EDUCATIONAL PROGRAM DESCRIPTION

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Introduction
The Fellowship program is designed to provide subspecialty training in orthopedic spine surgery and includes the in-depth study, prevention, and treatment of spinal column diseases, disorders, and injuries by medical, physical, and surgical methods. Experiences are provided in both the inpatient and outpatient settings in the treatment of adult and pediatric spinal conditions. Fellowship participants provide evaluation and care of individuals through a wide range of ages, of both sexes, and with a wide variety of problems in various spinal regions.

Physicians entering the Fellowship program must have successfully completed a residency program in either Orthopedics or Neurosurgery. The physician will be expected to have had some specific training in the evaluation and treatment of degenerative, traumatic, inflammatory and neoplastic disorders of the spine. The Fellowship program, building on this prior experience, is directed to providing an integrated experience in surgery, office practice, and trauma, as well as, experience in clinical and basic science research. The range of experience is designed to provide the Fellowship participant with the background necessary to pursue the clinical practice of spine surgery and/or focus on a career in academic spine surgery.

During the Fellowship program the participant will be exposed to a variety of educational activities. These will include, but not necessarily be limited to: participation in spinal surgery; participation in and direction of didactic sessions; work with patients in office settings; teaching of other residents, students, and health related professionals; and conducting and reporting on appropriate research activities. By the completion of the Fellowship program, the participant will be able to diagnose and manage degenerative, traumatic, infectious, and neoplastic conditions of the spine.

As part of the ACGME's continuing efforts to ensure the all ACGME accredited fellowship programs are meeting educational standards, our Fellowship program requires its fellows to obtain competencies in the six areas below to the level expected of a new practitioner. To assure that each competency is attained, a systematic ongoing evaluation program is used. The following are the core competencies as listed on the ACGME web site. A full description of each competency is located in Appendix C of this document.

**Patient Care (PC)** Patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

**Medical Knowledge (MK)** Medical knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.

**Practice-Based Learning and Improvement (PBL)** Practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.

**Interpersonal and Communication Skills (IC)** Interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.
**Professionalism (P)** Professionalism as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

**Systems-Based Practice (SBP)** Systems-based practice as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

*Within the context of this document the specific core competencies that are addressed are delineated by the abbreviations that have been placed in parenthesis.*
EDUCATIONAL GOALS AND OBJECTIVES

In developing these goals and objectives, we utilized the following published guidelines:
*The Resident/Fellow Education Committee of the North American Spine Society

GOAL 1: To develop the spine surgery Fellow’s core knowledge underlying the clinical care of spinal disorders.

Objective 1: To demonstrate an understanding of the pathophysiology and natural history of the various common spinal disorders. (PC, MK)

Objective 2: To demonstrate an understanding of the biomechanical concepts of spinal stability and the effects of internal and external fixation on the stability of the spine. (MK)

Areas for Objectives 1 and 2:
- a. spinal anatomy and histology
- b. biomechanics
- c. physiology
- d. pathophysiology of degenerative diseases
- e. trauma and spinal cord injury
- f. infection
- g. neoplastic disease
- h. osteoporosis
- i. deformity

GOAL 2: To develop the spine surgery Fellow’s knowledge and skills for the evaluation of patients with spinal disorders.

Objective 3: To be able to appropriately evaluate patients presenting with spinal disorders in a variety of clinical settings, including the emergency department and the outpatient clinic. This would include competency with the physical and neurological examination of the patient. (PC, MK, PBL, IC)

Areas for Objective 3:
- a. herniated disc
- b. spinal stenosis
- c. spinal fractures
- d. spinal cord injury
- e. infection
- f. tumors
- g. spondylolisthesis
- h. back and neck pain
Objective 4: To be able to appropriately order and evaluate diagnostic imaging of the spine. (PC, MK, SBP)

Areas for Objective 4:
- plain radiographs
- CT
- MRI
- Myelogram
- discogram
- nuclear medicine studies
- electrophysiologic studies

GOAL 3: To develop the spine surgery Fellow’s knowledge and skills for formulating and executing a non-operative treatment plan for patients with spinal disorders. The Fellow should develop experience in the non-operative management of spinal disorders.

