Program Book and Syllabus The 23rd Annual Gabor Racz Advanced Interventional Budapest Pain Conference

and Workshop Budapest, Hungary August 27–29, 2018

The 38th **FIPP** and 10th **CIPS Exam** Budapest, Hungary August 30, 2018

Contents

Greetings 3.
Board & Organizers 4.
Faculty7.
General Information 8.
Useful Information 11.
Detailed Program13.
FIPP and CIPS Awards Ceremony19.
Syllabus 23.
Authors Index 61.
Industry Technical Presentations 62.
Acknowledgement63.
Exhibitor and Sponsor Profiles 64.



Greetings

Dear Friends!

Welcome to the 23rd Advanced Gabor Racz Interventional Pain Conference and Workshop!

Our adventure began with the 1st Advanced Interventional Pain Conference after the Russian occupation ended in Hungary. The creation of our program began following a Hungarian television station's visit to my department at Texas Tech University's Health Sciences Center to do a nationally televised program. After meeting with a number of physicians, especially Edit Racz with her diligent work, we organized what was to be the best possible program.

Professor Peter Sótonyi was and is a true leader. His beginnings, from being head of the forensic pathology department and subsequently Dean of Semmelweis University's Medical School, have offered this program the very best. The collaboration between what was being formed as the World Institute of Pain, the Budapest Program and the Texas Pain Society occurred from my office. From the inception of our conference, until very recently, Ms. Paula Brashear was a key leading figure.

The intent was and still is to have the best program possible. We listened to the participants; an expressed desire for teaching and learning more interventional procedures. We have always strived for a balanced program where the main goal is the education of the physicians. On Day 1, I recognized that having a high quality program is beneficial to the individual physicians, patients and the industry. Past participants have rated the ultrasound section as one of the finest, and we continue to expand our topics to meet your needs.

I am very excited and pleased about the evolution of new concepts in neuromodulation, regenerative medicine, and specific therapeutic modalities that return people to work and reduce their dependence on narcotics. Yet, every one of the participants who prescribes narcotics, do so judicially and appropriately. Therefore, while not exactly interventional, it is part of quality patient care.

Everyone benefits from a better trained physician. Our high quality sponsors recognize that assisting education benefits them in the short and the long run. Without the help from our outstanding faculty and sponsors, as well as those behind the scenes, none of what we have achieved over the years would be possible.

We are very grateful to all of the above for making such an event possible. Most invited physicians feel it is an honor to be invited, but from the organizational point of view, a great honor is when great physicians accept the call and do their best.

Because of the multiplicity of topics, we will be running parallel rooms, so carefully review which topics you feel will improve quality patient care. As expected, Budapest will be even better than you remember. The food will be great, the entertainment vast. We have somewhere around 40 lecturers plus examinations for FIPP and CIP.

We are looking forward to seeing you in Budapest at the 23rd Annual Gabor Racz Advanced Interventional Pain Conference and Workshops.

Gabor Racz, MD, FIPP

Program Director Founder, Former President and Member of Executive Board WIP Grover E. Murray Professor Chairman Emeritus Texas Tech University Health Sciences Center

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Technical Director

D. Mark Tolliver, MA (USA)

CONFERENCE SECRETARIAT

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General Information

Conference Dates and Site

27-29 August, 2018 • Kempinski Hotel Corvinus Budapest H-1051 Budapest, Erzsébet tér 7-8.

Practical Workshop Dates and Site

27-29 August, 2018 • Semmelweis University Labs H-1091 Budapest, Üllői út 93.

FIPP Exam

30 August, 2018 • Semmelweis University Labs H-1091 Budapest, Üllői út 93.

CIPS Exam

30 August, 2018 • Semmelweis University Labs H-1091 Budapest, Üllői út 93.

Bus transfer

Daily bus transfers are provided within the venues (Kempinski - Semmelweis University).

Official Conference Language

The official language of the Conference is English.

CME

The 23rd Annual Gabor Racz Advanced Interventional Budapest Pain Conference and Workshop, Budapest, Hungary, 27/08/2018-29/08/2018 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 18 European CME credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the Union Européenne des Médecins Spécialistes and the American Medical Association, physicians may convert EACCME® credits to an equivalent number of AMA PRA Category 1 CreditsTM. Information on the process to convert EACCME® credit to AMA credit can be found at <u>www.ama-assn.org/education/</u><u>earn-credit-participation-international-activities.</u>

Live educational activities, occurring outside of Canada, recognised by the UEMS-EACCME® for ECMEC®s are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada.

Technical Information for Speakers

The organizers kindly ask you to bring your presentations with you on a USB memory stick. Your presentation must be uploaded to the computers in the meeting room with the help of the assisting technicians responsible for the dedicated room. The presentation uploading deadline is the last coffee break prior to your scheduled presentation. Please note that double slide projection and personal laptops cannot be used.

Program changes

The organizers cannot assume liability for any changes in the scientific program. Organizers will do their best to keep the participants up to date and possible changes in the program will be immediately communicated.

Internet Access

Free of charge Wi-Fi service is available at the venue.

Commercial Exhibition

The exhibition will be opened from Monday, 27 August until Wednesday, 29 August at the Hotel Kempinski "The Grand Room". Delegates will have the opportunity to meet representatives of pharmaceutical and diagnostic equipment companies at their stands to discuss new developments and receive up-to-date product information.

Registration and Information Desk opening hours at Hotel Kempinski

Sunday, 26 August	14.00 - 19.00
Monday, 27 August	07.00 - 13.30
Tuesday, 28 August	07.15 - 13.30
Wednesday, 29 August	07.15 - 13.30

FIPP / CIPS Exam Registration at Hotel Kempinski

Wednesday, 29 August	16.00 - 19.00

Hotline to the Registration Desk

+36 70/608-6806

Registration Fee (Regular Fees after 15 July, 2018)

Pain Conference & Practical Workshop WIP member	1600 Euro
Pain Conference & Practical Workshop non member	1800 Euro
Pain Conference WIP member	1150 Euro
Pain Conference non member	1350 Euro
Accompanying person fee	350 Euro
Award Ceremony Dinner	120 Euro
FIPP and CIPS Exam registration fee	2500 USD

Pain Conference & Practical Workshop fees include

- Access to all conference sessions and commercial exhibition
- Access to the Practical Workshop (two afternoons)
- Final Program
- Welcome Reception
- Attendance Award Ceremony
- Coffee and Tea (during breaks)
- Lunches

Pain Conference registration fees include

- Access to all conference sessions and commercial exhibition
- Final Program
- Welcome Reception
- Award Ceremony
- Coffee and Tea (during breaks)
- Lunches

The fee for accompanying person includes

- Attendance at the Welcome Reception
- Attendance at the Award Ceremony

OFFICIAL SOCIAL EVENTS

Faculty Dinner (only for faculty members)

Sunday, 26 August, 2018, 19.00-21.00 VigVarjú Restaurant (H-1051 Budapest, Vigadó tér 2.) Dress Code: business casual Meeting point: Hotel Kempinski lobby at 18.30

Welcome Cocktail (for all registered guests)

Monday, 27 August, 2018, 19:00-21:00 Kempinski Hotel, Room One & Two Program: Csillagszemű Dance Ensemble Dress Code: Business casual

Award Ceremony Dinner (for all registered guests)

Tuesday, 28 August, 2018, 19:30-23:00 Hungarian National Gallery (H-1014 Budapest, Szent György tér 2.) Program: Award Ceremony and Flautett Flute Quartet Dress Code: formal Meeting point: Hotel Kempinski lobby at 19.00

HOTELS

Kempinski Hotel Corvinus Budapest ***** (Conference venue) H-1051 Budapest, Erzsébet tér 7-8. Mercure Budapest City Center **** H-1052 Budapest, Vaci utca 20

CANCELLATION POLICY OF REGISTRATION AND HOTEL RESERVATION

All cancellations should be sent to Conference Office in written form. All refunds will be processed after the Conference.

- 100% refund (minus 50 EUR administrative fee) in case of cancellation received before 28 July 2018.
- No refund in case of cancellation received after 28 July 2018.

USEFUL INFORMATION

Recommended taxi company

To reach the hotels and to avoid any inconvenience, please use City Taxi company:

City Taxi Phone: +36 1 211 1111 www.citytaxi.hu

Credit card payment is available in every car of City Taxi. Please note, that all licensed Budapest taxi companies have yellow cars and has the same rates, placed clearly visible on the screens. Airport – Hotel Kempinski route fares should be around 7000-9000 HUF.

