The Mentored Scholarly Activity – Scholarship for Life-Long Learning

The School of Medicine’s curriculum includes a four year longitudinal course requirement for all students to pursue and complete a mentored scholarly project. The MSA project culminates with a capstone presentation prior to graduation. The MSA project is aimed at fostering self-directed, life-long learning. Students will do an in-depth scholarly project in an academic area of interest related to medicine or health care with the mentorship of a faculty member. MSA requirements can also be satisfied through the successful completion of the MSTP program or the School of Medicine Research Track.

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Goals:
• Demonstrate ability to formulate a specific problem statement, question, hypothesis or aim.
• Demonstrate ability to work effectively with a mentor.
• Demonstrate ability to critically review and analyze literature on an important scholarly topic.
• Demonstrate ability to prepare a scholarly project with appropriate methods and develop a plan to complete the project.
• Demonstrate ability to synthesize and present results of a scholarly project.
• Demonstrate progress through the Phases and display independence and collaboration.
Learning Objectives:
• Present work in progress (WIP) to peers and faculty in an oral presentation.
• Effectively respond to comments and questions from peers and faculty about your scholarly work.
• Demonstrate effective interaction with the mentor on the scholarly project.

Thematic Areas: To best support students, we have defined five thematic areas of scholarship.
• **Laboratory (Basic) Science** – Fundamental scientific discovery through laboratory research
• **Bioethics, Humanities, Arts & Education** – the human side of medicine including ethics, law, literature, art, history, education.
• **Clinical Science** – Patient centered research - clinical investigation and trials, translational research, behavioral research, and drug development.
• **Global Health** - Understanding and applying public health and clinical decision making in low resource settings with vulnerable populations. (Please note special requirements for travel abroad).
• **Public Health & Epidemiology** – populations as patients, international health, rural health, occupational and environmental health, infectious diseases, chronic diseases, health services research and health policy.

These thematic areas are not meant to be restrictive in any way; for example, an appropriate project might bridge two or more thematic areas, or might not clearly fall under any of the thematic areas.

**Benchmarks**

**Summer IDPT 6090 Requirements and Timeline:** All students must complete the following requirements by the end of the course:

**Note:** All submissions will be electronic
• **June 5, 2019 8:00-9:00am Ed 2 North (P28) 1304** Attend the IDPT 6090 Introductory Orientation Course;
• Meet/communicate with your mentor at least bi-weekly. You will be expected to work on your MSA project for 20 hours per week, for 8 weeks.
• **July 22, 2019** Submit an Abstract of your work and an Annotated bibliography (20 references minimum), via Canvas.
• **July 22, 2019** Upload your Work in Progress materials (PowerPoint), via Canvas by 11:59 PM.
• **July 24 9:00-12:00 Ed 2 North Room 1304**
  **July 25 1:00-4:00 Ed 2 South Room 2201**
  Present current status of project and participate in Work in Progress sessions. Specific schedule will be communicated closer to the presentation dates.
• **COMIRB certification and approval notice** (if your project requires COMIRB approval).
• Students will be required to complete online evaluations and meet with the course directors as necessary to provide feedback.
**Attendance**

Attendance is required at the Orientation and one of the WIP presentation sessions as assigned. It will be so designated in Canvas or communicated via e-mail to your UCDenver e-mail account. Otherwise you will be expected to organize your own schedule, with guidance from your Associate Director and mentor. Please refer to Phase I Essentials Core General Information for full description of requirements.

Failure to attend a required session will be considered a Professionalism issue:

1st unexcused absence in a Phase – the Assistant Dean, Essentials Core Curriculum will contact the student, the situation will be discussed, and the student will be warned that a second infraction will result in filing a Professionalism Feedback Form.

2nd or subsequent unexcused absence in a Phase – the student will meet with the Assistant Dean, who will file a Professionalism Feedback Form.

At any time during a Phase, if a second Professionalism Feedback Form is filed owing to a student’s unexcused absence at a required session, the student’s case will be referred to the Professionalism committee.

Having a negative impact on the small group learning environment, including arriving late for a session will be treated as a separate Professionalism issue.

**Library Resources**

The librarians will be involved with students during the summer elective. They can help MSA students with:

- Problem identification and focus (as far as helping with preliminary searching to identify whether a topic has been covered previously in the literature)
- Question formulations (asking answerable questions)
- Translating the question into a search strategy
- Identifying resources for literature review
- Organizing and managing citations and article reprints or other resources
- Accessing software for various research needs (such as SAS/SPSS) and referral to training resources
- Understanding manuscript style requirements
- Identifying opportunities for publishing or sharing research

Helpful information is available at: [http://hslibraryguides.ucdenver.edu/msa](http://hslibraryguides.ucdenver.edu/msa)

- The easiest way to get to it is to go to the University webpage and search mentored activity. The library page should show up in the middle of the results list. Some sections of immediate interest: Finding a Mentor, Online Tutorials, recommended books (reference resources on how to do research), information on software resources for the research process, statistical resources, EndNote and information on MyNCBI for organizing references, and other advice for organizing and Electronic Reprint File.
- Please email John.Jones@ucdenver.edu for suggestions for improvement.
To make an appointment with the librarian:
Students should identify themselves as working on the MSA project when contacting the library.