Objective 5: To be able to formulate, articulate, and execute a treatment plan for patients with spinal disorders. (PC, MK, IC)

Objective 6: To be able to manage the initial and definitive care of patients with spinal trauma. (PC)

Objective 7: To be able to treat non-operative spinal disorders in the outpatient setting. (PC, MK, IC, P)

Areas for Objectives 5, 6, and 7:
- cervical, thoracic, and lumbar trauma
- spinal immobilization
- placement of skeletal traction
- medical and hemodynamic management of patients with acute spinal injuries
- management of low back pain
- management of neck pain
- role of non-operative modalities of spinal care

GOAL 4: To develop the spine surgery Fellow’s experience in performing surgery on the spine for an encompassing range of spinal conditions defined below.

Objective 8: To be able to participate in spine surgery at a level appropriate for a spine surgeon. (PC, MK)

Areas for Objective 8:
- disc herniation surgery
- decompressive laminectomy/foraminotomy
- non-instrumented and instrumented posterolateral fusion
- interbody fusion (anterior, posterior, and transforaminal)
- anterior and posterior bone graft harvest
f. instrumentation of spinal fractures

h. correction of spinal deformities

i. decompression of spinal tumors
EDUCATION PROGRAM

The education program is designed to address each of the three major goal areas: knowledge of surgical and non-surgical techniques, research, education, and teaching. Because each of these skill areas require somewhat different yet related experiences, the education program occurs in a variety of settings. Further, the Fellow is exposed to diverse areas of expertise including adult and pediatric deformities, degenerative conditions, traumatic injuries, and infectious disorders of the cervical, thoracic, and lumbar spine. They must learn the process by which primary and metastatic tumors are evaluated and treated.

Educational Settings

The development of the Fellow's knowledge and surgical techniques for treating diseases of the spine occurs in a variety of educational settings. Under attending supervision, the Fellow directs an outpatient spine clinic. Surgery cases are coordinated through the availability of the adult and pediatric orthopedic spine surgeons and of selected neurosurgeons from the Department of Neurosurgery at SUNY Upstate Medical University. The Fellow is involved in other clinical education activities as outlined in the "Clinical Activities" section of this manual.

Routine educational experiences take place in two major settings:

1. **Upstate Bone and Joint Center**  
   Enclosed within this space are: offices of the attending spine staff, outpatient clinics of the Orthopedic Department, radiography with an up-to-date MRI imaging facility, outpatient surgery facility; and anesthesia maintains a center for performing therapeutic and diagnostic blocks.

2. **SUNY Upstate Medical University Hospital, Crouse Hospital, VA Hospital**  
   Surgery experiences occur predominantly at the SUNY Upstate Medical University and associated clinics. The operating rooms are equipped to perform all types of spinal procedures including anterior and posterior approaches to the cervical, thoracic, and lumbar spine. Instrumentation of the appropriate areas is aided by excellent radiographic assistance both within and outside of the operating rooms. All of the services expected from a medical school are available within the University Hospital including Neurosurgery, Rehabilitation, Neurology, and Medical Subspecialties. Crouse Hospital is a private hospital that is connected to Upstate by a bridge. Upstate Orthopedics maintains an elective spine practice that runs out of this facility. Fellows have the option of participating in patient care at Crouse. In rare instances, the Fellow may have the opportunity to work at the VA Hospital.