Climate

The climate of Budapest is continental. In August usually nice warm weather can be expected with a max. temperature of 25-28°C, while the lowest temperature during the night ranging between 12-15 °C. Nevertheless some rainy days can be expected.

Insurance

The registration fees do not include provision for the insurance of participants against personal accidents, illness, cancellation, theft, property loss or damage. Participants are advised to take adequate personal travel insurance.

Currency

The Forint (HUF), the official national currency, is convertible. The exchange rates applied in Budapest banks, official exchange offices and hotels may vary. All the major credit cards are accepted in Hungary in places displaying the emblem at the entrance. Exchange rate: 1 Euro = 325 HUF 1 USD = 285 HUF in August, 2018

Credit Cards

In general, VISA, EC/MC and American Express credit cards are accepted in most restaurants, cafés, shops and petrol stations.

Stores and Shopping

The opening hours of Budapest stores are generally 10.00-18.00 on weekdays and 10.00-13.00 on Saturday. The shopping centers are open from 10.00-21.00 from Monday to Saturday and from 10.00-18.00 on Sunday.

Pharmacies

Budapest's pharmacies (gyógyszertár in Hungarian) are well stocked and can provide medicaments for most common ailments. Each of the 23 districts has an all-night pharmacy open every day, a sign on the door of any pharmacy will help you locate the closest one.

Electricity

The voltage in Hungary is 230V, 50 Hz AC.

Parking

If you drive a personal or rented car, always try to park at a guarded parking lot and do not leave any valuables in the car. Please note, that Budapest is divided into paying areas, with one parking meter in each street. The maximum parking time duration is 2 hours, tariffs may vary.

Tipping

Service charges are not added to all accounts by hotels and restaurants. You may tip taxi drivers, hotel porters and restaurant waitstaff (up to about 10% of the bill) if you wish to acknowledge exceptional service. At any time, tipping is your choice.

Emergency Details

In an emergency call 112 for Ambulance, Fire Service or Police.

Lost and Found

Any found item may be turned into the Registration Desk. Enquiries about lost items can be directed to the Registration Desk also.

Mobile phones

Please respect the speakers and presenters by ensuring that your mobile phone is switched off during the scientific sessions.

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Detailed Program

General Lectures

MONDAY, 27 AUGUST

SESSION 1

ROOM TWO & THREE

Moderators: Serdar Erdine, MD, FIPP and Miles Day, MD, FIPP

- 07.15 Opening Remarks Gabor B. Racz, MD, FIPP Craig Hartrick, MD, FIPP, President of WIP Edit Racz, MD, FIPP Agnes Stogicza, MD, FIPP, CIPS
- 07.30 Achievements of WIP Past 2 years Craig Hartrick, MD, FIPP
- 07.50 Epidural Neuroplasty 10 year follow-up Ludger Gerdesmeyer, MD, PhD, FIPP
- 08.10 Advances in Understanding the Role of the DRG in Neuropathic Pain Marshall Devor, PhD
- 08.30 Radiofrequency Targets Mert Akbas, MD, FIPP
- 08.50 Continuing Evolution of Pulsed Radiofrequency Serdar Erdine, MD, FIPP
- 09.10 Coffee break

SESSION 2

ROOM TWO & THREE

Moderators: Aaron Calodney, MD, FIPP and Ricardo Ruiz-López, MD, FIPP

- 09.30 Regenerative Medicine and Bone Marrow Aspirate Phillipe Hernigou, MD
- 09.50 MSCs Are Not Stem Cells Arnold Caplan, PhD
- **10.10** Integrating Regenerative Medicine into an Interventional Practice Aaron Calodney, MD, FIPP
- 10.30 Spinal PRP Report on 50 Cases Ricardo Ruiz-López, MD, FIPP
- 10.50 Success in Procedural Treatment of Migraine and Cluster Headache Natalia Murinova, MD, M H A
- 11.10 Role and Future of endoscopic spine surgery in the treatment of symptomatic conditions of the spine Anthony Yeung, MD, FIPP
- **11.30** Accumulating evidence on peridural membrane/Road to PhD Hemmo Bosscher, MD, PhD, FIPP
- 11.50 Percutaneous Discectomy Sudhir Diwan, MD, FIPP

- 12.10 Questions and Answers
- 12.30 Lab Instruction Miles Day, MD, FIPP
- 12.45 Lunch
- 13.30 Transport to Workshop at Semmelweis University
- 14:00-16:30 Cadaver Workshops

TUESDAY, AUGUST 28

INDUSTRY SECTION

ROOM TWO & THREE

07.30-09.00 (Not part of CME program; see industry section of program on Page 62.)

SESSION 3

ROOM TWO & THREE

- 09.00 Medical Legal Aspects of Interventional Pain Standiford Helm, MD, FIPP
- 09.20 How do You Write a Good Article? Craig Hartrick, MD, FIPP and Robert Levy, MD
- 09.40 Radiofrequency Innovations in Pain Management Ricardo Ruiz-López, MD, FIPP
- 10.00 Coeffe break

SESSION 4

ROOM TWO & THREE

Moderators: Adnan A. Al-Kaisy, MB ChB, FRCA, FFPMRCA, FIPP

- **10.30** Recent Advances in Electrical Neuromodulation Peter Staats, MD, MBA, FIPP
- 10.50 Does SCS Frequency Matter? Adnan A. Al-Kaisy, MB ChB, FRCA, FFPMRCA, FIPP
- 11.10 Evidence in Neuromodulation Robert Levy, MD
- 11.30 Wireless Neuromodulation of Different Wave Forms and Rates – The Favorable Evidence Richard Rauck, MD, FIPP
- 11.50 Neurolysis in Cancer Pain Serdar Erdine, MD, FIPP
- 12.10 Questions and Answers
- 12.30 Lab Instruction Miles Day, MD, FIPP
- 12.45 Lunch
- 13.30 Transport to Workshop at Semmelweis University
- 14:00-16:30 Cadaver Workshops

WEDNESDAY, 29 AUGUST

SESSION 5A

ROOM TWO

Moderators: Monique Steegers, MD, FIPP and Edit Racz, MD, FIPP

- 07.30 The Education of Pain Physicians Eric Wilson, BSc (med), MB, BCh, FIPP
- 07.50 Continuing Education Striving to Learn More Juan Carlos Flores, MD, FIPP
- 08.10 Fluoro vs Ultrasound Should They be Combined or Separated? Jee Youn Moon, MD, PhD, FIPP, CIPS
- 08.30 MRI of Low Back Pain Doug Beall, MD
- 08.50 Where Does the Opioid Crisis Lead Us? Peter Staats, MD, MBA, FIPP
- 09.10 Coffee break

SESSION 6A

ROOM THREE

Moderators: Peter Staats, MD, FIPP Adnan A. Al-Kaisy, MB ChB, FRCA, FFPMRCA, FIPP, FIPP

- 09.30 Urine Toxicology Miles Day, MD, FIPP
- 09.50 Q & A Narcotic Related Issues Aaron Calodney, MD, FIPP
- 10.20 Radiation Safety Juan Carlos Flores, MD, FIPP
- 10.40 Cryoneurolysis Andrea Trescot, MD, FIPP, CIPS
- 11.00 Detoxification from High Dose Opioids Carl Noe, MD, FIPP
- **11.20** Cancer Pain Management: Are we making the difference? Kris Vissers, MD, PhD, FIPP
- 11.40 CRPS New Principals: The Road back to work Gabor B. Racz, MD, FIPP
- 12.00 Entrapment Neuropathies in Cancer Pain Andrea Trescot, MD, FIPP, CIPS
- 12.20 Questions and Answers/Lab Instructions Miles Day, MD, FIPP
- 12.45 Lunch
- 13.30 Transport to Workshop at Semmelweis University
- 14:00-16:30 Cadaver Workshops

WEDNESDAY, 29 AUGUST

SESSION 5B

ROOM THREE

Moderators: Andrea Trescot, MD, FIPP, CIPS and Standiford Helm, MD, FIPP

- 07.30 Clinical Research End Points and Outcomes? Ludger Gerdesmeyer, MD, PhD, FIPP
- **07.50** Vertebral Augmentation Why the Studies Were Wrong Kenneth B. Chapman, MD, FIPP
- 08.10 Cervicogenic Headaches Miles Day, MD, FIPP
- 08.30 Neurosurgery and the Pain Patient Lorand Eross, MD, FIPP
- **08.50** Scarring Triangle New Developments of Epidural Neuroplasty Gabor B. Racz, MD, ABIPP, FIPP
- 09.10 Coffee break

