            - Section 2: Introduction
            - Section 3: Objectives and Endpoints
        - Protocol Drafting Continuation. Please draft and submit the following sections:
            - Section 4: Study Design
            - Section 5: Study Population
            - Section 6: Study Intervention
- ❑ **Biostatistics trainees (if applicable for small group):**
    - **Readings:**
        - Review JAMA article on Statistical Analysis Plans: Guidelines for the Content of Statistical Analysis Plans in Clinical Trials
        - Review CTMC Statistical Analysis Plan (SAP) Template: CMTC 2022 Statistical Analysis Plan Template
    - **Assignments: Drafting Statistical Analysis Plans**
        - Structure/Foci:
            - Please draft and submit a SAP for each project
            - This can be a fairly high-level outline
            - Ideally, it can be produced from material presented already by the clinical trainees
            - Depending on clinical project progress this may be delayed for some protocols
        - Guidelines:
            - Core faculty will provide feedback on submitted protocol shell during session 5 (10 minutes each)

2.3.6 Session 6: Measurements, Primary Endpoints, Secondary Endpoints, and Data Management

- ❑ **Readings: n/a**
- ❑ **General Assignments: Protocol revision – multiple sections; Continued protocol drafting – multiple sections**
    - Structure/Foci:
        - Revise sections 1 - 6 of protocol based on feedback from second session:
            - Section 1: Overview
            - Section 2: Introduction
            - Section 3: Objectives and Endpoints
            - Section 4: Study Design

        - Section 5: Study Population
        - Section 6: Study Intervention
    - Protocol Drafting Continuation. Please draft and submit the following protocol sections:
        - Section 7: Assessments (other than adverse events)
        - Section 8: Statistical Analysis Plan (SAP)
- ❑ **Biostatistics trainees (if applicable for the group):**
    - **Assignment: Statistical Analysis Plan revision**
        - Please revise and submit a SAP for each project based on feedback
        - Ideally, this will happen prior to the session
        - If upload occurs prior to session SAP can potentially be reconciled with the protocol text for this area

2.3.7 Session 7: Adverse Event and Data and Safety Monitoring and Interim Analyses - which will be tracked and which are SAEs

- ❑ **Readings: n/a**
- ❑ **Assignments: Protocol revision – multiple sections; Protocol drafting continuation – Section 9**
    - Revise sections 7 and 8 of protocol based on feedback from prior session:
        - Section 7: Assessments
        - Section 8: Statistical Analysis Plan
    - Please draft and submit the following. Section 9: Adverse Events

2.3.8 Session 8: Final Statistical Analysis Strategy – Sample Size Detailed, Primary Analysis, Secondary Endpoints, Exploratory Analyses

- ❑ **Readings: n/a**
- ❑ **Assignments: Protocol revision; Power calculations**
    - Revise section 9 (Adverse Events) of protocol based on feedback from prior session
    - Prepare range of power over a range of sample sizes

2.3.9 Session 9: Budget

(Please note that some small groups may not be able to schedule a 9th session or may need to use 9th session on additional protocol development).

- ❑ **Readings:**
  - Review the following article: Developing an Investigator Site Budget for Clinical Trials
  - Review the following presentation and look at the schema examples: UNC Chapel Hill 3rd Annual Symposium for Research Administrators: Budgeting for Proposals
- ❑ **Assignments: Draft budget; Personnel Justification draft**
  - Please prepare the following:
    - Draft Budget
    - Personnel Justification Draft. (Consider getting an example from your mentor and/or your departmental research administrator)
  - Guidelines:
    - Please complete prior to Virtual Intensive Course
    - Submit draft budget to core faculty members at least 48 hours PRIOR to session 7 or Virtual Intensive Course
    - As with prior assignments, please upload to MS Teams

2.3.10 Full Protocol Draft:

We recognize that not all elements of the design, sample size, and statistical analysis plan will be worked out after the small group sessions. It is important to attempt to fill out as much of a complete protocol template as possible. **It is preferrable that you have content in each section – even if incomplete – than to have missing sections.** This will make it feasible for you to revise and finalize this document while you attend the Virtual Intensive course.

NOTE: Some elements of the protocol template may not apply (or may not seem to apply) for early phase trials so please mark sections as *not applicable*. These sections will be deleted when you finalize the protocol.