Basic Biomedical Science Research, Vladimir Labeikovsky, PhD (303-724-2114)

Global Health Research John D Jones Jr, MSIS (303-724-2117)

Clinical Science Research Kristen DeSanto, MSLS, MS, RD, AHIP (303-724-2121)

Bioethics, Humanities, Arts & Education Research Lilian Hoffecker, PhD, MLS (303-724-2121)

Epidemiology, Public & Community Health Research Ben Harnke, MLIS (303-724-2146)

Writing Center Resources
The campus writing center is an excellent resource to help you with your rough and final draft papers. To get more information or to make an appointment with the writing center, please visit here: http://www.ucdenver.edu/academics/colleges/CLAS/Centers/writing/Pages/TheWritingCenter.aspx

Statistical Resources
The Colorado Biostatistics Consortium (CBC) has partnered with the MSA program to provide guidance on how to design and analyze your MSA research project. Through the MSA Consulting Clinics, the CBC will help you move beyond a general research question in order to craft a testable hypotheses. You will develop a research plan consisting of your study design details, the specific data to be collected, and the methods you will use to analyze your data. During these clinics, you will also receive assistance with implementing your analysis and interpreting your findings. Each clinic will be a mix of small group (2-3 individuals) and one-on-one interactions with biostatistics graduate students dedicated to answering your specific questions.

Registration is required, and must be done at least 48-hours in advance. Each session is limited to only 6 students (1 student during summer of 2016). To get more information or to sign up for a clinic with the CBC, please visit here: http://www.ucdenver.edu/ACADEMICS/COLLEGES/PUBLICHEALTH/RESEARCH/CENTERS/CBC/RESOURCES/Pages/MSA.aspx

Course Evaluations
Students will be required to complete online evaluations. Class representatives and class officers will meet with the course directors as necessary to provide feedback.

How will students be graded in the Mentored Scholarly Activity Course?
For full description of grading policy, please refer to the Phase I Essentials Core General Information.
The MSA is a Pass/Fail course
Each student will receive a grade (Pass/Fail) at the end of each semester based on their progress through the course requirements. You must complete each component of the MSA requirements by the deadline to receive a passing grade.

Grade Definitions
The School of Medicine uses the following grades for the official transcript: Honors (H), High Pass (HP), Pass (P), Pass with Remediation (PR), Incomplete (I), In Progress (IP), Fail (F), and Withdrawal (W). The Block, Course and Clerkship Directors have the latitude to not use the full range of grades available.

Unless otherwise specified, “grades” once assigned become a permanent part of the student’s academic record and transcript. Incomplete (I) and In Progress (IP) are temporary grades which will be permanently replaced by one of the other listed grades.

<table>
<thead>
<tr>
<th>Definitions</th>
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<tr>
<td><strong>Honors (H)</strong></td>
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<td><strong>High Pass (HP)</strong></td>
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<td><strong>Pass (P)</strong></td>
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<td><strong>In Progress (IP)</strong></td>
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<td><strong>Incomplete (I)</strong></td>
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<td><strong>Pass with Remediation (PR)</strong></td>
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<td><strong>Fail (F)</strong></td>
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<td><strong>Withdrawal (W)</strong></td>
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Instructions for Abstract Submission
Type your abstract in to a .doc or .pdf formatted document. You will upload this document to Canvas. Simple graphs and tables may be included if applicable.

TITLES AND AUTHORS
The title should be brief, clearly indicating the nature of the study. Do not use abbreviations in the abstract title. CAPITALIZE ENTIRE TITLE. State all authors’ initials and last names, (presenting author first), including the name of the faculty sponsor of the research, other major contributors, and the Department or Institution in which the work was done. Underline presenting author only. After presenting author’s name, state degree sought and School or Program. i.e. for Alicia C. Brown, Ph.D. candidate in the Graduate School, AC Brown, (Ph.D., GS).

BODY
Organize the body of the abstract to include a purpose of study, methods used, *summary of results, and conclusions reached. Do not skip a line between the title and body of the abstract. Indent the first line of text at least three spaces.
*(Note progress to date, issues encountered and implications of those issues in the abstract in cases where results are not yet available).