SESSION 6B

ROOM THREE

Moderatotrs: Ricardo Ruiz-López, MD, FIPP and Craig Hartrick, MD, FIPP

- 09.30 Cervical facets (MBB, intraarticular, RF) Sudhir Diwan, MD, FIPP
- 09.50 Lumbar facets MBB, RF Where is the evidence leading us? Jan Van Zundert, MD, PhD, FIPP
- **10.10** Lumbar sympathetic/ superior hypogastric Javier de Andres, MD, FIPP
- 10.30 Caudal Neuroplasty Experience with over 13,000 Cases Ira Fox, MD, FIPP
- 10.50 Transforaminal/DRG (including catheter) Fabricio Dias Assis, MD, FIPP
- 11.10 Neuroplasty for spinal stenosis Favorable Evidence for Longer outcomes

Standiford Helm, MD, FIPP

11.30 Stellate/T2/3 sympathetic Kenneth B. Chapman, MD, FIPP

11.50 Splanchnic/celiac John Nelson, MD, FIPP

- 12.10 Stem Cell Augmentation of the Intervertebral Disc Doug Beall, MD
- 12.30 Why Become a FIPP? Monique Steegers, MD, PhD, FIPP
- 12.45 Lunch
- 13.30 Transport to Workshop at Semmelweis University
- 14:00-16:30 Cadaver Workshops

Detailed Program - Ultrasound Lectures

MONDAY, AUGUST 27

CIPS PREPARATORY COURSE DAY 1

ROOM ONE

ROOM ONE

- 08:00 Opening remarks Agnes Stogicza, MD, FIPP, CIPS
- **08:05** Ultrasound anatomy and procedures of the lumbosacral spine Charles Oliveira, MD, FIPP, CIPS
- **08:35** Ultrasound anatomy and procedures of the thoracic spine Andre Mansano, MD, FIPP, CIPS
- 09:00 Ultrasound anatomy and procedures of the head and cervical spine Agnes Stogicza, MD, FIPP, CIPS
- 09:30 Live model workshop (CTLS spine) Only accessible for those registered for the ultrasound track (Track D)
- 10:00 Coffee break
- 10:30 Live model workshop (CTLS spine) Only accessible for those registered for the ultrasound track (Track D)
- 12:00 Lunch
- 13:30 Transport to Workshop at Semmelweis University
- 14:00-16:30 Cadaver Workshops (CTLS spine)

TUESDAY, AUGUST 28

CIPS PREPARATORY COURSE DAY 2

- **08:00** Ultrasound anatomy and procedures of the shoulder joint Stanley Lam, MBBS, FHKIMM, CIPS, FIPP
- 08:20 Ultrasound anatomy and procedures of the elbow joint, wrist and hand

George Chang Chien, MD

- **08:40** Ultrasound anatomy and procedures of the ankle and foot Philip Peng, MBBS, FRCPC
- **09:00** Ultrasound anatomy and procedures of the hip and knee joint Micha Sommer, MD, FIPP, CIPS
- 09:20 Live model workshop (MSK) Only accessible for those registered for the ultrasound track (Track D)
- 10:00 Coffee break
- 10:30 Live model workshop (MSK) Only accessible for those registered for the ultrasound track (Track D)

12:00 Lunch

13:30 Transport to Workshop at Semmelweis University

14:00-16:30 Cadaver Workshops (MSK)

WEDNEDSAY, AUGUST 29

ULTRASOUND LECTURES

ROOM ONE

- 08:00 Knee intervention: update Philip Peng, MBBS, FRCPC
- 08:30 Regenerative medicine, prolotherapy for knee. There is evidence David Rabago, MD
- 09:00 Use of ultrasound in diagnosis Stanley Lam, MBBS, FHKIMM, CIPS, FIPP
- 09:30 Peripheral nerve stimulation Andrea Trescot, MD, FIPP, CIPS
- 09:50 Coffee break
- **10:30** Regenerative medicine, PRP, stem cells. What is the evidence? George Chang Chien, MD
- **10:50** Tunnel syndromes Peripheral nerve entrapment Wesley Wesley Chih-chun Chen, MD, CIPS
- **11:00** Cryoablation and pulsed radiofrequency for peripheral neuralgias Agnes Stogicza, MD, FIPP, CIPS
- **11.20** Deep Gluteal Syndrome: is this just a name change from piriformis syndrome?

Philip Peng, MBBS, FRCPC

11.40 CIPS oral exam demo Micha Sommer, MD, FIPP, CIPS Agnes Stogicza, MD, FIPP, CIPS Charles Oliveira, MD, FIPP, CIPS

- 12.10 Lunch
- 14:00-16:30 Cadaver Workshops

FIPP and CIPS Awards Ceremony

28 AUGUST, 2018 HUNGARIAN NATIONAL GALLERY

Master of Ceremonies

Gabor B. Racz, MD, FIPP, Founding Budapest Conference Director

Opening Remarks

Agnes Stogicza, MD, FIPP, CIPS, Local Organizing Committee

Presentation of 2018 Trail Blazer Awards

Péter Sótonyi, MD, PhD, DSc presented by Lorand Eross, MD, PhD, FIPP and Gabor B. Racz, MD, FIPP Richard Rauck, MD, FIPP presented by Craig Hartrick, MD, FIPP and Gabor B. Racz, MD, FIPP

Presentation of Certificates

Peter Staats, MD, MBA, FIPP & Monique Steegers, MD, Phd, FIPP

Recognition of FIPP honorees from Budapest 2017, Miami 2018, and London 2018 Agnes Stogicza, MD, FIPP, CIPS

Recognition of CIPS honorees from, Budapest 2017, Miami 2018 and London 2018

35TH FIPP (FELLOW OF INTERVENTIONAL PAIN PRACTICE) EXAMINATION 31 AUGUST, 2017 BUDAPEST

King Hei Stanley Lam	Hong Kong
Hassan Yüce	Turkey
Serbülent Beyaz	Turkey
Martin Griger	Slovakia
Eyal Ben-Bassat	Israel
Jonas Araujo	Brazil
Yu Chuan Tsai	Taiwan
Abdulrahman Abdulfattah	Saudi Arabia
Emre Almac	Netherlands
Sangbum An	South Korea
Sadiq Bhayani	UK
Ashish Chakravarty	India
Jae-Ky Choi	South Korea
Savas Çömlek	Turkey
Gözde Dagistan	Turkey
Gustavo Fabregat Cid	Spain
Vitto Bruce Fernandes	Brazil
Timur Issaev	Belgium
Yunyoung Kim	South Korea
Amir Moayednia	Iran
Ender Sir	Turkey
Alan Nazha	Australia
Rober Tirpak	Czech Republic
Jinwon Uhm	South Korea
	King Hei Stanley Lam Hassan Yüce Serbülent Beyaz Martin Griger Eyal Ben-Bassat Jonas Araujo Yu Chuan Tsai Abdulrahman Abdulfattah Emre Almac Sangbum An Sadiq Bhayani Ashish Chakravarty Jae-Ky Choi Savas Çömlek Gözde Dagistan Gustavo Fabregat Cid Vitto Bruce Fernandes Timur Issaev Yunyoung Kim Amir Moayednia Ender Sir Alan Nazha Rober Tirpak Jinwon Uhm

1049	Derron Wilson	USA
1050	Carlo Biundo	Italy
1051	Pierre de Villiers	South Africa
1052	Mustafa Kurcaloglu	Turkey
1053	Heidi Mylenbusch	Netherlands
1054	Ovidiu Palea	Romania
1055	Alireza Rahimi Mamaghani	Iran
1056	Douglas Beall	USA

