American Center for Reproductive Medicine

MODULE ORGANIZER

FOR

Summer Mentorship 2018
SECTION A
GENERAL INFORMATION

1. WHAT IS A MODULE ORGANIZER?
The module organizer is a compilation of information aimed at students to:
- Familiarize themselves with the guidelines and procedures in the American Center for Reproductive Medicine (ACRM) at Cleveland Clinic Foundation, Cleveland, OH, USA.
- Use as a quick reference guide to information usually required (communication procedures, speakers’ contact details, assessment, literature resources, etc.).
- Cultivate an appropriate code of conduct in order to work responsibly, effectively and respectfully.
- Follow the sequence of presentation in the module organizer in order to have more organized and effective learning.
- Understand very explicitly the resource guide in order to comprehend/recognize the performance requirements, and ability to demonstrate competencies during the course of the module.
- Understand the criteria of assessment – justification of grading by Course Faculty.
- Evaluate the speakers during the course as part of the 360-degree feedback.

THIS MODULE ORGANIZER MUST BE YOUR CONSTANT COMPANION TO EACH AND EVERY CLASS, LABORATORY TRAINING AND SCIENTIFIC WRITING WORKSHOP.

2. ABOUT THE MODULE
2.1 The Module Descriptor
The module descriptor gives you an overview of the main features of this module.

2.2 Module-Specific Information
Specified by the Summer Mentorship Director, Dr. Ashok Agarwal
Room: X1-37; Tel. (216) 444 9485; Email: agarwaa@ccf.org

3. THE COURSE COORDINATOR
The coordinator for this module is Dr. Ralf Henkel
Room: X1-19 ACRM; Tel. (216) 444 4402; Email: ralfhenkel0660@gmail.com

The Course Coordinator
- Administers all aspects of the course (all modules).
- Handles all queries, applications for special arrangements, and concerns of students.
- Communicates all important information to students (via class announcements and/or e-mail).
- An open-door policy is usually in operation. However, from time to time it may become necessary to either make appointments via the Coordinator (Room X1-19, Tel. (216) 444 4402).
- An elected class representative serves as liaison person between the class and the coordinator for communication of issues that concern the entire class.
- Collates and edits all examination papers.
- Manages and monitors all evaluation events and the results of these events.
- Administers quality control of the course.
4. **SPEAKERS' INFORMATION AND COMMUNICATION**

- Contact details of the speakers involved in the different modules appear in the table below. Students can consult the speakers via email or in person.
- Should a student need to consult outside the posted consultation hours he/she must fill in a query form stating the request as well as contact numbers and an e-mail address. The speaker will respond via e-mail or directly on the query form.
- An elected class ambassador serves as a liaison between the class and ACRM for communication of issues that concern the entire class. It is advisable that concerns affecting the academic well-being of students be submitted in writing to the course coordinator.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Office Number</th>
<th>E-mail Address</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashok Agarwal, PhD</td>
<td>X1-37</td>
<td><a href="mailto:agarwaa@ccf.org">agarwaa@ccf.org</a></td>
<td>(216) 444 9485</td>
</tr>
<tr>
<td>Rakesh Sharma, PhD</td>
<td>X1-19</td>
<td><a href="mailto:sharmar@ccf.org">sharmar@ccf.org</a></td>
<td>(216) 444 4350</td>
</tr>
<tr>
<td>Sajal Gupta, MD</td>
<td>X1-19</td>
<td><a href="mailto:guptas2@ccf.org">guptas2@ccf.org</a></td>
<td>(216) 444 8182</td>
</tr>
<tr>
<td>Ralf Henkel, PhD</td>
<td>X1-19</td>
<td><a href="mailto:rhenkel@uwc.ac.za">rhenkel@uwc.ac.za</a></td>
<td>(216) 444 4402</td>
</tr>
<tr>
<td>Manesh Kumar, PhD</td>
<td>X1-19</td>
<td><a href="mailto:pannerm@ccf.org">pannerm@ccf.org</a></td>
<td>(216) 444 8182</td>
</tr>
<tr>
<td>Neel Parekh, MD</td>
<td></td>
<td><a href="mailto:parekh.neely@gmail.com">parekh.neely@gmail.com</a></td>
<td>(330) 418 1445</td>
</tr>
<tr>
<td>Kevin Ryan</td>
<td></td>
<td><a href="mailto:kryan@nuhsbaum.com">kryan@nuhsbaum.com</a></td>
<td>(216)-401-4079</td>
</tr>
<tr>
<td>Amy Moore, BA</td>
<td></td>
<td><a href="mailto:moorea@ccf.org">moorea@ccf.org</a></td>
<td>(216) 445 4898</td>
</tr>
<tr>
<td><strong>Coordinator</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Dr. Ralf Henkel:</strong> Tel: (216) 444 4402, Office: X1-19</td>
<td></td>
</tr>
<tr>
<td>Module Name</td>
<td>Reproductive Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Department</td>
<td>American Center for Reproductive Medicine (ACRM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit Value</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>4 weeks (full-time)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Module Type</td>
<td>Program</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main Outcomes</th>
<th>The students should:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Understand male reproductive system and its diseases.</td>
</tr>
<tr>
<td></td>
<td>• Describe relevant physiological functions of the male germ cells.</td>
</tr>
<tr>
<td></td>
<td>• Understand the evaluation and management of male infertility.</td>
</tr>
<tr>
<td></td>
<td>• Understand the physiology and pathophysiology of reactive oxygen species and oxidative stress.</td>
</tr>
<tr>
<td></td>
<td>• Execute basic laboratory investigations.</td>
</tr>
<tr>
<td></td>
<td>• Understand the diagnostic value of andrological parameters.</td>
</tr>
<tr>
<td></td>
<td>• Understand the basic lab safety procedures.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate ability to statistically analyze the data produced in the lab.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate the aptitude to conduct literature search, and engage in writing of scientific articles.</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate the skill of public speaking and scientific presentations.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Pre-Requisites</th>
<th>Undergraduate/graduate students with background in life science/medicine.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Requisites</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Breakdown of Learning Time</th>
<th>Formal lectures: 24 x 1h = 24 h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Practicals: 14 x 2h = 28 h</td>
</tr>
<tr>
<td></td>
<td>Workshops: 14 x 1.5h = 21 h</td>
</tr>
<tr>
<td></td>
<td>Scientific writing: 21 h</td>
</tr>
<tr>
<td></td>
<td>Dedicated training with mentors: 21 h</td>
</tr>
<tr>
<td></td>
<td>Self-study (library, internet, study): 16 h</td>
</tr>
<tr>
<td></td>
<td>Scientific presentations: 5 x 1.5 h: 7.5 h</td>
</tr>
<tr>
<td></td>
<td>Assignments &amp; tasks (outside the daily schedule):</td>
</tr>
<tr>
<td></td>
<td>about 10 hours per week: 40 h</td>
</tr>
<tr>
<td></td>
<td>Tests (Practicals and theory): 10 x 0.5 h = 5 h</td>
</tr>
<tr>
<td></td>
<td>Total learning time: 183.5 h</td>
</tr>
</tbody>
</table>