- ❑ **Assignment: Full protocol submission**
  - Structure/Foci:
    - Prepare first complete draft of your clinical trial protocol.
    - Please include all sections to date (if possible):
      - Section 1: Overview
      - Section 2: Introduction
      - Section 3: Objectives and Endpoints
      - Section 4: Study Design
      - Section 5: Study Population
      - Section 6: Study Intervention
      - Section 7: Assessments
      - Section 8: Statistical Analysis Plan
      - Section 9: Adverse Events
  - Guidelines: As with prior assignments submit draft protocol to core faculty members by uploading to MS Teams no later than 48 hours prior to session

Stage 3: Summer Residential Course 2022

3.1 Didactics:

Overview:

- ❑ A variety of course lectures and other activities will occur during the summer virtual intensive course
- ❑ A complete agenda will be provided closer to the residential course
- ❑ Attendance at all lectures is required unless specified otherwise
- ❑ Readings will be assigned by lecturers from the residential course
- ❑ A reading list will be provided in MS Teams

General Schedule:

- ❑ Dates: Monday July 18th - Thursday July 21st, 2022
- ❑ Hours:
  - Monday July 18th, 2022: 4:00 pm – 8:00 pm
  - Tuesday July 19th, 2022: 8:00 am – 6:00 pm
  - Wednesday July 20th, 2022: 8:00 am – 6:00 pm
  - Thursday July 21st, 2022: 8:00 am – 2:00 pm
  - **Full schedule to be provided prior to course**

Stage 4: Fall 2022

4.1 Fall Webinar Series:

Unless otherwise specified webinars will generally be held on Fridays at 12PM ET

Fall Webinar Schedule:

- ❑ **September 9**: From Statistical Significance to Clinical Significance: Time to Dethrone or get rid of Significance? - Presented by Lehana Thabane, PhD
- ❑ **October 7th**: Ethical Issues in Acute and Chronic Neurological Conditions - Presented by Michael Linke, PhD
- ❑ **November 4**: What will the CTMC look like in 2023? - Presented by Course Directors

4.2 Fall Small Groups Sessions:

- ❑ **Goals of Fall Small Groups Sessions:**
  - Overall goal: to work towards getting a full version of a proposal that includes:
    - Specific Aims page
    - 6 to 12-page grant depending on funding mechanism
  - Continued protocol development
  - Continued proposal development
- ❑ **Logistics:**
  - There will be three Fall semester sessions in total as aforementioned
  - Course participants are expected to attend every session
  - Each session will be 90 minutes long
  - Each session will occur via Zoom teleconference - please see aforementioned recommendations for recording meetings/taking notes

4.2.1 Session 10 and 11: Research Strategy/Research Plan – Major First Draft of Research Proposal and Specific Aims Page due

- ❑ **Assignment: Research/Strategy Plan drafting – multiple sections**
  - Structure/Foci:
    - Prepare a draft of the research strategy/research plan appropriate to the proposed grant mechanism. Please prepare the following sections:

- "Innovation"
- "Approach"

- The following should have already been completed:
  - "Specific aims"
  - "Background/significance"
- The research plan has several inherent objectives and should be accessible to two general audiences:
  - The plan's objectives:
    - To clearly and succinctly describe the proposed research
    - To state its significance
    - To delineate how it will be conducted
  - Audiences include:
    - Those who will probably not be familiar with neither your field nor your techniques – this subset will constitute *the majority* of reviewers
    - Those who will be familiar with your field and/or your techniques – this subset will be a smaller group than the aforementioned

- Guidelines: Submit research strategy/research plan to core faculty members at least 48 hours PRIOR to session 8 by uploading the assignment in MS Teams

❑ **Research Plan Drafting Resources:**

- Grant Example Materials: As aforementioned, the links below connect to multiple grant-related resources and examples
  - REACHOUT – an ongoing R01 single site trial:
    - R01 Summary statement:
      - REACH OUT R01 Grant Summary Statement
      - The grant was submitted (and subsequently funded in this format)
    - R34 Summary statement:
      - The grant was submitted twice in this format and was not funded either time
      - REACHOUT R34 Grant Summary Statement First Submission
      - REACHOUT R34 Grant Summary Statement Second Submission
  - ICECAP – an ongoing R01 multi-site trial:
    - R01 Summary statement:
      - ICECAP R01 Summary Statement
    - R01 Grant Submissions:
      - ICECAP R01 Grant Application First Submission
      - ICECAP R01 Grant Application Second Submission
  - *"Hair Extensions": Using Hair Levels to Interpret Adherence, Effectiveness, and Pharmacokinetics with Real-World Oral PrEP, the Vaginal Ring, and Injectables.* Gandhi, Monica – a R01 application summary statement example
    - Hair Extensions R01 Application Summary Statement
    - Originally posted by the NIH National Institute of Allergy and Infectious Diseases on the NIH "Sample Applications and More" page as stated above
- NIH websites:
  - Authorship:
    - The overall website is the "NIH Grants & Funding: NIH Central Resource for Grants and Funding Information" online resource database
    - The webpages are specifically authored by the National Institute of Allergy and Infectious Diseases
  - Resources:
    - "Write Your Application" page: Research Plan Drafting Resources: NIH "Write Your