36TH FIPP (FELLOW OF INTERVENTIONAL PAIN PRACTICE) EXAMINATION 19 FEBRUARY, 2018 MIAMI

1057	Odilia Boldewijn	Netherlands
1058	Matthieu Cachemaille	Canada
1059	Raphael Campos	Brazil
1060	Michael Fujinaka	USA
1061	Hemant Kalia	USA
1062	Wei Lan	Ireland
1063	Scott Pritzlaff	USA
1064	Jonathan Royds	Ireland
1065	Fernando Schmidt	Brazil
1066	Enrique Borrás Rubio	Spain
1067	Cesar Carcamo	Chile
1068	Martín García Muñoz	Spain
1069	Raquel Gonzalez Jimenez	Spain
1070	Maria Consuelo Nieto Iglesias	Spain
1071	Irene Riquelme Osado	Spain
1072	Victor Silva Ortiz	Mexico
1073	Moises Vasquez Caicedo Muñoz	Spain
1074	Maria Luisa Franco Gay	Spain

37TH FIPP (FELLOW OF INTERVENTIONAL PAIN PRACTICE) EXAMINATION 6 MAY, 2018 LONDON

1075	Juraj Mlaka	Slovakia
1076	Anand Murugesan	India
1077	Senthil Jayaseelan	UK
1078	Eunjyoung Kim	South Korea
1079	Jun Woo Kim	South Korea
1080	Bert Vanneste	Belgium
1081	Sabina Cordoba Holt	Spain
1082	Yuk Ming Sunny Lee	Hong Kong
1083	Chou WeiHan	Taiwan
1084	Jong Bum Choi	South Korea
1085	Kyounghoon Yim	South Korea
1086	Feng-Sheng Lin	Taiwan

1087	Yehia Kamel	UK
1088	Sonia Ortiz-Garcia	Spain
1089	Annelies Fieuws	Belgium
1090	Rajesh Aggarwal	UK
1091	David Pang	UK
1092	Haggai Sharon	Israel

7TH CIPS (CERTIFIED INTERVENTIONAL PAIN SONOLOGIST) EXAMINATION 31 AUGUST, 2017 BUDAPEST

68	Jennifer Hah	USA	Buda17
69	Neeraj Jain	India	Buda17
70	Andre Mansano	Brazil	Buda17
71	Andrea Trescot	USA	Buda17

8TH CIPS (CERTIFIED INTERVENTIONAL PAIN SONOLOGIST) EXAMINATION 19 FEBRUARY, 2018 MIAMI

72	Fathi Al-Kadhi	Qatar	Miami18
73	Rohedi Asmara	Indonesia	Miami18
74	Lynn Cintron	USA	Miami18
75	Gonzalo Diaz Regañon Vilches	Spain	Miami18
76	Adel Elmallah	Kuwait	Miami18
77	Manuel Herrero Trujillano	Spain	Miami18
78	Peter Inkpen	Canada	Miami18
79	Ana Carolina Lima	Brazil	Miami18
80	Agustin Mendiola	Spain	Miami18
81	Vanessa Moreira Lima Finato	Brazil	Miami18
82	Jen-Li Pan	Taiwan	Miami18
83	I-Tzun Tsai	Taiwan	Miami18
84	Hing Fai Tsang	Hong Kong	Miami18
85	Ming-Chih Kao	USA	Miami18

9TH CIPS (CERTIFIED INTERVENTIONAL PAIN SONOLOGIST) EXAMINATION 6 MAY, 2018 LONDON

86	Anand Murugesan	India	London18
87	Ozlan Kamil	Malaysia	London18
88	Madhan Pandian	India	London18
89	Nackhwan Kim	South Kore	a London18
90	Eugene Lim	Singapore	London18
91	Carl Chen	Taiwan	London18
92	Manikandan Rajarathinam	Canada	London18
93	Zulfugar Yusifov	Azerbaidjar	London18
94	Ann-Katrin Fritz	UK	London18
95	Yi-Pin Chiang	Taiwan	London18



Syllabus

CRAIG T. HARTRICK, MD, FIPP

BIOGRAPHICAL SKETCH

Craig T. Hartrick, MD, FIPP is the current President of the World Institute of Pain. He is a former Professor of Biomedical Sciences (Pharmacology) and Professor of Anesthesiology (retired) at Oakland University William Beaumont School of Medicine. He currently remains a Clinical Professor of Health Sciences at Oakland University in Rochester, Michigan. He recently completed 12 years of service as Editor-in-Chief of Pain Practice. His research interests have included both basic and clinical science, with over 70 studies as principal investigator. He is well published, with over 200 peer-reviewed articles, abstracts, and textbook chapters. As President and Co-founder of Caventure Drug Discovery, Inc., his current investigations are devoted to novel analgesic discovery.

LECTURE

Achievements of WIP - Past 2 years

LUDGER GERDESMEYER, MD, PHD, FIPP

BIOGRAPHICAL SKETCH

Since 2008 Chairman and Professor at the Mare Clinic Kiel Orthopaedic surgery $\&\ \mbox{Traumatology}$

Since 2006 Senior Consultant and Professor at the Technical University Munich

Since 2010 Chairman and Professor at the medical University of Kiel – Orthopaedic surgery & Traumatology

Clinical focus: Joint Arthroplasty, Revision, Surgery, Joint preserving techniques, Tumor Surgery, Spine Surgery, Pain management

Scientific focus: Clinical Trials, Evidence based Medicine

Awards

1. SICOT Award 2002

2. SICOT Award 2003

3. DIGEST Preis 2003 (Deutschsprachige Internationale Gesellschaft für Stosswellentherapie)

- 4. AAOS Award outstanding lecture
- 5. DIGEST Preis 2005
- 6. Lecture Award outstanding lecture Korean Orthopaedic Association 2006
- 7. ACFAS Award 2007

LECTURE

Epidural Neuroplasty – 10 year follow-up

MARSHALL DEVOR, PhD

BIOGRAPHICAL SKETCH

Marshall Devor is the Alpert Professor of Pain Research at the Hebrew University of Jerusalem (HUJI). He was born in Toronto, Canada in 1949. His bachelor's degree is from Princeton University (1970) and his PhD from MIT (1975). He was a postdoctoral fellow with the pain research pioneer Prof. P.D. Wall at University College London and subsequently at HUJI. There he progressed from Research Associate (1977) to Senior Lecturer, Associate Professor and finally Professor in 1988. His research has focused on the neurobiology of neuropathic pain, and more recently also on mechanisms involved in loss of consciousness and pain-free surgery. His laboratory has published extensively in the pain field, with work of a notably integrative nature involving neurophysiology, computer simulations, neuroanatomy (light and electron microscopy), genetics, and behavioral models. He is author of ~300 publications, career citations ~22,000, h-index = 73.

LECTURE

Advances in Understanding the Role of the DRG in Neuropathic Pain

Ever since Tinel reported that dysesthesias and pain can be evoked by percussion over a site of nerve injury it has been clear that afferent axons at injury sites can become electrically hyperexcitable and ectopic pain drivers. However, pain sometimes persists despite attempts to block neuromas or nerves central to the injury site. This presentation will consider evidence that the dorsal root ganglion (DRG) constitutes a second peripheral neuropathic pain generator, one that is potentially active in a variety of chronic pain conditions and is hence a promising target for interventional pain management. Specifically, experimental observations indicate that it is possible to selectively suppress ectopic discharge originating in the DRG by applying dilute concentrations of membrane stabilizing drugs such as lidocaine to the surface of the ganglion within the intervertebral foramen. This stops ectopic impulse initiation (electrogenesis) without blocking impulse conduction along sensory or motor axons that traverse the foramen and without generating background paresthesias. Sustained suppression of ectopic electrogenesis can be accomplished by intraforaminal delivery of non-blocking concentrations of a membrane stabilizing drugs using an indwelling pump system. By filling the pump reservoir with a concentrated drug solution and using a very low pumping rate one should be able to achieve long intervals between refills. Intraforaminal delivery of dilute lidocaine has the potential to control pain in many clinically important chronic pain conditions including postherpetic neuralgia, radicular low back pain, trigeminal neuralgia and phantom limb pain.

MERT AKBAS, MD, FIPP

BIOGRAPHICAL SKETCH

Mert AKBAS is an associative professor of Anesthesiologist and Pain management physician at Akdeniz University, School of Medicine in Turkey. He joined the Akdeniz University faculty in 1993. He is the associative proffesor and clinical instructor at division of Algology. He earned his medical degree at Akdeniz University, School of Medicine in 1999. He completed his anesthesia residency in Akdeniz University, Antalya, and started his pain management fellowship program first as an observer doctor at Texas Tech University Health Sciences Center in Pain Management Clinic, Lubbock/TX-USA and later on as an clinical doctor in Istanbul University Faculty of Medicine, Division of Algology, Istanbul/TURKEY between the years 2004 and 2006. He is Algology Board certified and pain specialist in Turkey is since 2007, and FIPP since 2006. His areas of clinical interest are neuromodulation and decompressive neuroplasty. Dr. Akbas is the current chair of WIP Turkish Section and a member of WIP, INS and Turkish Society of Algology.