ABBREVIATIONS
Abbreviations should conform to the Style Manual for Biological Journals (American Institute for Biological Sciences, 3900 Wisconsin Ave., Washington, DC 20016). Place nonstandard abbreviations in parentheses after the full word the first time it appears.

Proper Form
ARRHYTHMIAS OF THE HEART: MECHANISIM(S). AC Brown, (Ph.D., GS), JB Green, and RT White, Department of Medicine, University of Colorado, Denver, CO.
Digitalis, potassium (K+), and nicotine induce automaticity and propagation block. The initial event is enhanced conduction........

Instructions for Annotated Bibliography
The easiest way to conceptualize an annotated bibliography is to imagine what you would write about a paper in a review article on the topic. This typically would be 2-3 sentences about the importance of the article, what the key findings are, the implications of the findings, etc. For this purpose, one wouldn't want a complete summary of the article.

You will be required to have at least 20 references for your Annotated bibliography.

Here's what one might write about a recent NEJM article. 'Followup of glycemic control and cardiovascular outcomes in Type II DM', Hayward RA, et al. NEJM 2015;372:2197-2206.

'This paper describes the findings of long term followup (9.8 years) for the VA Diabetes Trial, which did not show any significant effect on CVD events at 5 years. In this analysis, the intervention group had a reduction the primary outcome (HR 0.83, 95% CI 0.70 to 0.99), but no effect on CVD mortality or total mortality. This is another in a series of studies showing limited impact of intensive diabetes control on hard outcomes.'

Instructions for Work in Progress Presentations
For your WIP sessions, prepare a short PowerPoint presentation that should be about 10 minutes long. Here are some helpful tips for what to include:

**Disclosures:**
- Are there any real or perceived conflicts of interest for anyone involved in the project?
- If this is human subjects research, COMIRB protocol number?
- If animals are involved, IACUC?

**Background:**
- Why am I personally interested in this topic?
- What is the literature in this topic area?
  - Generally talk about why this is important
  - What do we already know?
- What information gaps are missing?
- What is the historical context for your project?
- If you are doing an intervention, what interventions have been tried before? What were the results?

**Specific details about your project:**
- What is the specific question you are trying to answer?
  - What are the specific aims of your project?
  - What are your hypotheses?
- Methodology
  - How are you going to (did you) answer your research question?
  - Give specific details
    - Who?
    - Population, cell lines, animals, etc.
    - What?
    - Survey, clinical trial, systematic review, lab technique, art medium
    - Where?
    - How?
    - Mail, in-person, in lab, which primary resources

**Accomplishments:**
- What have you been able to do thus far?
- What roadblocks have you encountered?
  - What are the lessons learned from this?
- If you have results—
  - What are the results?
  - What do they mean?
  - How do you interpret them in the context of the existing literature?

**Future directions:**
- Detailed outline of what is left and needs to be done.
  - If this is a Work In Progress, what are my next steps?
  - If this is a capstone presentation, highlight future research/scholarly activity in this area.

**Acknowledgements:**
- Who do you need to thank for helping you?
  - Mentors?
  - Librarians?
  - Research assistants?

**IDPT 6090 Work in Progress Formative Evaluation**
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Definition</th>
<th>Exceeds Expectations</th>
<th>Meets Expectations</th>
<th>Below Expectations</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Significance</td>
<td>Is the significance of the main question, hypothesis, or issue addressed in the project clear (is it important?)? Does the work demonstrate a new or improved approach to a problem?</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Methodology</td>
<td>Is the method or approach clearly stated? Is the approach appropriate for the question? Is a hypothesis presented and tested when applicable?</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Results</td>
<td>Are data and/or other observations clear and convincing? For quantitative studies, have the results been subjected to statistical analysis? For qualitative studies, is the analysis of sufficient breadth and depth?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>N/A</td>
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<tr>
<td>Discussion/</td>
<td>Are inferences, conclusions, implications, and any future follow-up plans based on the data/observations discussed appropriately?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>N/A</td>
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<tr>
<td>Future Plans</td>
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<tr>
<td>Appeal</td>
<td>Is the Presentation appealing? For example, has the presenter chosen quality visuals, used consistent formatting, highlighted major concepts, and used reader-friendly fonts.</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Disclosure</td>
<td>Does the presenter provide a disclosure statement for funding support and/or conflicts of interest?</td>
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<td>2</td>
<td>1</td>
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<tr>
<td>Presentation/</td>
<td>What is the quality of the oral presentation? Is the work presented in a well organized, concise fashion? Is the student capable of presenting complex ideas or data in an understandable fashion? How well does the presenter understand the subject based on responses to questions?</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Understanding</td>
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<td>Overall Presentation</td>
<td>What is your reaction to the quality and effectiveness of the poster presentation overall?</td>
<td>3</td>
<td>2</td>
<td>1</td>
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