

#### Learning objectives

Degeneration - Analyze the patient history and physical examination findings

Degeneration - Use appropriate diagnostic tools

Degeneration - Use evidence-based decision making when recommending operative and nonoperative interventions

Degeneration - Use appropriate nonoperative treatments

Degeneration - Select and perform appropriate surgical procedures for specific indications

Degeneration - Prevent/manage operative and postoperative complications

Degeneration - Use outcome measures to assess the effectiveness of each intervention



Start	End	Title	Moderators/Faculty	Location/Documents	Duration	
08:00	08:30	Other Registration		Courtyard by Marriott Taipei, Nangang	30	
08:30	08:40	Opening remarks Welcome (Introduction of AOSpine)	Chiung Chyi Shen		10	
08:40	10:15	Percutaneous Endoscopic Thoracic and Lumbar Spinal Surgery	Chien-Ming Chen; Jwo-Luen Pao		95	
08:40	09:00	Lecture Physiology, biomechanics, and degeneration of lumbar spine	Jwo-Luen Pao		20	
09:00	09:20	Lecture Uniportal inter-laminar vs transforaminal approach for discectomy and decompression for lumbar stenosis	Chien-Ming Chen		20	
09:20	09:40	Lecture Biportal full endoscopic spine surgery for variety of degenerative lumbar diseases	Jwo-Luen Pao		20	
09:40	10:00	Lecture Video-assisted thoracoscopic treatment of spinal lesions in the thoracolumbar junction	Tsung-Jen Huang		20	
10:00	10:15	Discussion Case solution and interactive discussion (3 cases)	Chien-Ming Chen		15	
10:15	10:25	Coffee break			10	
10:25	12:20	MIS Spinal Fusion and Percutaneous Transpedicular Screws Fixation (pTPS)	Gabriel Liu; Chiung Chyi Shen		115	



10:25 10:45 Lecture Surgical options of lumbar fusion: (anterior, oblique, lateral, posterior) Indications, technical and limitation  10:45 11:05 Lecture Oblique lumbar interbody fusion (OLIF): Surgical techniques and common pitfalls and outcome  11:05 11:25 Lecture Transforaminal lumbar interbody fusion (TLIF): Surgical techniques, common pitfalls and outcome  11:25 11:45 Lecture MIS strategies for lumbar degenerative scoliosis  11:45 12:05 Lecture Computer aided navigation and robotic spine surgery: Is it worthwhile?  12:05 12:20 Discussion Case solution and interactive discussion (3 cases)  12:20 13:00 Lunch Symposium Rafael Bundoc; Kang Lu  12:04 Lecture Cortical Bone Trajectory (CBT): Evidence and tips surgical techniques and common pitfalls  12:40 13:00 Lecture Utility of 3D printing in difficult spine surgeries  13:00 14:20 Dynamic Stasbilization Rafael Bundoc; Kang Lu  Pedicle Screw-based Dynamic Stabilization	Start	End	Title	Moderators/Faculty	Location/Documents	Duration	
Oblique lumbar interbody fusion (OLIF): Surgical techniques and common pitfalls and outcome  11:05			Lecture Surgical options of lumbar fusion: (anterior, oblique,				
Transforaminal lumbar interbody fusion (TLIF): Surgical techniques, common pitfalls and outcome  11:25	10:45	11:05	Oblique lumbar interbody fusion (OLIF): Surgical	Cheng-Hung Lee		20	
MIS strategies for lumbar degenerative scoliosis  11:45	11:05	11:25	Transforaminal lumbar interbody fusion (TLIF): Surgical	Chiung Chyi Shen		20	
Computer aided navigation and robotic spine surgery: Is it worthwhile?  12:05 12:20 Discussion Case solution and interactive discussion (3 cases)  12:20 13:00 Lunch Symposium Rafael Bundoc; Kang Lu  12:20 12:40 Lecture Cortical Bone Trajectory (CBT): Evidence and tips surgical techniques and common pitfalls  12:40 13:00 Lecture Utilitity of 3D printing in difficult spine surgeries  13:00 14:20 Dynamic Stasbilization Rafael Bundoc; Kang Lu  80	11:25	11:45		Gabriel Liu		20	
Case solution and interactive discussion (3 cases)  12:20 13:00 Lunch Symposium Rafael Bundoc; Kang Lu 40  12:20 12:40 Lecture Cortical Bone Trajectory (CBT): Evidence and tips surgical techniques and common pitfalls  12:40 13:00 Lecture Utilitiy of 3D printing in difficult spine surgeries  Rafael Bundoc 20  13:00 14:20 Dynamic Stasbilization Rafael Bundoc; Kang Lu 80	11:45	12:05	Computer aided navigation and robotic spine surgery:	Chien-Min Lin		20	
12:20 12:40 Lecture Cortical Bone Trajectory (CBT): Evidence and tips surgical techniques and common pitfalls  12:40 13:00 Lecture Utilitiy of 3D printing in difficult spine surgeries  Rafael Bundoc; Kang Lu  80	12:05	12:20		Cheng-Hung Lee		15	
Cortical Bone Trajectory (CBT): Evidence and tips surgical techniques and common pitfalls  12:40 13:00 Lecture Utility of 3D printing in difficult spine surgeries  Rafael Bundoc; Kang Lu  80	12:20	13:00	Lunch Symposium	Rafael Bundoc; Kang Lu		40	
Utilitiy of 3D printing in difficult spine surgeries  13:00 14:20 Dynamic Stasbilization Rafael Bundoc; Kang Lu 80	12:20	12:40	Cortical Bone Trajectory (CBT): Evidence and tips	Jau-Ching Wu		20	
	12:40	13:00		Rafael Bundoc		20	
Pedicle Screw-based Dynamic Stabilization	13:00	14:20	Dynamic Stasbilization	Rafael Bundoc; Kang Lu		80	
			Pedicle Screw-based Dynamic Stabilization				