LECTURE

Radiofrequency Targets

RF application

Craniofacial pain; trigeminal, sphenopalatine RF Chronic cervical pain; facet, rhizotomy, DR Ganglionotomy Pain arising from thoracic spine; facet, rhizotomy, DR Ganglionotomy Low back pain; facet, rhizotomy, DR Ganglionotomy Pain arising from intervertebral disk Pain arising from sacral and pelvic region CRPS; stellate, thoracic, lumbar RF sympathatectomy Visceral pain; splanchnic sympathatectomy Pain arising from peripheral nerves; pulse RF Cancer pain: Percutaneous cordotomy, trigeminal RF, cervical, lumbar rhizotomy Radiofrequency Applications - Two Basic Rules 1. Must be applied by trained and experienced doctors 2. Must be applied under operating room environment. Patient must be prepared as if he/she will be operated Radiofrequency (RF) Applications Applicable under local anaesthesia

- Lesion size can be controlled (duration and heat)
- Resilience duration after application is short
- Mortality and morbidity rates are very low
- Can be repeated if necessary
- Correct placement of needle can be controlled

Technical Problems

- Deficiency of operator's knowledge and skills
- Inadequate informing of patient regarding applications
- Problems regarding injection
- Problems regarding RF procedure
- Problems regarding device and connection
- Inadequate and incorrect equipment
- Inadequate follow-up after the procedure

Trigeminal Nerve Block Sphenopalatine Ganglion RFT Cervical Facet Joint Denervation Suprascapular Nerve Block Stellate Ganglion RFT Thoracic Sympathetic RFT Thoracic DRG Thoracic Facet Joint Denervation Splanchnic Nerve RFT Lumbar Facet Joint Denervation Lumbar DRG Needle is forwarded with 'Tunnel Vision' and there is no bone contact Lumbar DRG Block Lumbar Sympathetic RFT SIJ Denervation Cordotomy

SERDAR ERDINE, MD, FIPP

BIOGRAPHICAL SKETCH

Education

- 1965-1972, High School: Kadıköy Maarif College(Education all in english)
- \bullet 1972-1978 Graduated from Cerrahpasa Medical Faculty of Istanbul University in 1978

• 1978-1982 Residency:Completed residency Department of Anesthesiology and Reanimation of Medical Faculty of Istanbul, Istanbul University in 1982

- 1986 ; Associate Professor in Anesthesiology
- 1991: Professor of Anesthesiology

• 1990-2011 Professor and Founder and Chairman of Department of Algology(-Pain Medicine)

- 2012: Specialist in Algology (Pain Medicine)
- •2000 Chair of Istanbul Pain Center, since 2000

Activities - Membership

- Founder and President of Turkish Society of Algology 1993-2015
- Founder and Former President of Turkish Society of Regional Anesthesia 1993-1995,1998-2003

• Former Turkish Representative in European Society of Regional Anesthesia 1993-2001

- Former Member of the executive Board of Neuromodulation Society 1995-2000
- Treasurer of EFIC/European Federation of IASP Chapters ,- 1996-1999,-
- Honorary Secretary of EFIC, 1999-2002,
- President Elect of EFIC, 2002-2005,
- President of EFIC, 2005-2008
- Past President of EFIC, 2008-2011
- Founding member of World Institute of Pain-WIP,1994
- General Secretary of WIP,1994-1999,-
- Vice President of WIP,1999-2002,
- v President Elect of WIP, 2005-2008,
- President of WIP ,2008-2011
- Chair of Board of Examination WIP,2005-2008
- CEO of the World Institute of Pain Foundation 2009-2014
- Member of the World Health Organization Advisory Expert Panel on Drug Dependence.2007-2011,2011-2014,2014-2016
- Current Member of the Executive Board of World Institute of Pain
- Member of the Procacci Pain Foundation in Italy
- Trustee of Nopain Foundation in Malta

Journals

• Editor of Turkish Journal of Pain-cited in index medicus 1988-2012

Awards

1. Awarded as the Young leader in medicine/Turkish Jaysees,1991for being the pioneer for Pain Medicine in Turkey

2. Chyristal Seagulf award by the Highschool he graduated given to outstanding students

3. Life Time Achievement Award, 2012, Medical Chamber of Istanbul, for establishing Pain Medicine in Turkey

4. Center of Excellence in Pain Practice Award for Comprehensive Multidisciplanary Pain Practice by World Institute of Pain in 2013

5. Honorary Member of European Pain Federation

6. Trail Brazzers award by World Insitute of Pain 2017

Invited Speaker on National and International Level

- Invited speaker in 170 lectures on international level
- Invited speaker in 200 lectures on national level

Books

- Author of 25 books in Turkish
- Editor-co editor of 8 books in English
- Author of 200 articles in international or national level mainly on interventional pain management.

Congresses he organized

- Organizer of 15 National Congresses on Pain Medicine in Turkey
- Organizer of World Congress of World Society of Pain Clinicians ,Istanbul,1996
- Organizer of the Annual Congress of European Society of Regional Anesthesia ,Istanbul,1999
- Organizer of 3rd World Congress of World Institute of Pain, Istanbul, 2001
- Organizer of the Pain in Europe V, triennial Congress of European Pain Federation , Istanbul,2006.

LECTURE

Continuing Evolution of Pulsed Radiofrequency

Continuous radiofrequency to treat several pain syndromes has been used since 1930's.Continuous administration of high frequency electrical current producing head and nerve damage.

First article related with Pulsed radiofreqency is published in 1998 by Menno Slujter et al.Short electrical pulses with higher voltage follower by a silent period where heas is washed out producing less nerve damage.

Since then 212 articles are published related with PRF on basic research, case reports, retrospective and prospective studies and rcts.

It was believed that a therapeutic electrical effect could be delivered without heating the nerve and therefore without coagulating it. This is achieved with brief bursts of RF energy separated by relatively long pauses between bursts to allow heat to dissipate in the target tissue, and became the theoretical basis of what is currently known as pulsed radiofrequency.

Emerging evidence from physical modeling, electron microscopy, electrophysiological measurement, and biological assay characterize biological effects of pulsed RF on nerves that may explain PRF's clinical effect.

The interpretation of equal "effectiveness" prompted a search for an explanation of a mechanism other than a heat lesion. The following hypothesis emerged: "irrespective of the heat produced, a radiofrequency current was therapeutic because of electrical effects it had on the target nerve," which gave rise to another mode of applying RF current.Thus the effects of PRF may be:

PRF adjacent to the rat cervical DRG induces early (3 h) and late (7 d) neuronal activity in the dorsal horn \acute{U} transsynaptal gene expression,

RF and PRF adjacent to the rabbit DRG produce morphological changes in the DRG cells, 2 weeks after the intervention, but PRF is less destructive,

Biological effect of PRF is unlikely to be related to overt thermal damage .The animalstudies show that PRF is less destructive compared with conventional RF; the antinociceptive effects are independent of temperature; PRF is selective for the small unmyelinated and lightly myelinated nerve fibers that transmit pain.

What we do not know are; What type of patients will respond, what is the optimal way to do it, and techical issues such as optimal electrode distance, ideal number of cycles, best needle orientation, and the highest acceptable threshold for sensory stimulation,

In this presentation we will also review the effect of pulsed radiofrequency in;

Pulsed radiofrequency in radicular pain

Pulsed radiofrequency in trigeminal neuralgia

Pulsed radiofrequency in occipital neuralgia

Pulsed radiofrequency in headache and cluster headache

Pulsed radiofrequency in shoulder pain

Pulsed radiofrequency in knee pain

Combination pulsed and conventional radiofrequency

Pulsed radiofrequency in radicular pain;

PRF more effective than placebo (cervical RCT 2006),PRF more effective than corticosteroids (lumbar RCT 2015).PRF interferes with the pain signal induced by herniated disc or nerve root compression ,the modulation of pain regulatory gene expression and there are no (neurologic) complications

Pulsed radiofrequency in trigeminal neuralgia;

Conventional RF is more effective than PRF,,conventional RF more complications than PRF,In patients at risk PRF can be considered ,there is a need for research on high voltage PRF

Pulsed radiofrequency in headache and cluster headache:

There are several studies related with pulsed radiofrequency in headache and cluster headache with good and unsatisfactory results thus to come to conclusion is not easy.