Spine Surgery Educational Conferences

Conferences are a major part of the program (Core lecture series -Appendix A, B). The Fellow is expected to attend the Monday morning spine conference, Wednesday morning Orthopedic Grand Rounds as well as Thursday morning indications conference as defined below. At times the Fellow may be asked to lecture medical students and physical therapy students on spinal disorders.
The fund of medical knowledge is obviously best increased though the clinical experiences described above. However, this is supplemented through interactive didactic sessions and conferences.

a) **Monday Morning Spine Core Curriculum Conference:** The spine service hosts a weekly didactic session that is open to the entire Orthopedic and Neurosurgery residency. These sessions occur each Monday beginning at 6:45AM. Sessions are topic based as outlined by the core lecture series list presented below. Prior to each session, a reading is assigned. All participants including medical students, residents, fellows, and attending staff are expected to have completed this reading prior to the session. The first fifteen minutes of the session are a topic based case presentation to stimulate an interactive discussion concerning the reading and pertinent case. Promptly at 7:00AM a PowerPoint lecture concerning the topic is given. These lectures are topical presentations that have been prepared by the attending staff. In an effort to improve the residents’ and fellows’ understanding of the topic, encourage resident and fellow participation, and provide the opportunity for residents and fellows to speak about a topic in front of an audience, residents and fellows are asked to "present" the lecture. All of the attending staff are present during the lecture and the attending staff who developed the power point lecture moderates and guides the session. An open discussion forum occurs at the conclusion of the lecture. The last fifteen minutes of the session are reserved for a five question multiple choice quiz. These quizzes are utilized to ensure that the quality of the educational session has been maintained and offer participants the opportunity to practice standardized exam questions on the topic.

b) **Thursday Indications Conference:** Each Thursday morning beginning at 8:00AM, all of the scheduled spine cases for the upcoming week are reviewed. This is a small group session that consists of all of the spine attendings along with the spine fellow and on-service residents. The chief complaint along with a clinical history is presented along with supporting radiographic studies. All participants are asked to propose a surgical plan. The indications, possible surgical treatments, potential complications, and current supporting literature are discussed. Residents and fellows are expected to present and discuss the specific cases they will be involved with for the next week.

c) **Quarterly Spine Morbidity and Mortality Conference:** During the course of the quarter, all of the medical and surgical complications on the spine service are tracked. These are formally presented in a session that is only open to the residency and spine surgery service. During this quality assurance conference, complications, as well as techniques for their prevention, are reviewed.

d) **Bimonthly Spine Journal Club:** Every other month a journal club session will occur outside of the work place. A classical spine article along with a series of interesting and current articles will be reviewed. These sessions are voluntary sessions, but provide the fellow and residents who attend a relaxed environment to review spine topics and stay up to date on the current body of spine literature.
Spine Meeting Attendance
To encourage the Fellow to transmit his/her knowledge, they will be encouraged to attendance at one or two major spine meetings during the year will be encouraged. This is to foster overall exposure to the area of spinal surgery and to particularly stimulate the Fellow’s research interests.

Also, this serves to develop conference presentation skills. The Fellow is strongly encouraged to consult with the attending faculty and the personnel in the laboratory to facilitate these activities and to develop research protocols early in the year to allow sufficient time to complete these presentations (MK, IC).

Curriculum Components
Each of the required curriculum components is addressed in multiple settings. This assures that the component includes both cognitive as well as psychomotor experiences. See table below.

Relationship of Curriculum Components and Educational Settings

<table>
<thead>
<tr>
<th>Curriculum Component</th>
<th>Educational Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upstate Bone and Joint Center</td>
</tr>
<tr>
<td>Anatomy</td>
<td>X</td>
</tr>
<tr>
<td>Physiology</td>
<td>X</td>
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<tr>
<td>Biomechanics</td>
<td>X</td>
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<tr>
<td>Microbiology</td>
<td>X</td>
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<tr>
<td>Pathology</td>
<td>X</td>
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<tr>
<td>Clinical Disorder of the Spine</td>
<td>X</td>
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<tr>
<td>Pathogenesis of Disorder</td>
<td>X</td>
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<tr>
<td>Operative and Non-Operative Treatment</td>
<td>X</td>
</tr>
<tr>
<td>Intradural Pathology</td>
<td>X</td>
</tr>
<tr>
<td>Interdisciplinary Treatment</td>
<td>X</td>
</tr>
</tbody>
</table>

Research Settings
A portion of the education program is devoted to providing the Fellow direct experience in conducting appropriate research. The IHP (Institute for Human Performance) is a world class basic science facility that has played host to a number of groundbreaking projects in the history of spine surgery. Alongside world class basic science researchers, fellows will be provided with the opportunity to receive direct
experience in conducting appropriate research in the laboratory. Fellows will have the opportunity to conduct, evaluate, and report on clinical and basic science research pertaining to the spine. It is expected that the fellow will develop and complete at least one research project at a level equivalent to that required for presentation at a professional meeting and/or peer reviewed publication. Ample assistance through the research staff at the IHP, as well as, the attending staff will be provided.