| Work expectations           | Students should be aware that this mentorship is an intense experience.   |
|------------------------------|They should be prepared for about 10 to 12 hours for classes, practicals, homework and assignments. |

<p>| Methods of Student Assessment| Continuous assessment: 100%                                                |</p>
<table>
<thead>
<tr>
<th>Assessment opportunities and weighing per module</th>
<th>Assessment event:</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Theoretical tests (20 MCQ tests)</td>
<td>1. Theoretical tests (20 MCQ tests)</td>
<td>20%</td>
</tr>
<tr>
<td>2. Scientific writing (3 evaluations)</td>
<td>2. Scientific writing (3 evaluations)</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>1st Evaluation (20%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Evaluation (30%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3rd Evaluation (50%)</td>
<td></td>
</tr>
<tr>
<td>3. Lab Training Practical Evaluation</td>
<td>3. Lab Training Practical Evaluation</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>1st Skill test (20%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Skill test (20%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3rd Skill test (20%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCQ test with 25 questions (40%)</td>
<td></td>
</tr>
<tr>
<td>4. Lab Training Theory Evaluation</td>
<td>4. Lab Training Theory Evaluation</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>MCQ tests for training sessions:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1, 2, 3, 5, 6, 8, 11, 12, 13, and 14</td>
<td></td>
</tr>
<tr>
<td>4. Presentation Skills</td>
<td>4. Presentation Skills</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>1st Presentation (10%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2nd Presentation (10%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3rd Presentation (30%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4th Presentation (50%)</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL** ........................................ 100%

| Failure to attend practicals                  | Attendance of PRACTICALS is compulsory. Failure to comply will result in an “incomplete” record for the student. |
| Handing in of reports and assignments         | These are handed in by due date to the coordinator as indicated by speaker. Graded report/assignments with constructive feedback will be handed back to students within 3 academic days. |
| Penalty for late submission of assignments   | Valid reasons should be submitted to coordinator if due date cannot be met. Penalty: Late by 1 day - deduct 5% of assessment score. Subsequent delays - deduct 10% per day. |
| Failure to submit a report/assignment        | No mark will be allocated unless student applies for re-evaluation based on medical or compassionate grounds. |
| Failure to present for a continuous assessment event (e.g. tests and practical assessments) | No mark is allocated unless student applies for re-evaluation based on medical or compassionate grounds. Report within 2 days to coordinator of failing to write. Failure to write a theory test will constitute an ‘incomplete’ record for the module. Failure to write one of the integrated practical assessments will constitute an ‘incomplete’ record for the module. |
| Failure of student to present for a final examination paper | Student’s record is “incomplete” unless student applies for re-evaluation based on medical or compassionate grounds. Fill in an application form for special examination, within 2 days of missing the exam - attach a medical certificate or other proof for absence. (Form available at the Coordinator) |
CAM: Continuous Assessment Mark

5.2 Examination and Test Information – General

- The OFFICIAL MEANS OF COMMUNICATING all information regarding assessment will be via email or in person.
- DO NOT CONTACT the coordinator for any information regarding evaluation.
- NO RESULTS will be available before 3 days (academic) after the evaluation.
- NO FINAL EXAMINATION scripts will be available for viewing.