The situation is the same for patients having occipital neuralgia.

Pulsed radiofrequency in shoulder pain.

It is difficult to identify the type of shoulder pain treated, there is no consistency in the duration of PRF treatment ,PRF n suprascapularis is better than sham and equal to TENS.

There are also problems with the pulsed radiofrequency for knee pain related with methodolgy, anatomic and neural targests and the role of local anesthetic block.

Conclusions.

Major clinical applications for PRF are

PRF adjacent to the DRG for cervical and lumbar radicular pain ,

PRF of the n. occipitalis for treatment of occipital neuralgia

PRF of the Gasserian ganglion for trigeminal neuralgia and PRF of the pterygopalatine ganglion for cluster headache .For the future treatment of peripheral nerves under ultrasound guidance for different types of peripheral neuropathic pain may be considered. PRF is not the universal solution for all types of pain but may have advantages in selected indications.No (neurological) complications reported.

What is clearly evident from the literature is that pulsed RF does not produce a lesion. In this respect, pulsed RF is clearly a different procedure from thermal RF.There is no evidence that pulsed radiofrequency replicates the efficacy of thermal radiofrequency.

Pulsed RF is an attractive procedure for especially those who have limited clinical experience or technical skill in percutaneous interventions is the purported reduction or avoidance of side effects and complications associated with thermal RF,A procedure with fair to reasonable short-term outcomes may look attractive. Only when long-term follow-up is conducted does the true effectiveness, or lack thereof, emerge. If pulsed radiofrequency is misrepresented as the same procedure or an equivalent alternative to thermal radiofrequency, the inferior outcomes of the former may likely be misattributed to the latter.

Using pulsed RF instead of thermal RF, where the latter is indicated, denies the patient the benefit of a proven procedure in favor of an unproven one. Mistaking the poor outcomes of pulsed RF as an index of the efficacy of thermal RF neurotomy unjustly impungs what should be an effective procedure, if performed correctly. Pulsed RF can not and should not be interpreted as a substitute to thermal RF.This will tarnish the reputation of pRF.As it may be understood from basic research RF is neurodestructive while pRF is not. May be the mistake is to compare a neuroablative procedure with a non ablative procedure.

The poor outcomes of a technique in one indication does not justify that it may be effective in other indications if performed properly. It may be much better to differ the indications of CRF from PRF,

PHILIPPE HERNIGOU, MD

BIOGRAPHICAL SKETCH

Professor of Orthopaedic Surgery since 1989 -University Paris XII Hôpital Henri Mondor

- Member of the International Hip Society
- SICOT member (Treasurer)
- Past president of SOFCOT (French orthopaedic society)

Topics:

- Bone marrow grafting and stem cell research
- Hip surgery
- Knee surgery

LECTURE

Regenerative Medicine and Bone Marrow Aspirate

Abnormalities of mesenchymal stem cells are present in the bone marrow of some of these diseases as osteonecrosis and osteoarthritis. As a consequence, intramedullary vascularity is altered and this may be a predisposing factor for local osteonecrosis since changes in the bone marrow and bone remodelling are linked. Another consequence is the lack of osteogenic cells, which could influence two different events in the pathogenesis of disease, the occurrence of disease itself and the bone repair which should occur. The rationale for the use of cytotherapy in orthopedic surgery, as well as the different descriptions of the technique of implantation of osteogenic progenitor cells (autologous or allogenic), was evaluated and began as research program in 1985 by the author. This has led to new breakthroughs for the treatment of several disease in orthopedic surgery as osteonecrosis, osteoarthritis, nonunion and pathologies of tendon. The aim of this presentation is to describe: the rationale for use of autologous concentrated bone marrow; the effects both on tissue repair and on pair; the possibility of using ex vivo expanded autologous bone marrow derived stem cells.

ARNOLD I. CAPLAN, PHD

BIOGRAPHICAL SKETCH

Arnold I. Caplan, Professor of Biology and Director of the Skeletal Research Center at Case Western Reserve University. He received his Ph.D. from The Johns Hopkins University School of Medicine. Dr. Caplan is a national and international scholar focusing on experimentation in the area of musculoskeletal and skin development. He has published over 450 papers and manuscripts and has long been supported by the NIH and other non-profit and for-profit agencies for his efforts in trying to understand the development, maturation and aging of cartilage, bone, skin and other mesenchymal tissues and for his pioneering research on Mesenchymal Stem Cells.

LECTURE

MSCs Are Not Stem Cells

In the late 1980's, I called a group of cells that could be isolated from human bone marrow by their adherence to cell culture dishes in serum containing medium, Mesenchymal Stem Cells, MSCs. The reason for naming them "stem cells" was that following culture expansion, we could drive the cells into the bone, cartilage, muscle, marrow stroma, fat, etc. lineages in cell culture. As was the dogma of the day, we accepted the proposition that these multipotent progenitors were housed in the "stroma" of bone marrow or periosteum. Fast-forward to today, we know that this is not correct and indeed, most, if not all MSCs arise from the differentiation of perivascular cells, pericytes. Thus, the multipotency of MSCs can only be observed in cell culture and the functioning of MSCs in vivo has nothing whatsoever to do with multipotency.

Pericytes surround every blood vessel in the body. When blood vessels are broken or inflamed, the pericytes come off and differentiated into local MSCs. The MSCs secrete a curtain of molecules from their faces that inhibit the immune system from interrogating the injured tissue. From the back of the MSCs, molecules are secreted that affect the regeneration of the injured tissue. Given the above, I propose that MSCs name be changed to Medicinal Signaling Cells because they serve as localized "drugstores" for injured tissue.

MSCs are cells that have the capabilities to impact the perception of pain. This occurs because MSCs secret molecules that occupy opioid receptors , first at peripheral sites and eventually in central nervous system sites. A detailed mechanism will be proposed for how MSCs establish long-term therapeutic efforts long after the MSC itself is no longer present. Because these cells can modulate immune surveillance, allogenic cells can be introduced intravenously to aid in the regeneration of diseased or injured tissue. The therapeutic use of MSCs and how they function is the lecture focus.

Supported by NIH and the L. David and E. Virginia Baldwin Fund.

AARON K. CALODNEY, MD

BIOGRAPHICAL SKETCH

Aaron Kenneth Calodney, MD is Past President of the Texas Pain Society and Past President of the American Society of Interventional Pain Physicians (ASIPP). He has served on the board of the International Spine Intervention Society for many years and was Director of Education. Dr. Calodney is board certified in Anesthesiology and carries subspecialty certification in Pain Management through the American Board of Anesthesiology.

Dr. Calodney earned his medical degree from the University of Missouri School of Medicine and completed a family medicine internship at St Joseph's Hospital in Syracuse, New York. His residency in anesthesiology and subsequent interventional pain management fellowship was completed at the University of Texas Health Science Center at Houston. He subsequently completed a fellowship in pediatric anesthesia at the Denver Children's Hospital.

With particular interest in Spine and special interests including Neuromodulation and Intrathecal Drug Delivery, Biological treatment of the painful degenerative disc, Peripheral nerve injury, and Radiofrequency ablation, Dr. Calodney has presented and published many articles and textbook chapters. He is actively involved in clinical research and has delivered over 300 invited lectures in the US and abroad.

Dr. Calodney is a member of the American Society of Anesthesiologists, American Society of Regional Anesthesia and Pain Medicine, and many other professional societies.

He is an author of the first Evidenced Based Treatment Guidelines in Interventional Pain and Evidenced Based Guidelines for the Use of Opioids published in the Pain Physician journal and on the National Guideline Clearinghouse. Dr. Calodney previously was appointed by the governor of Texas to serve on the Advisory Committee on the

Regulation of Controlled Substances Act.