Start	End	Title	Moderators/Faculty	Location/Documents	Duration	
13:00	13:20	Lecture Evidence and tips for pedicle screw based dynamic stabilization: Cons, complications and recent trends	Chien-Min Lin		20	
		Interspinous Spacer-based Dynamic Stabilization Devices				
13:20	13:40	Lecture Evidence and tips for Interspinous spacer-based dynamic stabilization: Cons, complications and recent trends	Kang Lu		20	
13:40	14:00	Lecture Dynamic stabilization vs fusion for treatment of symptomatic degenerative spine diseases	Rafael Bundoc		20	
14:00	14:20	Discussion Case solution and interactive discussion (3 cases)	Rafael Bundoc		20	
14:20	14:35	Coffee break			15	
14:35	15:15	MIS Option	Yen-Jen Chen; Uei-Chyi Chuah		40	
14:35	14:55	Lecture MIS percutaneous screw fixation in spinal trauma	Uei-Chyi Chuah		20	
14:55	15:15	Lecture MIS options for lumbar degenerative disease	Tsung-Jen Huang		20	
15:15	17:00	Lumbar Adjacent Segment Disease (ASD) and Other Complications	Yen-Jen Chen; Uei-Chyi Chuah		105	



Saturday, 00 Jul 2019 (Day 1)						
Start	End	Title	Moderators/Faculty	Location/Documents	Duration	
15:15	15:35	Lecture Could the topping-off technique prevent ASD after pedicle screw-based fusion?	Kang Lu		20	
15:35	16:05	Lecture Risks of ASD requiring surgery after lumbar fusion and how to treat it	Uei-Chyi Chuah		30	
16:05	16:25	Lecture Evidence based medicine for degenerative lumbar spondylosis surgery: When a fusion is needed?	Yen-Jen Chen		20	
16:25	16:45	Lecture Current strategy for determining sagittal spinal alignment and surgical correction	Gabriel Liu		20	
16:45	17:00	Discussion Case solution and interactive discussion (3 cases)	Yen-Jen Chen		15	



#### Sunday, 07 Jul 2019 (Day 2)

Start	End	Title	Moderators/Faculty	Location/Documents	Duration
08:00	10:15	Degeneration of Cervical Diseases	Chih-Ju Chang; Jau-Ching Wu	Courtyard by Marriott Taipei, Nangang	135
08:00	08:20	Lecture Physiology, biomechanics, and degeneration of cervical diseases	Wen-Tien Wu		20
08:20	08:40	Lecture Anterior surgical treatment for multilevel CSM (corpectomy/fusion, multiple ACDF): Indication, limitations	Uei-Chyi Chuah		20
08:40	09:00	Lecture Multilevel CSM: How to choose between laminoplasty and instrumented cervical laminectomy	Gabriel Liu		20
09:00	09:20	Lecture Combined anterior-posterior approaches for CSR/CSM: Indications and outcome	Wen-Tien Wu		20
09:20	09:40	Lecture Critical review of multiple level cervical fusion, disc replacement and hybrid construct	Jau-Ching Wu		20
09:40	10:00	Lecture Adjacent segment degeneration - Can we avoid in cervical arthroplasty?	Chiung Chyi Shen		20
10:00	10:15	Discussion Case solution and interactive discussion (3 cases)	Jau-Ching Wu		15
10:15	10:30	Coffee break			15
10:30	12:30	OPLL and Other Cervical Spine Lesions	Chi-Chien Niu; Wen-Tien Wu		120



### Sunday, 07 Jul 2019 (Day 2)

Start	End	Title	Moderators/Faculty	Location/Documents	Duration	
10:30	10:50	Lecture Genetics, heritability, etiology and natural history of OPLL and surgical strategy	Chi-Chien Niu		20	
10:50	11:10	Lecture  Multisegment laminoplasty or instrumented cervical laminectomies for the OPLL: Indications and outcome	Chi-Chien Niu		20	
11:10	11:30	Lecture Anterior approaches for treatment of multilevel severe OPLL	Chih-Ju Chang		20	
11:30	11:50	Lecture Anterior and/or posterior approach to treat cranio-cervical and upper cervical spine pathology	Wen-Tien Wu		20	
11:50	12:10	Lecture Cervical sagittal balance: A biomechanical perspective can help clinical practice?	Chih-Ju Chang		20	
12:10	12:25	Discussion Case solution and interactive discussion (3 cases)	Chiung Chyi Shen		15	
12:25	12:30	Closing remarks Closing remark			5	