5.3 Evaluation Dates (Subject to Change by Speaker/Course Coordinator.

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENT</th>
<th>CONTENT</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>MCQ tests for 20 lectures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBD</td>
<td>Three Scientific Writing tests</td>
<td>Scientific Writing</td>
<td></td>
</tr>
<tr>
<td>7/9/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 1</td>
<td>2:00PM-3:30PM</td>
</tr>
<tr>
<td>7/10/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 2</td>
<td>3:00PM-4:30PM</td>
</tr>
<tr>
<td>7/11/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 3</td>
<td>11:00AM-12:30PM</td>
</tr>
<tr>
<td>7/12/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 5</td>
<td>10:00AM-11:30AM</td>
</tr>
<tr>
<td>7/13/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 6</td>
<td>2:30PM-4:00AM</td>
</tr>
<tr>
<td>7/13/18</td>
<td>Student Presentation #1</td>
<td>2 min with 2 min Q/A</td>
<td>1:30PM-2:30PM</td>
</tr>
<tr>
<td>7/13/18</td>
<td>Lab Training Skill Test #1</td>
<td>Sperm count / sperm motility</td>
<td>2:30PM-3:30PM</td>
</tr>
<tr>
<td>7/17/18</td>
<td>Student Presentation #2</td>
<td>5 min with 2 min Q/A</td>
<td>10:30AM-11:30AM</td>
</tr>
<tr>
<td>7/17/18</td>
<td>Lab Training Skill Test #2</td>
<td>Sperm vitality</td>
<td>2:30PM-4:30PM</td>
</tr>
<tr>
<td>7/18/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 11</td>
<td>11:00AM-12:30PM</td>
</tr>
<tr>
<td>7/19/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 12</td>
<td>11:00AM-12:30PM</td>
</tr>
<tr>
<td>7/19/18</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 13</td>
<td>2:30PM-5:00PM</td>
</tr>
<tr>
<td>7/20/18</td>
<td>Lab Training Skill Test #3</td>
<td>Sperm morphology</td>
<td>9:00AM-10:30PM</td>
</tr>
<tr>
<td>7/17/17</td>
<td>Lab Training Theory Evaluation</td>
<td>Training 14</td>
<td>12:00AM-12:30PM</td>
</tr>
<tr>
<td>7/25/18</td>
<td>Student Presentation #3</td>
<td>7 min with 5 min Q/A</td>
<td>1:30PM-3:30PM</td>
</tr>
<tr>
<td>7/30/18</td>
<td>Lab Training MCQ</td>
<td>Lab Skills knowledge</td>
<td>9:00AM-10:00AM</td>
</tr>
<tr>
<td>8/3/18</td>
<td>(Final) Student Presentation #4</td>
<td>15 min with 5 min Q/A</td>
<td>9:00AM-12:30PM</td>
</tr>
</tbody>
</table>

6. RECOMMENDED TEXTBOOKS

There is not one single textbook that is perfectly suited for this course. However, the following textbooks are highly recommended:

- Aziz N, Agarwal A (2017). The Diagnosis and Treatment of Male Infertility: A Case-Based Guide for Clinicians; Springer
• Andrology Laboratory Guide. Andrology Lab, Cleveland Clinic

*THESE TEXTBOOKS, HOWEVER, DO NOT REPRESENT THE COMPLETE CURRICULUM.*
SECTION B
CONTENT AND LEARNING OUTCOMES

1. HOW TO USE THE OUTLINE AND LEARNING OUTCOMES
The learning outcomes were designed to guide you to achieve the competencies needed upon the completion of the mentorship at the American Center for Reproductive Medicine. These competencies include ‘what you should know’, ‘what you should be able to perform’, and ‘what you should be able to demonstrate. Before reading the outcomes, there are some general comments which you should appreciate:

- The learning outcomes should provide students with a useful aide-memoire (i.e., outline of important items) when revising the content covered in the lectures, i.e., the Course Faculty should be able to clarify to the intern as to what they should be able to do upon completing a particular topic.
- The outcomes have been prepared some months in advance, and may be provisional in some instances. However, if the speaker decides to modify the outcomes for any lecture, this fact will be made absolutely clear to those students attending the lecture. These will be communicated by the coordinator.
- Learning outcomes should be used in conjunction with any other handouts issued to students during lectures, practicals, etc.
- If a speaker does not, in the intern’s opinion, cover all the learning outcomes, as outlined for a particular lecture, then the intern should contact the speaker for more information.
2. **LECTURES: OUTLINE**

### HUMAN REPRODUCTIVE BIOLOGY

(Any changes to the schedule will be announced before/during the lectures)

<table>
<thead>
<tr>
<th>DATE</th>
<th>LECTURE</th>
<th>TOPIC</th>
<th>SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/6/18</td>
<td>1</td>
<td>The Male Reproductive System</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td>7/6/18</td>
<td>2</td>
<td>The Female Reproductive System</td>
<td>Sajal Gupta, MD</td>
</tr>
<tr>
<td>6/7/18</td>
<td>3</td>
<td>Introduction to Infertility</td>
<td>Neel Parekh, MD</td>
</tr>
<tr>
<td>7/9/18</td>
<td>4</td>
<td>Laboratory Safety</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sajal Gupta, MD</td>
</tr>
<tr>
<td>7/9/18</td>
<td>5</td>
<td>Use and Care of the Microscope</td>
<td>Kevin Ryan</td>
</tr>
<tr>
<td>7/10/18</td>
<td>6</td>
<td>Laboratory Evaluation of Male Infertility</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sajal Gupta, MD</td>
</tr>
<tr>
<td>7/16/18</td>
<td>7</td>
<td>The Art of Making an Effective PowerPoint Presentation</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/10/18</td>
<td>8</td>
<td>Public Speaking Skills for Scientists and Clinical Investigators</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/16/18</td>
<td>9</td>
<td>Publish or Perish: Tips for Publishing in a Peer-reviewed Scientific Journal</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/17/18</td>
<td>10</td>
<td>Advances in Microsurgery Techniques</td>
<td>Neel Parekh, MD</td>
</tr>
<tr>
<td>7/18/18</td>
<td>11</td>
<td>The Impact of Oxidative Stress on Male Fertility</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td>7/18/18</td>
<td>12</td>
<td>Endocrinological Causes of Male Infertility and their Management</td>
<td>Neel Parekh, MD</td>
</tr>
<tr>
<td>7/19/18</td>
<td>13</td>
<td>Oxidation-Reduction Potential and its Role in Male Infertility</td>
<td>Manesh Kumar, PhD</td>
</tr>
<tr>
<td>7/19/18</td>
<td>14</td>
<td>Advanced Techniques in Sperm Selection</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td>7/20/18</td>
<td>15</td>
<td>Fertility Preservation</td>
<td>Sajal Gupta, MD</td>
</tr>
<tr>
<td>7/23/18</td>
<td>16</td>
<td>Pathological Role of Varicocele in Male Infertility</td>
<td>Neel Parekh, MD</td>
</tr>
<tr>
<td>7/23/18</td>
<td>17</td>
<td>Genetic Causes of Male Infertility</td>
<td>Neel Parekh, MD</td>
</tr>
<tr>
<td>7/24/18</td>
<td>18</td>
<td>The Impact of Sperm DNA Fragmentation in Assisted Reproduction</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/26/18</td>
<td>19</td>
<td>Management of Idiopathic Infertility</td>
<td>Neel Parekh, MD</td>
</tr>
</tbody>
</table>