LECTURE

Integrating Regenerative Medicine into an Interventional Practice

RICARDO RUIZ-LÓPEZ, MD, FIPP

BIOGRAPHICAL SKETCH

President, Founder and CEO of CLINICA VERTEBRA, Barcelona Spine & Pain Surgery Center, (1987) Barcelona, Spain

Executive Member of the Board of Directors of HOSPITAL DELFOS, (since 1997) Barcelona, Spain

Founder (1993) and President (2011-2013) of the WORLD INSTITUTE OF PAIN, USA

LECTURE

Spinal PRP – Report on 50 Cases

NATALIA MURINOVA, MD, M H A

BIOGRAPHICAL SKETCH

Dr. Natalia Murinova is the Director of the Headache Clinic at the University of Washington, Seattle and Program Director of the UCNS-accredited Headache Fellowship. She oversees the neurological education of fellows in two accredited pain fellowship programs, as well as neurology residents, students, primary care providers and specialists in many fields. She has also developed a clinical research program using patient-provided information and chart data to study the clinical characteristics and outcomes of complex headache patients using data visualization and analysis and presented her research at many national and international conferences. She is also board certified in Neurology, Headache Medicine, and Addiction Medicine.

LECTURE

Success in Procedural Treatment of Migraine and Cluster Headache

Migraine and cluster headache are debilitating primary headaches. Migraine is considered the sixth most disabling illness globally with a billion sufferers worldwide. Most patients with these conditions are never diagnosed and do not receive effective evidence-based treatment.

Learning objectives for this course are:

1) Being able to accurately diagnose these conditions.

2) Review the evidence base for procedural treatments including trigger point injections, peripheral nerve blocks, onabotulinum A treatment, and sphenopalatine ganglion blocks.

3) Appraise safety concerns and precautions in performing these in a clinic or procedure suite.

4) Integrating procedures into multimodal headache care in an effective, and cost-effective, manner.

ANTHONY YEUNG, MD, FIPP

BIOGRAPHICAL SKETCH

Dr Yeung specializes in diagnosing and treating the patho-anatomy of back pain and sciatica from painful degenerative conditions of the lumbar spine, particularly discogenic pain from toxic annular tears, disc herniations, lumbar spondylosis and foraminal stenosis. His over 10,000 endscopic procedures since 1991 are effective in relieving both back and leg pain, by visualizing ,decompressing, and ablating the pain generator with an endoscope, using imaging as a guide, but confirming the pain source with a through history and clinical exam, followed by diagnostic and therapeutic injections. When the cinical parameters are validated, His philosophy and technique, guides his surgical technique that "guarantees" the anticipated surgical result for 2-10 years. The least invasive surgical procedure stages surgical intervention in order to avoid fusing as the last "bridge burning" surgery even for deformity and instability for stratified surgical indications. He is the developer of the Yeung Endoscopic Spine System, and has interest in developing a robotic and image guidance system to facilitate his technique to spine surgeons in training. He established an academic training center at the University of New Mexico. His career includes being president of local, state, national and international organizations. Hie is the current executive director of the International Intradiscal Therapy society (IITS.org)

LECTURE

Role and Future of endoscopic spine surgery in the treatment of symptomatic conditions of the spine

Consulting:

Aleeva Medical Elliquence, LLC Richard Wolf Medical Speaker's Bureau Stimwave, Inc. Cardan Robotics

Founder:

Ouroboros Surgitech

Investments:

Bonovo Orthopedics – Shareholder Cardan Robotics – Medical Advisory Board, nonvoting BOD Core Spine – Shareholder Integrity Implants – Medical Advisory Board Mobius - shareholder Nocimed – Shareholder Ouroboros - Shareholder Paradigm Spine - Shareholder Replication Medical – Shareholder Stimwave, Inc. – shareholder, patent holder Surgitech – Founder, shareholder Vivex Biomedical, Inc. - Shareholder Royalties: Richard Wolf Medical Instruments – Royalties Elliquence, LLC – Royalties Healthcare facilities (Direct Financial Interest): Arizona Recovery Care Center Squaw Peak Surgical Facility – Co-owner HJY/YESS centers in China Spine link

HEMMO BOSSCHER, MD, PHD, FIPP

BIOGRAPHICAL SKETCH

Hemmo Alexander Bosscher was born January 25th 1959 in Amersfoort, The Netherlands. He completed his medical school at the Vrije Universiteit in Amsterdam obtaining his medical degree in 1988. He did his residency in Anesthesiology at the University of Massachusetts in Worcester. He received additional fellowship training in pediatric anesthesiology at the Hospital for Sick Children in Toronto, Canada and cardiac anesthesiology at the Antonius Hospital in Nieuwegein, The Netherlands. In 1997 Dr. Bosscher took a position as assistant professor in anesthesiology at Texas Tech University in El Paso, Texas. However, interest in the treatment of chronic pain changed his career path. After completing a pain management fellowship at Texas Tech University in Lubbock, Texas, he started a successful private pain management practice in Lubbock, but has kept a clinical appointment at Texas Tech University and is currently professor of Anesthesiology. Since 2014, his practice is part of the Grace Health System in Lubbock. In 2017 Dr. Bosscher received his PhD degree under Professor Dr. Kris Vissers at the Radboud University in the Netherlands.

Dr. Bosscher's ongoing research involves the endoscopic evaluation and treatment of the spine in patients with low back pain. With the late Dr. James E. Heavner, DVM, FIPP, he published a series of papers and has given a number of presentations on the topic. He is currently a member of the American Society of Anesthesiologists, World Institute of Pain, and American Society of Anatomists. He is also active as a workshop instructor and examiner for WIP.

LECTURE

Accumulating evidence on peridural membrane/ Road to PhD

Clinical research using epiduroscopy indicates that back pain often originates from a soft tissue structure in the spinal canal: The peridural membrane

Anatomy and physiology of the peridural membrane suggests that this membrane has characteristics of synovium

The spine may be viewed as a synovial joint.

Excessive deformation of this "joint" may cause inflammation and sensitization of the peridural membrane resulting in back pain.

Experience with epiduroscopy indicates that this is a very common pain mechanism, hence the designation:" Common Low Back Pain".

SUDHIR DIWAN, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Sudhir Diwan, nationally and internationally recognized as a key opinion leader in the field of pain management, is the Executive Director of Manhattan Spine & Pain Medicine, Associate Clinical Professor at Albert Einstein College of Medicine, New York. Dr. Diwan was the former Director of the Tri-Institutional Pain Fellowship Program and Division of Pain Medicine at Ivy League Weill Medical College of Cornell University for 10 years, where he also served as associate professor of clinical anesthesiology, and on the faculty at the world renowned New York Presbyterian Hospital.

Dr. Diwan has published extensively in prestigious peer-reviewed medical journals and medical books on a variety of pain management topics. He is on the Editorial Board for the Pain Physician – an official journal of the American Society of Pain Physicians (ASIPP) since 2008, and Pain Practice – official journal of World Institute of Pain (WIP) since 2009. He was invited Guest Editor for Journal of Techniques in Regional Anesthesia and Pain Management 2009. Dr. Diwan is the Examiner for the Certification Board for American Board of Interventional Pain Physicians (ABIPP) and Fellow of Interventional Pain Practice (FIPP) offered by the World Institute of Pain. Dr. Diwan is Co-Editor for Intrathecal Drug Delivery for Pain and Spasticity, Vol 2, Timothy Deer, Series Editor, Elsevier-Saunders 2012, and Co-Editor for Diwan-Staats's Atlas of Pain Medicine Procedures, McGraw Hill Education 2015

In addition to his busy pain management practice in New York City, Dr. Diwan lectures extensively and interacts regularly with experts in the field of pain medicine nationalyly and internationally. He has been guest speaker for many noteworthy organizations including the American Society of Interventional Pain Physicians, WVSIPP – Pain Meetings, American Cancer Society, the American Society of Anesthesiology, the American Society of Regional Anesthesia and Pain Medicine, the World Institute of Pain, and numerous pain specialty societies and congresses in Europe, Brazil and Mexico. Currently he is CEO of NYSIPP and Course Co-Director of the Annuals NYSIPP/NJSIPP Pain Medicine Symposium, and First Executive Vice President, ASIPP.

LECTURE

Percutaneous Discectomy

STANDIFORD HELM, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Helm is the medical director of The Helm Center for Pain Management, a comprehensive, multidisciplinary pain management center located in Orange County, California. Dr. Helm has been a Fellow of Interventional Pain Practice since 2003. He has subspecialty certification in Pain Medicine from the American Board of Anesthesiology. He is a diplomate of the American Board of Interventional Pain Physicians, the American Board of Pain Medicine and is certified in Addiction Medicine from the American Board of Preventive Medicine. Dr. Helm went to Harvard College and to Tufts University School of Medicine. He did an Internal Medicine internship at Boston City Hospital and did his Anesthesia training at UCLA. Dr. Helm has been practicing interventional pain management in 1982. Dr. Helm is a past President of the American Society of Interventional Pain Physicians. He has published and lectured extensively on a variety of interventional pain management topics.