Available within the research space housed at the IHP is equipment to facilitate a multitude of types of biomechanical research, the investigation of cell cultures, and the effect of various environmental and therapeutic measures related to cell growth and development. The specific equipment available includes appropriate computers, MTS machines, CT scanner, X-ray, laboratory space, and equipment for cell cultures.

It is our goal that during the first one to two months, the spine Fellow is offered the opportunity to develop his/her own research project or joining a project under investigation. The spine Fellow is free of clinical duties and is able to participate in research approximately five to ten hours per week. The Fellow will generally complete one or more clinical and/or basic science projects during the year, resulting in appropriate presentations and publication. An ample amount of clinical data is also available for review. Our facility employs a dedicated research coordinator who facilitates a variety of clinical studies that are ongoing at our institution. These resources and personnel facilitate the design and gathering of information for both prospective and retrospective studies. The spine surgery faculty work directly with the Fellow and with other researchers in the community to identity and provide appropriate linkages to assure the success of the research component. (MK, IC)

Clinical Activities
Educational activities include hands-on direct experiences in the outpatient and surgical settings. These experiences are designed to develop the physician's knowledge of surgical techniques for treating diseases of the spine.

The fellow directs an outpatient spine clinic. Fellows are asked to see their own patients and make decisions in an independent fashion. An attending spine surgeon is available during the clinic hours for direct review patients' clinical presentations and radiographs. The fellow is allowed to formulate and implement a treatment plan for each patient.

These plans may range from diagnostic procedures and/or the implementation of therapeutic procedures including conservative care and surgery. Patients appropriate for operative intervention are taken to the operating room by the fellow and the appropriate attending. During this clinic, fellows also act as a first line in the teaching process for the residents who are seeing patients alongside of them. Residents are expected to present to the fellow. The fellow is expected to provide feedback and teaching to the resident during this process. The supervising attending will be present and available to provide guidance if necessary. The pace of this clinic is much slower than the normal office setting, facilitating the educational process. Fellows will also participate in a fellow’s only clinic that occurs on Thursday mornings. During this clinic, the fellows are allowed to independently see patients and make decisions on their treatment. Fellows are expected to review their findings and plan with the supervising attending staff.
It is the responsibility of the spine fellow to closely monitor the care of all spinal trauma patients. Trauma patients are initially evaluated in the emergency room by the junior orthopedic staff. Those patients found to have specific spinal injuries are then discussed by the junior resident staff with the spine fellow and the orthopedic spine attending. An appropriate course of action is then identified and implemented with the spine fellow monitoring the patient's course. The relationship between the orthopedic spine section and the neurosurgery spine section is excellent, allowing the spine fellow access to the expertise of both surgical specialties. The spine fellow functions as a coordinator between the neurosurgical and orthopedic services, directing the care of the injured patient.

The fellow in spine surgery quickly achieves a level of knowledge in spine problems that exceeds that of the more junior resident staff. The resident staff on the spine service includes one junior resident and a chief resident. They are exposed to a similar spectrum of spinal problems as is the fellow. It is expected that the residents will perform surgery commensurate with their level of training. It is not expected that the spine fellow will perform all spinal procedures at the expense of the resident staff. The fellow serves as a source of information and guidance to the resident staff in their treatment of elective spinal admissions and spinal trauma. The fellow serves as a first line of consultation for many trauma cases and will staff the Spine Clinic at a consulting level. As residents rotate on a quarterly basis through the Spine Service, the spine fellow provides continuity with regard to spine patients.