Application" page

- "Write Your Research Plan" page: Research Plan Drafting Resources: NIH "Write Your Research Plan" page
- "Sample Applications and More" page: Research Plan Drafting Resources: NIH "Sample Applications and More" Page

- Features:
  - Provides good overview of how to write scientifically
  - Gives good information on how to write a grant that meets the current NIH requirements
  - Focuses and explains well how to communicate clearly
- Caveats:
  - Almost all of the examples are either preclinical or translational (and therefore not as useful for a strictly clinical focus)
  - The "Hair Extensions" example (as aforementioned in "Course Text, Resources/Examples, and Website" section of the syllabus) has its limitations as well:
    - It is a non-neurological disease versus the diseases addressed in this course
    - It has a completely different design than the approach of this course
  - *The major takeaway from all of these resources is that although the page content and example do not match a clinical trial R01 grant application in a 1:1 sense, the principles that they review, the writing style, and most importantly the structured approach are applicable to any well-written grant application proposal that falls within the purview of the Clinical Trials Methodology Course.*

4.2.3 Session 12: Wrap Up and Finalize Proposal (Additional Sections as Completed – Human Subjects, etc.):

❑ **Goal:** to wrap up and discuss any loose ends and plans for submission of grant/implementation of trial.

4.2.4 Proposal Submission:

❑ **Assignments: Complete Draft Proposal Submission; Participate in Mock Study Session; Complete Small Group Evaluation**

- Draft Proposal Submission:
  - A complete draft of your proposal revised based on feedback from above small groups and other iterative feedback is **due by October 17, 2022**
  - However, small groups completing proposals substantially earlier than this may be able to have study sections accelerated
  - General Submission guidelines and tips:
    - ***You should NOT submit your protocol as a research plan as the structure of a grant proposal research plan is different from a protocol***
    - *You **SHOULD** include all required elements of your grant proposal. However, the following sections are essential. Again, if they are not all present and completed in the submitted proposal, it will not be accepted:*
      - Biosketches
      - Budget
      - Human subjects' protection
      - Research plan
      - Specific aims
      - Facilities and resources
      - Clinical trials sections Form F
      - Inclusion of children, etc.
  - Alternative Submission guidelines and tips:
    - Alternative Mechanism to NIH:

        - If you are using a mechanism such as Foundation or AHA, you may include a cover letter
        - Please make sure said cover letter contains the following:
            - the mechanism
            - the required elements
    - Submitting a Career Development Award (CDA):
        - Points to remember:
            - The course is focusing on the clinical trial design
            - Therefore, the strength will be on giving you feedback on your experimental design
        - Including a complete proposal for a CDA:
            - If doing so, we ask that you highlight in yellow all the non-clinical trials material in the proposal
            - The faculty will comment on those areas if able, but will primarily focus on design aspects
            - You may include your protocol as an appendix
- Mock Study Section Documents Submission:
    - *Proposals without required elements will not be included in the Mock Study Section*
    - Turn in all documents for review in the Mock Study Section by uploading the assignment in the submission portal
    - Provide times available for Mock Study Sections
    - A link to the submission portal will be provided in the future
- Small Group Evaluation: complete Evaluations of Small Groups

4.3 Mock Study Section:

DATES TO BE ANNOUNCED FOR FIRST WEEK OF NOVEMBER

- ❑ **Assignment: Mock Study Section**
  - Structure/Foci:
    - Please make sure to complete and include the following required appendices' contents:
      - Consent form
      - Screening and Recruitment plan
      - Safety Monitoring and Adverse Event Reporting Plan (if not addressed in protocol)
  - Guidelines:
    - Trainees will be expected to turn in a protocol and proposal for inclusion in the Mock Study Section
    - Trainees will be expected to review 1-2 proposals during the mock study section
- ❑ **Logistics:**
  - Recording: The session will be recorded for later review by the trainees
  - Attendance/participation:
    - Trainees will be permitted to attend sessions and observe
    - Trainees will generally be asked to speak only if directly called upon
- ❑ **Feedback:** Written feedback from the reviewers will be provided following the mock study section

Stage 5: Beyond

5.1 Reunion at American Academy of Neurology Annual Meeting (Spring 2023):

- ❑ Trainees from the current and previous cohorts are invited to join the annual AAN-NINDS/CTMC Meeting and Reception at the AAN Annual Meeting
- ❑ **Alumni updates:**
  - If you are unable to attend the reception, you will be asked to prepare an abbreviated single slide update to be shared at the reception
  - If you are able to attend the reception in person, you will be asked to prepare and present a 2-slide update of your project