### APPLIED BIOSTATISTICS

(Any changes to the schedule will be announced before/during the lecture/practical)

<table>
<thead>
<tr>
<th>DATE</th>
<th>LECTURE</th>
<th>TOPIC</th>
<th>SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/11/18</td>
<td>1</td>
<td>Applied Statistical Methods in Translational Research #1</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/12/18</td>
<td>2</td>
<td>Applied Statistical Methods in Translational Research #2</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/16/18</td>
<td>3</td>
<td>Applied Statistical Methods in Translational Research #3</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/23/18</td>
<td>4</td>
<td>Applied Statistical Methods in Translational Research #4</td>
<td>Ralf Henkel, PhD</td>
</tr>
<tr>
<td>7/25/18</td>
<td>5</td>
<td>Applied Statistical Methods in Translational Research #5</td>
<td>Ralf Henkel, PhD</td>
</tr>
</tbody>
</table>

3. **PRESENTATIONS: OUTLINE**

(Any changes to the schedule will be announced before/during the practical)

<table>
<thead>
<tr>
<th>DATE</th>
<th>PRESENTATION</th>
<th>TOPIC</th>
<th>SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/9/18</td>
<td>1</td>
<td>Introduction to Electronic Search Resource</td>
<td>Loren Hackett, MLIS-AHIP</td>
</tr>
</tbody>
</table>
### 4. PRACTICALS: OUTLINE
(Any changes to the schedule will be announced before/during the practical)

<table>
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<th>DATE</th>
<th>PRACTICAL</th>
<th>TOPIC</th>
<th>SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/9/18</td>
<td>1</td>
<td>Lab Safety, Pipetting Skills</td>
<td>Rakesh Sharma, PhD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sajal Gupta, MD</td>
</tr>
<tr>
<td>7/10/18</td>
<td>2</td>
<td>Demonstration of Manual Semen Analysis</td>
<td>Rakesh Sharma, PhD</td>
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<td>Sajal Gupta, MD</td>
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<td>Manual Semen Analysis: Counting Accubeads</td>
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<td>Manual Semen Analysis: Concentration and Motility</td>
<td>Rakesh Sharma, PhD</td>
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<td>Lecture and Demonstration: Leukocytospermia Test, White Blood Cells, Semen Analysis</td>
<td>Rakesh Sharma, PhD</td>
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<td>8</td>
<td>Sperm Morphology According to WHO 5th Edition</td>
<td>Rakesh Sharma, PhD</td>
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<td>7/16/18</td>
<td>9</td>
<td>Preparation of Morphology Smears and Scoring of 5 Slides</td>
<td>Sajal Gupta, MD</td>
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<td>7/16/18</td>
<td>10</td>
<td>Sperm Morphology Scoring Practice</td>
<td>Rakesh Sharma, PhD</td>
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<td>7/18/18</td>
<td>11</td>
<td>Introduction to Advanced Lab Techniques in Andrology: TUNEL, ROS, TAC</td>
<td>Rakesh Sharma, PhD</td>
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<td>12</td>
<td>Measurement of Oxidation-Reduction Potential by MiOXSYS Analyzer</td>
<td>Manesh Kumar, PhD</td>
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<td>7/19/18</td>
<td>13</td>
<td>Practice Sperm Preparation</td>
<td>Sajal Gupta, MD</td>
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<td>7/20/18</td>
<td>14</td>
<td>Demonstration of Sperm Cryopreservation</td>
<td>Sajal Gupta, MD</td>
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### 5. WORKSHOP OUTLINE
(Any changes to the schedule will be announced before/during the tutorial)

<table>
<thead>
<tr>
<th>DATE</th>
<th>Workshop(s)</th>
<th>TOPIC</th>
<th>SPEAKER</th>
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<tbody>
<tr>
<td>7/10/18</td>
<td>1</td>
<td>The Resources Available to help Authors to Write</td>
<td>Amy Moore, BA</td>
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<tr>
<td>7/10/18</td>
<td>2</td>
<td>How Much do You Know about Scientific Writing?</td>
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<td>3</td>
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<td>7/11/18</td>
<td>4</td>
<td>Homework Review I</td>
<td>Amy Moore, BA</td>
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<td>7/13/18</td>
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<td>Homework Review II</td>
<td>Amy Moore, BA</td>
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<td>7/17/18</td>
<td>6</td>
<td>Homework Review III</td>
<td>Amy Moore, BA</td>
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<tr>
<td>7/18/18</td>
<td>7</td>
<td>Writers Workshop Part I (Review of Personal Scientific Writing Project)</td>
<td>Amy Moore, BA</td>
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<tr>
<td>7/20/18</td>
<td>8</td>
<td>Writers Workshop Part II (Review of Personal Scientific Writing Project)</td>
<td>Amy Moore, BA</td>
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<tr>
<td>7/24/18</td>
<td>9</td>
<td>Writers Workshop Part III (Review of Personal Scientific Writing Project)</td>
<td>Amy Moore, BA</td>
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<tr>
<td>7/24/18</td>
<td>10</td>
<td>Writers Workshop Part IV (Review of Personal Scientific Writing Project)</td>
<td>Amy Moore, BA</td>
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<td>Writers Workshop Part V (Review of Personal Scientific Writing Project)</td>
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<tr>
<td>7/31/18</td>
<td>12</td>
<td>Writers Workshop Part VI (Review of Personal Scientific Writing Project)</td>
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<tr>
<td>8/1/18</td>
<td>13</td>
<td>Writers Workshop Part VII (Review of Personal Scientific Writing Project)</td>
<td>Amy Moore, BA</td>
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</table>
Lecture outline