A surgical procedure may involve the participation of the attending surgeon with the spine fellow and a resident, with a resident alone, or with a spine fellow alone. Further responsibility is given to the spine fellow as his/her expertise increases, allowing him/her to monitor some of the resident's surgery with appropriate attending coverage.
MOONLIGHTING POLICY
In order to comply with both the New York State mandated work regulations as well as the ACGME regulated work restrictions, moonlighting by orthopedic spine surgery fellows is not allowed.

SUPERVISORY LINES OF RESPONSIBILITY FOR CARE OF PATIENTS
The responsibility of the fellow for inpatients, patients cared for in the emergency room, outpatient clinics, operating room and private offices are for direct and comprehensive patient care. Fellows are expected to provide accurate assessment of patients' ailments and provide an appropriate treatment plan. Furthermore, the fellow will be responsible for instructing residents, medical students and hospital personnel in the appropriate management of these patients. The fellow is under the supervision at all times of the attending spine staff, either through direct supervision with the physician physically present or indirectly through verbal communications in which the physician can become immediately available. On each and every patient case, the fellow reports directly to the attending surgeon involved with the respective case. Under no circumstance is the fellow expected to provide care without interaction with the attending staff. For the management of inpatients, daily communication with the attending staff provides the appropriate supervision for management of these patients. In the emergency room setting, patients are managed by resident and fellow staff with direct communication via telephone with the attending staff on call. If the case arises where there is a change in patient status (i.e. floor to ICU; neurological compromise; vascular compromise; escalating poor interaction with patient, staff or consultant; the onset of an at risk procedure; or patient death), the Fellow should call the attending immediately. Should the case warrant further assessment or treatment, the attending staff directly interacts with the patient and directly supervises the Fellow. In outpatient clinics, supervision is provided through direct contact with the fellow while seeing patients. This also applies to the private offices. Lastly, in the operating room, the fellow is under the direct supervision of the attending staff at all times.

PROFESSIONALISM
It is our hope that at the fellowship level, professionalism will have already been a part of the fellow's prior education. However, this competency will be reinforced during the fellowship year. Fellows will reinforce their knowledge of professionalism through their interactions with patients in the attending's private office and in the hospital setting. Fellows will be asked to demonstrate this competency in the fellow's clinic. Systematic evaluation of this competency will occur. Remediation for this competency is available.

EVALUATION
The Fellowship experience is an exceptionally complicated educational program because of the requirements for competency in many medical areas. Likewise, the needs and interests of an individual entering the program can be quite varied. The standards for Advanced Evaluation Programs have defined the basic curricular goals that apply to the Fellowship. Further, there is a need to assist the fellow identify individual goals and objectives based on his/her own skills and interests, strengths and
weaknesses, as well as future career plans. The fellowship experience of necessity is an accumulation of many diverse educational experiences and involves many teachers.

PERFORMANCE EVALUATIONS

Each quarter, attendings that have had interactions with the Fellow are asked to evaluate the progress of the Fellow and to provide specific comments on both areas of excellence and areas needing attention. An evaluation form has been developed for this purpose. The Fellow is evaluated in each of the ACGME core competencies (Appendix C).

FORMAL REVIEWS

The program director conducts formal reviews with the fellow. These are conducted quarterly. The purposes of these reviews are to: determine the progress of the fellow in meeting the program goals and objectives; identify any areas needing attention; and to develop specific plans of correction to assure that the fellow meets the goals and objectives of the program. The program director will write or dictate a summary note for the review meeting. At the conclusion of the fellowship, the program director completes a final review of the fellow. The program director meets with the fellow to discuss this evaluation and to request feedback on the fellow’s experience in the program.

GENERAL DISCUSSION QUESTIONS

The following questions are suggested as discussion topics appropriate for each review:

1. What progress has been made toward the professional and personal goals?
2. How does the information gathered to date impact upon the Fellow's goals?
3. What problems has the Fellow encountered?
4. What are some of the concerns (of the Fellow and of the faculty members)?
5. In what ways can faculty members help set or reach goals which are not yet attained?