**HUMAN REPRODUCTIVE BIOLOGY**

**LECTURE 1: The Male Reproductive System**
**Content:** Anatomy and function of testes, accessory glands and the male germ cell

**Learning outcomes** - Students should be able to:
- Know the roles of the different male reproductive organs
- Locate the male reproductive organs
- Understand the role of the hypothalamus-pituitary axis
- Understand the significance of the hormonal regulation of the male reproductive system
- Understand the process of spermatogenesis and spermiogenesis
- Define and identify the main features of the germ cells
- Explain cytodifferentiation (gametogenesis)

**LECTURE 2: The Female Reproductive System**
**Content:** Introduction to female reproductive system and describe the functions of the various female reproductive organs.

**Learning outcomes** - Students should be able to understand and get a preliminary knowledge of:
- Embryology: Development of female genital tract
- Ovarian gonadal development
- Ovarian folliculogenesis
- Ovarian steroidogenesis
- Menstrual cycle
- Clinical implications for reproductive medicine and ART

**LECTURE 3: Introduction to Infertility**
**Content:** Understanding the workup of the infertile couple

**Learning outcomes** - Students should be able to:
- Define infertility
- Detail infertility etiologies
- Describe the evaluation of a male patient presenting with infertility
- Understand female factor evaluation
- Comprehend the treatment of infertility based on the clinical etiology

**LECTURE 4: Laboratory Safety**
**Content:** Working in an Andrology laboratory

**Learning outcomes** - Students should be able to:
- Understand the safety measures necessary in an Andrology laboratory
- Apply the relevant safety measures in a laboratory
- Properly use laboratory equipment including pipettes
- Safe handling of chemicals
- Legal regulations for laboratory work
LECTURE 5: Use and Care of the Microscope  
**Content:** Instruction and demonstration on the use and care of a microscope

**Learning outcomes** - Students should be able to:
- Distinguish between bright-field and phase-contrast microscopy
- Proper use of a microscope
- Understand the correct use of reticle and counting chamber
- Proper care of a microscope

LECTURE 6: Laboratory Evaluation of Male Infertility  
**Content:** Collection and analysis of semen samples

**Learning outcomes** - Students should be able to:
- Understand the principle of a laboratory evaluation of male infertility
- Understand the different components of semen analysis
- Name different components of macroscopic and microscopic parameters of semen analysis
- Understand the reference values for each semen parameter

LECTURE 7: The Art of Making an Effective PowerPoint Presentation  
**Content:** Using PowerPoint to prepare scientific presentations.

**Learning outcomes** - Students should be able to:
- Use the PowerPoint program
- Apply proper background color
- Use appropriate font size and font color
- Make proper use of figures and tables
- Apply appropriate animations

LECTURE 8: Public Speaking Skills for Scientists and Clinical Investigators  
**Content:** Develop the soft skills for public speaking and scientific presentation

**Learning outcomes** - Students should be able to:
- Understand how to organize the content of a scientific presentation
- Apply the 6 common tips of effective public speaking
- Apply the do's of public speaking
- Know the don'ts of public speaking

**Content:** Job profile of a scientist, requirements for a manuscript to be submitted to a journal, plagiarism.

**Learning outcomes** - Students should be able to:
- Understand the requirements for a manuscript submission for publication
- Understand the importance of plagiarism
- Understand the Peer-review process
LECTURE 10: Advances in Microsurgery Techniques  
**Content:** Summary of microsurgical techniques for testis biopsy, vasovasostomy, varicocelectomy

**Learning outcomes** - Students should be able to:
- Describe history of surgical treatment for male infertility and how microsurgery has impacted treatment options for male infertility
- Describe important surgical techniques for testis biopsy
- Describe important surgical techniques for vasovasostomy and vasoepididymostomy
- Describe important surgical techniques for varicocelectomy

LECTURE 11: The Impact of Oxidative Stress on Male Fertility  
**Content:** Basics of oxidative stress.

**Learning outcomes:** Students should be able to:
- Understand the function of leukocytes
- Understand oxidative stress
- Understand the lipid composition of sperm plasma membrane and the process of lipid peroxidation
- Understand the importance of the fine balance between oxidation and reduction

LECTURE 12: Endocrinological Causes of Male Infertility and their Management  
**Content:** Description of hypothalamic-pituitary-gonadal axis and disruptions that affect fertility. Description of pre-testicular and testicular causes of infertility and their hormonal profile and the management

**Learning outcomes** - Students should be able to:
- Describe the hypothalamic-pituitary-gonadal axis
- Describe hormonal profile for pre-testicular causes of infertility
- Describe hormonal profile of testicular causes of infertility
- Describe medical treatment options for endocrinological causes of male infertility and their side effects

LECTURE 13: Oxidation-Reduction Potential (ORP) and its Role in Male Infertility  
**Content:** Novel tests to measure oxidative stress

**Learning outcomes** - Students should be able to:
- Understand the significance of the oxidation reduction potential (ORP)
- Understand the significance of the fine balance between oxidants and reductants
- Understand the application ORP in male infertility

LECTURE 14: Advanced Techniques in Sperm Selection  
**Content:** Sperm selection methods for ejaculated and testicular spermatozoa

**Learning outcomes** - Students should be able to:
- Understand the need for sperm preparation
- Understand different methods for sperm preparation and their advantages
- Properly select the correct sperm selection method for ejaculated and testicular sperm
LECTURE 15: Fertility Preservation
Content: Basics of the ART procedure and indications of fertility preservation for ART.