OTHER UPSTATE GME POLICIES

The Upstate Medical University Department of Orthopedics complies with the policies established by the Upstate Medical University GME office. A listing of the GME policies is available in the Resident Handbook and can be accessed online at:

http://www.upstate.edu/gme

ACGME PROGRAM REQUIREMENTS

The ACGME program requirements for training in Orthopedic Surgery of the Spine can be found on the ACGME web site at:

APPENDIX A

Topics covered in the Spine Core Lecture Series and Supplemental Sessions:

**Basic Science:**

- Cervical and Lumbar Anatomy and Biomechanics
- Surgical Approaches to the Cervical Spine (Anatomy Lab Session)
- Surgical Approaches to the Lumbar Spine (Anatomy Lab Session)
- Disc Anatomy and Physiology
- Spinal Cord Anatomy, Spinal Cord Syndromes
- EMG and NCV in the Evaluation of Spinal Cord Disorders and Spinal Cord Injury

**Evaluation and Non-Surgical Disorders of the Spine:**

- Physical Examination of the Cervical and Lumbar Spine
- Radiographic Evaluations of the Spine
- Treatment of Acute L-5 Strain and Cervical Whiplash.
- Bracing, TNS, Traction, Outcomes Assessment of the Spine

**Disorders of the Spine:**

- Degenerative Disc Disease Cervical Spine
- Degenerative Disc Disease Lumbar Spine
- Managing Acute HNP Cauda Equina Syndrome
- Spinal Stenosis Cervical and Lumbar
- Spondylolisthesis
- Spondylolysis
- Osteoporosis/Kyphoplasty
- Sagittal Malalignment -Kyphosis, Flat Back Syndrome
- Inflammatory Conditions- RA, Ankylosing, Spondylolisthesis, DBH
- Adult Scoliosis
- Pediatric Scoliosis
- Kyphosis
- Spinal Infections
- Spinal Tumors
- Failed Back and Pain Clinics
- Trauma
- Spinal Cord Injury (Halo, Gardner Wells Tongs)
- Rehab Management

**Surgical Management of the Spine:**

- Instrumentation - Harrington Rod to Pedicle Screws
• Fusion to the Sacrum
• TDA
• Fusion of the Spine - Adjuvants and Basic Principles
**APPENDIX B:**

Monday Spine Core Curriculum Conference Tentative Schedule and Topics*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
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<tbody>
<tr>
<td>Week 1</td>
<td>Adolescent Idiopathic Scoliosis Part 1</td>
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<tr>
<td>Week 2</td>
<td>Spine Imaging</td>
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<tr>
<td>Week 3</td>
<td>Ankylosing Spondylitis (AIS) and Diffuse Idiopathic Skeletal Hyperostosis (DISH)</td>
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<td>Week 4</td>
<td>C-Spine Fractures</td>
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<tr>
<td>Week 5</td>
<td>Pediatric Spondylolysis &amp; Spondylolisthesis</td>
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<tr>
<td>Week 6</td>
<td>T/L Spine Fractures</td>
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<tr>
<td>Week 7</td>
<td>Spinal Cord Injury Management</td>
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<tr>
<td>Week 8</td>
<td>Rheumatoid Arthritis of the Cervical Spine</td>
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<tr>
<td>Week 9</td>
<td>Labor Day Holiday</td>
</tr>
<tr>
<td>Week 10</td>
<td>Make up/add on</td>
</tr>
<tr>
<td>Week 11</td>
<td>Adult Lumbar Scoliosis</td>
</tr>
<tr>
<td>Week 12</td>
<td>Topic Based Journal Club</td>
</tr>
<tr>
<td>Week 13</td>
<td>Epidurals &amp; Selective Nerve Root Blocks in Treatment of Lumbar Radiculitis</td>
</tr>
<tr>
<td>Week 14</td>
<td>Columbus Day Holiday</td>
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<tr>
<td>Week 15</td>
<td>Cervical Myelopathy</td>
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<td>Week 16</td>
<td>OITE Review</td>
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<tr>
<td>Week 17</td>
<td>Sagittal Imbalance</td>
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<tr>
<td>Week 18</td>
<td>Spondylolisthesis?</td>
</tr>
<tr>
<td>Week 19</td>
<td>Congenital Scoliosis –Veteran’s Day</td>
</tr>
<tr>
<td>Week 20</td>
<td>Lumbar Disc Herniation</td>
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<tr>
<td>Week 21</td>
<td>Cervical and Lumbar Physical Exam</td>
</tr>
<tr>
<td>Week 22</td>
<td>Spinal Tumors</td>
</tr>
<tr>
<td>Week 23</td>
<td>Make up/add on</td>
</tr>
<tr>
<td>Week 24</td>
<td>Christmas Holiday</td>
</tr>
<tr>
<td>Week 25</td>
<td>New Year’s Holiday</td>
</tr>
<tr>
<td>Week 26</td>
<td>Spinal Osteomyelitis</td>
</tr>
<tr>
<td>Week 27</td>
<td>Neuromonitoring</td>
</tr>
</tbody>
</table>