Learning outcomes - Students should be able to:
- Understand what is fertility preservation
- Define indications for fertility preservation
- Discuss current fertility preservation modalities
- Comprehend the new ovulation induction timing options
- Define sperm banking
- Discuss and expand indications for sperm banking in various groups of men with cancer

LECTURE 16: Pathological Role of Varicocele in Male Infertility
Content: Basics of the pathology of varicocele and its impact on male fertility.

Learning outcomes - Students should be able to:
- Understand the functions of the Pampiniform plexus
- Define varicocele
- Understand causes and etiology of varicocele
- Understand the pathology of varicocele
- Define the impact of varicocele on male fertility potential
- Discuss clinical symptoms of varicocele and understand various treatment options

LECTURE 17: Genetic Causes of Male Infertility
Content: Summary of genetic syndromes that lead to male infertility or sub-fertility

Learning outcomes - Students should be able to:
- Describe the findings in Klinefelter’s, Kallman’s, and Congenital Absence of the Vas Deferens
- Describe the Y Microdeletions and how they relate to male infertility

LECTURE 18: The Impact of Sperm DNA Fragmentation in Assisted Reproduction
Content: Importance of DNA damage and its consequences for the fertilization process and the offspring

Learning outcomes - Students should be able to:
- Identify causes of DNA damage
- Understand the mechanism of DNA damage
- Explain the impact on male fertilizing potential
- Distinguish between different laboratory techniques for DNA damage
- Know advantages and disadvantages of these techniques

LECTURE 19: Management of Idiopathic Infertility
Content: Summary of medical and surgical treatment options for infertility

Learning outcomes - The Students should be able to:
- Describe medications used for male infertility and their mechanism
- Describe antioxidants recommended for male infertility
- Describe surgical options for male infertility including indications
APPLIED BIOSTATISTICS

LECTURE 1: Applied Statistical Methods in Translational Research #1
**Content:** Ethics and simple applied statistical methods for scientific research including parametric and non-parametric data, normal distribution, mean, median, comparisons, correlations, method comparison, ROC curve analysis, trend analysis

**Learning outcomes** - Students should be able to:
- Understand the ethical conduct of scientific research
- Conduct summary statistics
- Distinguish between parametric and non-parametric data and apply relevant subsequent tests
- Apply simple statistical analyses such as t-test or Mann-Whitney test for comparisons

LECTURE 2: Applied Statistical Methods in Translational Research #2
**Content:** Application of statistical methods for scientific research including parametric and non-parametric data, normal distribution, mean, median, comparisons, correlations, method comparison, ROC curve analysis, trend analysis

**Learning outcomes** - Students should be able to:
- Conduct summary statistics
- Distinguish between parametric and non-parametric data and apply relevant subsequent tests
- Apply simple statistical analyses such as t-test or Mann-Whitney test for comparisons

LECTURE 3: Applied Statistical Methods in Translational Research #3
**Content:** Application of statistical methods for scientific research including parametric and non-parametric data, normal distribution, mean, median, comparisons, correlations, method comparison, ROC curve analysis, trend analysis

**Learning outcomes** - Students should be able to:
- Distinguish between parametric and non-parametric data and apply relevant subsequent tests
- Apply simple statistical analyses such as t-test or Mann-Whitney test for comparisons
- Apply ROC curve analyses
- Perform trend analyses
- Understand method comparisons

LECTURE 4: Applied Statistical Methods in Translational Research #4
**Content:** Application of statistical methods for scientific research including parametric and non-parametric data, normal distribution, mean, median, comparisons, correlations, method comparison, ROC curve analysis, trend analysis

**Learning outcomes** - Students should be able to:
- Distinguish between parametric and non-parametric data and apply relevant subsequent tests
- Apply simple statistical analyses such as t-test or Mann-Whitney test for comparisons
- Apply ROC curve analyses
- Perform trend analyses
- Understand method comparisons
LECTURE 5: Applied Statistical Methods in Translational Research #5

Content: Application of statistical methods for scientific research including parametric and non-parametric data, normal distribution, mean, median, comparisons, correlations, method comparison, ROC curve analysis, trend analysis

Learning outcomes - Students should be able to:
- Apply simple statistical analyses such as t-test or Mann-Whitney test for comparisons
- Apply ROC curve analyses
- Perform trend analyses
- Understand method comparisons

2. PRESENTATIONS: CONTENT SUMMARIES AND LEARNING OUTCOMES

PRESENTATION 1: Introduction to Electronic Search Resource
Content: Using various search programs for scientific information

Learning outcomes - Students should be able to:
- Be able to use PubMed
- Develop specific search strategies
- Use EndNote for referencing

3. PRACTICALS: CONTENT SUMMARIES AND LEARNING OUTCOMES

PRACTICAL 1: Lab Safety, Pipetting Skills
Content: Working in an Andrology laboratory

Learning outcomes - Students should be able to:
- Understand the safety measures necessary in an Andrology laboratory
- Apply the relevant safety measures for working in a laboratory
- Properly use laboratory equipment including pipettes
- Correctly use micropipettes and serological pipettes

PRACTICAL 2: Demonstration of Manual Semen Analysis
Content: Introduction to practical semen analysis

Learning outcomes - Students should be able to:
- Perform standard manual semen analyses
- Calculate and interpret the results of sperm concentration and motility
- Understand the challenges in conducting correct semen analyses
- Explain the different types of motility patterns
PRACTICAL 3: Manual Semen Analysis: Counting Accubeads
Content: Quality control in manual semen analysis

Learning outcomes - Students should be able to:
- See practical # 2
- Understand the need for the use of Accubeads
- Perform counting procedures using Accubeads
- Perform quality control with low and high concentration of Accubeads

PRACTICAL 4: Manual Semen Analysis: Concentration and Motility
Content: Manual semen analysis

Learning outcomes - Students should be able to:
- Calculate round cells in a wet smear
- Differentiate round cells from white blood cells
- Perform the Endtz-test to quantitate leukocytes
- Count and calculate sperm concentration

PRACTICAL 5: Lecture and Demonstration: Leukocytospermia Test, White Blood Cells, Semen Analysis
Content: Leukocyte contamination in semen samples

Learning outcomes - Students should be able to:
- Differentiate round cells from white blood cells
- Perform the Endtz-test to quantitate leukocytes
- Identify calculate round cells in a wet smear

PRACTICAL 6: Sperm vitality: Hypoosmotic swelling (HOS) HOS test; Eosin-Nigrosin Stain, Preparation of Smears
Content: Cell vitality, semipermeability of membranes, membrane integrity, osmolarity and osmotic swelling.

Learning outcomes – Students should be able to:
- Understand criteria of cell vitality
- Perform the HOS test
- Correctly differentiate between the different types of tail swelling
- Know the indications for the HOS test and Eosin-Nigrosin stain
- Know the Eosin-Nigrosin stain
- Perform the Eosin-Nigrosin stain

PRACTICAL 7: Scoring Smears for Sperm Vitality; Preparation of Morphology Smears
Content: Sperm morphology assessment and its significance in evaluation of male fertility

Learning Outcomes - Students should be able to:
- Understand the significance of the vitality and morphology tests
- Understand the procedure of staining for sperm morphology
- Develop the skills to assess morphology by microscopic examination
- Develop competence in assessing sperm morphology by Strict criteria
- Prepare smears for morphology stain
PRACTICAL 8: Sperm Morphology According to WHO 5th Edition
Content: Sperm morphology assessment and its significance for evaluation of male fertility

Learning Outcomes - Students should be able to:
• Understand the significance of the test
• Understand the procedure of staining for sperm morphology
• Develop the skills to assess morphology by microscopic examination
• Develop competence in scoring sperm morphology by strict criteria

PRACTICAL 9: Preparation of Morphology Smears and Score of 5 Slides
Content: Preparation and staining and scoring of sperm morphology slides.

Learning outcomes - Students should be able to:
• See practical # 7
• Practical training provided to students who will develop competency and skills for sperm morphology assessment by strict criteria.

PRACTICAL 10: Sperm Morphology Scoring Practice
Content: Sperm morphology assessment by strict criteria

Learning outcomes - Student should be able to:
• Evaluate sperm morphology on 10 sets of slides
• Differentiate between normal and abnormal sperm

PRACTICAL 11: Introduction to Advanced Lab Techniques in Andrology: TUNEL, ROS, TAC
Content: Flow cytometry for the determination of sperm DNA fragmentation, luminometry for ROS, and ELISA for TAC

Learning outcomes - Students should be able to:
• Understand the principle of flow cytometry, luminometry and ELISA
• Explain the different components of a bench top Accuri Flow cytometer
• Prepare sperm samples for flow cytometric analysis
• Perform quality control in flow cytometry

PRACTICAL 12: Measurement of Oxidation Reduction Potential (ORP) by MiOXSYS Analyzer
Content: Oxidation Reduction Potential in semen analysis

Learning outcomes - Students should be able to:
• Correctly use the MiOXSYS Analyzer
• Calibrate the MiOXSYS Analyzer
• Calculate the normalized ORP
PRACTICAL 13: Practice Sperm Preparation
Content: Different sperm preparation techniques

Learning outcomes - Students should be able to:
- Perform sperm preparation by density gradient centrifugation
- Perform sperm preparation by swim-up
- Describe indications and protocol for sperm preparation techniques
- Describe different types of sperm preparation
- Understand the significance of sperm selection in ART
- Develop understanding of the outcomes associated with sperm preparation

PRACTICAL 14: Demonstration of Sperm Cryopreservation
Content: Sperm cryopreservation: indications, procedure and outcomes

Learning outcomes - Students should be able to:
- Understand the indications, procedures, types and outcomes of sperm cryopreservation
- Importance of sperm cryopreservation in men with infertility or men with cancer
- Discuss the outcomes with sperm cryopreservation.

4. WORKSHOPS: CONTENT SUMMARIES AND LEARNING OUTCOMES

WORKSHOP 1: The Resources available to help Authors to Write
Content: Students will review various writing resources that explore the fundamentals of writing for the medical literature.

Learning outcomes - Students should be able to:
- Discuss journal Instructions for Authors and why it is important to have this document before you begin to write
- Locate online writing guidelines that explain how to craft research papers based on the study type
- Identify helpful books and published articles on writing various scientific communications (research papers, posters, meeting abstracts)

WORKSHOP 2: How much do you know about Scientific Writing?
Content: Students will learn more about the world of medical publishing through a series of Q & A.

Learning outcomes - Students should be able to:
- Discuss the historical context behind modern day publishing practices of medical journals, including peer review
- Define important terms (e.g., impact factor, open access) that help researchers decide where and why to publish
- Describe the different types of medical journals and know how to spot potential predatory publishers
WORKSHOP 3: Ethical Issues in Publications – Authorship and Plagiarism

Content: Having sound writing skills is only part of what makes a research writer successful. Knowing how to publish ethically is also the key.