*Week 24 & 25 are holidays, no specific content included.*
Week 28  Martin Luther King Day
Week 29  Treatment of Cervical Disc Herniations
Week 30  Journal Club
Week 31  Lumbar Stenosis
Week 32  President’s Day Holiday
Week 33  Thoracic Kyphosis
Week 34  Make up/add on
Week 35  Epidural Hematoma and Cauda Equina Syndrome
Week 36  Structure and Function of the Intervertebral Disc
Week 37  Iatrogenic Neurological Injury
Week 38  Myelomeningocele & Neuromuscular Scoliosis
Week 39  The Aging Spine
Week 40  Spinal Biomechanics
Week 41  The Failed Back
Week 42  Sports Related Spinal Injury
Week 43  Journal Club
Week 44  Pseudoarthrosis of the Spine
Week 45  Outcome Tools in Adult and Pediatric Spine Surgery
Week 46  Memorial Day Holiday
Week 47  Degenerative Disc Disease and Back Pain
Week 48  The Growing Spine
Week 49  Motion Preservation and Disc Replacement

*subject to change
APPENDIX C

ACGME GENERAL CORE COMPETENCIES
The program must integrate the following ACGME competencies into the curriculum:

PATIENT CARE AND PROCEDURAL SKILLS:
Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows:
- must demonstrate the ability to assess clinically the neurologic function of the spinal cord and nerve root; and,
- must demonstrate competence in:
  - prudent use of diagnostic laboratory tests (including electrophysiologic monitoring);
  - indications for and interpretation of imaging studies of the spine, including an appreciation of the risk and information expected of the procedures;
  - development of a treatment plan to manage patients with traumatic, congenital, developmental, infectious, metabolic, degenerative, and rheumatologic disorders of the spine;
  - recognition and management of complications of treatment (including appropriate consultations with subspecialists); and,
  - assessment of the effectiveness of diagnostic and treatment methods.

Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. Fellows:
- must demonstrate competence in their ability to perform successfully the procedures required for practice of the subspecialty; and,
- must demonstrate competence in operative skills for the management of patients with orthopedic disorders of the spine

MEDICAL KNOWLEDGE:
Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows:
- must demonstrate competence in their knowledge of:
  - the indications, risks, and limitations of the commonly performed procedures in the subspecialty;
  - the basic sciences related to the musculoskeletal system;
  - the natural history of spinal degeneration; and,
  - familiarity with currently used research methods.

PRACTICE-BASED LEARNING AND IMPROVEMENT:
Fellows are expected to develop skills and habits to be able to meet the following goals:
- systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; and
- locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.

**INTERPERSONAL AND COMMUNICATION SKILLS:**
Fellows must demonstrate interpersonal and communication skills that result in effective exchange of information and collaboration with patients, their families, and health professionals.
- This must include acquisition of teaching skills in evaluation and care of spinal problems.

**PROFESSIONALISM:**
Fellows must demonstrate a commitment to carrying out professional responsibilities and adherence to ethical principles.

**SYSTEMS-BASED PRACTICE:**
Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.