Learning outcomes - Students should be able to:
- Discuss the definition of authorship accepted by most scientific journals worldwide
- Define the terms “ghost” and “guest” author
- Describe the definition of plagiarism, the standards that journals expect authors to adhere to, and the good publishing practices that help authors avoid unintentional plagiarism.

WORKSHOP 4: Homework Review #1

Content: Students will have read Chapters 1 and 2 from “Writing in Science & Medicine: The Investigator’s Guide to Writing for Clarity and Style” and completed the assigned writing exercises. We will spend the class reviewing the answers in group discussion.

Learning outcomes - Students should be able to:
- Discuss the main causes of obscurity in scientific writing (Chapter 1)
- Discuss writing techniques that enhance concision (Chapter 2)
- Understand why it is important to avoid jargon (Chapter 2)
- Identify commonly misused words and phrases (Chapter 2)

WORKSHOP 5: Homework Review #2

Content: Students will have read Chapters 3 and 4 from “Writing in Science & Medicine: The Investigator’s Guide to Writing for Clarity and Style” and completed the assigned writing exercises. Students will spend the class reviewing the answers in group discussion.

Learning outcomes - Students should be able to:
- Identify sentences that contain nominalizations (Chapter 3)
- Discuss the difference between passive and active voice and when to use them (Chapter 3)
- Explain why paragraphs are important, when to start a new paragraph and how to transition from one to the next (Chapter 4)

WORKSHOP 6: Homework Review #3

Content: Students will have read Chapters 5 and 6 from “Writing in Science & Medicine: The Investigator’s Guide to Writing for Clarity and Style” and completed the assigned writing exercises. Students will spend the class reviewing the answers in group discussion.

Learning outcomes - Students should be able to:
- Practice some basic grammar including proper punctuation and subject-verb agreement (Chapter 5)
- Identify at least one resource that explains the details of proper format including use of abbreviations and numbers (Chapter 5)
- Explain the basic principles of a good graph/ table (Chapter 5)
- Practice revising techniques (Chapter 6)
WORKSHOP 7: Writers Workshop Part I (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.

WORKSHOP 8: Writers Workshop Part II (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.

WORKSHOP 9: Writers Workshop III (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.

WORKSHOP 10: Writers Workshop IV (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.

WORKSHOP 11: Writers Workshop V (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.

WORKSHOP 12: Writers Workshop VI (Review of Personal Scientific Writing Project)
Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
• Students should have a completed draft of their personal writing project.
WORKSHOP 13: Writers Workshop VII (Review of Personal Scientific Writing Project)

Content: Students will review the rough drafts of their personal writing projects with the instructor and class in a group setting. The session will focus on practicing the writing techniques discussed in earlier sessions.

Learning outcomes - Students should be able to:
- Students should have a completed draft of their personal writing project.
SECTION C – APPENDIXES

APPENDIX A

General Laboratory Safety Rules

Students should familiarize themselves with the principles of the code of conduct for practicals.

Code of Conduct:

1. **Attendance of Practicals and Writing Tests:** The student is expected to attend practicals and to undertake the required assignments, reports and tests (practical evaluations). In the event of his/her being absent without permission, a student shall, as soon as possible, inform the speakers concerned of the reason for his/her absence.

2. **Time:** Students should be punctual (on time) for the laboratory training.

3. **Attire and Dress Code:** It is expected that students should wear the appropriate attire during practical classes, including a blue lab jacket. Keep long hair tied up neatly behind the head and do not wear dangling jewelry. Do not wear open shoes.

4. **Assignments and Reports:** These should be handed in on the given due date and, failing to do so may result in action.

5. **Attendance Register:** It is the student’s responsibility to sign the attendance register during each practical.

6. **Preparation:** Students should be prepared when coming to practicals, thus familiarizing themselves with the given topic.

7. **Stationery:** The lab will provide the following stationary for lab use: permanent marker, pencil, pen and calculator.

8. **Waste:** Discard glass slides in the sharps bin. Biohazard waste in red bin, paper in blue bin and regular waste in regular trash bin.

9. **Important:**
   - Make sure that all slides, reagents and media are correctly and clearly labelled with regard to contents.
   - Never work with toxic or flammable materials outside a suitable fume hood with efficient extraction facilities.
   - Consider all biological specimens as potentially hazardous/infectious.
   - Wear appropriate protective equipment while handling specimens and reagents.

10. **Do Not Do the Following:**
    - Have cellphones switched on during the laboratory training.
    - Engage in gossip in the laboratory.
    - Put personal belongings on bench tops; these should be placed in your lockers
    - Eat or drink in the laboratory.
APPENDIX B

Students’ Code of Conduct

The members of staff of the American Center for Reproductive Medicine (ACRM) undertake to conduct all academic affairs in a professional manner and all students are expected to do the same. The following is not exhaustive, but should serve to guide students in this endeavor.

1. Students are to ensure that they are conversant with the guidelines and code of conduct of ACRM.
2. Students are to treat all staff and fellow students with respect, dignity and consideration.
3. Students should be punctual for all academic activities and for appointments made in the department.
4. Dishonesty (theft, plagiarism, etc.) is considered a serious offence and will be dealt accordingly.
5. Eating, drinking and the use of cellphones are not allowed in classrooms, labs or in staff offices.
6. Disruptive behavior is considered offensive and will be dealt according to the guidelines of ACRM.
7. Clean white coats and ID badges should be worn throughout the hospital premises, at all times.
8. The dress code that applies to students for practicals:
   - Blue lab jackets have to be worn during the laboratory training.
9. Students are expected to prepare themselves for all academic activities. Preparatory reading for classes and practicals in particular is expected. It is the responsibility of the student to acquire all class notes in a timely manner.
10. Students are expected to follow their evaluations closely. Discrepancies in marks should be reported within 2 days to the coordinator.