LECTURE

Medical Legal Aspects of Interventional Pain

Objectives:

Upon completion of this presentation, attendees will be able to discuss the manner

in which medical legal factors intersect with interventional pain management. These intersections include:

- Medical malpractice
- · Civil torts in the absence of malpractice
- Licensing Board Issues
- Federal opioid prescribing issues
- \bullet The role of interventional pain management physicians in determining future medical needs

 \bullet Interventional pain management controversies and standard of care issues, including

- Steroids,
- Where cervical interlaminar injections can be performed,
- · Issues with transforaminal injections,
- Anticoagulation, and
- The use of blunt needles.
- Product liability
- How to conduct a deposition.

CRAIG HARTRICK, MD, FIPP

How to write a scientific paper: a few tips

When writing a scientific paper it is critically important to consider both the immediate audience (editors and reviewers) and the intended audience (medical professionals and researchers). In both cases one can safely assume the audience already has a full schedule, making reading time precious. With that in mind, the author of the scientific paper must realize that this is not intended to be beautiful literature, colored with flowery descriptors and repetitive analogies. Rather the author needs to be concise to capture the interest of the reader quickly. Make the points directly and coherently; tell the story in a logical order.

It must be stressed that capturing the reader's interest should not include titillating or sensational claims or "headline" statements or questions as one might expect in a newspaper. You are not selling ads, but rather disseminating hopefully new and interesting information that will be of practical use. Accordingly use a title that addresses the main thesis and, if possible results, using the fewest words possible. The same principles apply to each section of the paper. Precision in the use of the English language need not extend the length of the paper. Quite the contrary, if words are chosen carefully one can parsimoniously provide highly specific detail. Common mistakes that detract from the message and obscure meanings will be briefly discussed. Tips to avoid these pitfalls, including plagiarism and self-plagiarism, will also be presented.

RICARDO RUIZ-LÓPEZ, MD, FIPP

LECTURE

Radiofrequency Innovations in Pain Management

PETER STAATS, MD, MBA, DABA, ABIPP, FIPP

BIOGRAPHICAL SKETCH

Dr. Staats was the founder of the division of Pain Medicine in the Department of Anesthesiology and Critical Care Medicine at Johns Hopkins University, where he was the division chief and director for over a decade. In this capacity he was youngest major division chief in the history of Johns Hopkins Hospital and was the first anesthesiologist to obtain surgical at any academic university. In 2003 he became a founding partner in Premier Pain Centers in New Jersey which merged with National Spine and Pain Centers (NSPC), the largest pain practice in the United States. He is currently the chief medical officer of both NSPC and electroCore. He serves on the United States Health and Human Services Pain task force subcommittee assessing opioids in the context of pain and addiction.

He is boarded by the American Society of Anesthesiology, the American Board of Interventional Pain Physicians (ABIPP) and the World Institute of Pain (FIPP) and has received fellowship status from both the World Institute of Pain and the North American Neuromodulation Society. He has edited or co- authored 11 textbooks on pain medicine and written approximately four hundred articles, book chapters and abstracts on neuromodulation and the diagnosis and management of complex pain problems. His publications have appeared in prominent journals including JAMA, Lancet, Anesthesiology, Pain Medicine and others. He has chaired hundreds of meetings devoted to pain and neuromodulation around the world.

He is listed in Americas Top Doctors, New Jersey Top Doctors and Best Doctors in America. He is the Past President of (ASIPP), The American Society of Interventional Pain Physicians, the North American Neuromodulation Society (NANS), the southern pain society the New Jersey Society of interventional pain physicians (NJSIPP), and was the first chair of the American Society of Anesthesia's committee on Interventional pain. He is currently chairman of the Board of Examination World Institute of Pain (WIP) and is on the Executive Board of the WIP. He is also the recipient of the President's Distinguished Service Award and the Excellence in Pain Management Award from the Southern Pain Society, as well as the Physician of the Year Award from both the West Virginia Society of Interventional Pain and the New York and New Jersey Societies of Interventional Pain. He has received distinguished service awards from AAPM, ASIPP, NANS and NJSIPP, and the Raj award for excellence (2017) and the lifetime achievement award (2018) from the American Society of Interventional Pain Physicians and the 2018 lifetime achievement award from the West Virginia society of Interventional Pain Physicians for contributions to the field of pain and neuromodulation. He will receive the lifetime achievement award from the NY and NJ societies of interventional pain in November 2018.

He is the recipient or co-recipient of numerous grants on the multiple facets of pain management. His research in cancer pain demonstrated how good pain management could lessen side effects and improve life expectancy. He was the co-principle investigator on the largest randomized controlled trial ever performed on intrathecal pumps, and principle investigator on the first large scale trial on a novel intrathecal agent for pain. His patents and research have led to novel approaches and FDA approvals in pain management and healthcare including novel pharmaceuticals and medical devices (Qutenza, Prialt and Gammacore).

He was a founding partner and was on the board of directors between 2005 and 2018 and is currently Chief Medical Officer of ElectroCore medical, a medical device company devoted to modifying pain and disease through stimulation of the vagus nerve non-invasively. His research on pain, mechanisms of placebo response, his unified theory of pain termed Psychological Behaviorism theory of pain, and interventional therapies have been highlighted on Good Morning America, Peter Jennings World News Tonight, CBS News, BBC and multiple newspapers including USA Today, the Washing-
ton Post Newsweek, Pain Medicine News and the Wallstreet Journal.

In addition to clinical and scientific work, his foundation, Positive outcomes worldwide is devoted to improving care around the world through education and training for pain and its treatment.

LECTURE

Recent Advances in Electrical Neuromodulation

ADNAN AL-KAISY MB CHB, FRCA, FFPMRCA, FIPP

BIOGRAPHICAL SKETCH

Dr Al-Kaisy is currently Clinical Lead of the Pain Management and Neuromodulation Centre at Guy's and St. Thomas' NHS trust. He trained in Chronic Pain Medicine at The Walton Centre for Neurology and Neurosurgery, Liverpool. He has a fellowship in Chronic Pain Management at University of Toronto Hospital, Canada.

Dr Al-Kaisy has an international reputation as a leading expert in Pain Management and has extensive experience in working toward the advancement of electrical neuromodulation techniques within this specialty.

Dr Al-Kaisy led the first multicenter and multinational study on the safety and efficacy of 10kHz SCS in the management of Failed Back Surgery Syndrome (FBSS). He has subsequently clinically pioneered the use of this novel therapy in the management of different chronic pain conditions including the feasibility study on chronic back patients without prior surgery. He has successfully designed groundbreaking research including a randomized double blind placebo control study examining different frequency in the management of FBSS. He is the innovator of a number techniques including transgrade dorsal root ganglion stimulation using monopolar electrical stimulation.

Dr Al-Kaisy continues to teach and lecture on essential and pioneering topics in pain management in the United States, Europe, Australia and Asia. He is the chair of the biannual London Spine Pain Symposium at Guy's and St. Thomas' Hospital.

LECTURE

Does SCS Frequency Matter?

ROBERT M. LEVY, MD, PHD

BIOGRAPHICAL SKETCH

Dr. Robert Levy earned his medical degree at Stanford University, where he also received his Ph.D. in neurosciences and completed a postdoctoral fellowship. He performed a second postdoctoral research fellowship and his residency in neurological surgery at the University of California, San Francisco, where his mentors included Dr. Howard Fields, Dr. Charles Wilson, and Dr. Yoshio Hosobuchi. He then moved to Northwestern University where he rose to the level of Tenured Professor of Neurological Surgery, Physiology, and Radiation Oncology at the Feinberg School of Medicine. During this period, he served as Acting Chairman of the Department of Neurological Surgery.

He was then recruited to serve as Professor and Chairman of the Department of Neurological Surgery and Co-Director of the UF Health Jacksonville Neuroscience Institute at the University of Florida College of Medicine in Jacksonville, FL. He most recently served as the Founding Director of the Marcus Neuroscience Institute and Director of the Harvey Sandler Center for Neurosurgery in Boca Raton, FL. Dr. Levy has authored several textbooks and published 300 peer reviewed journal articles. He has been the recipient of many national and international honors and awards and has been listed in the Best Doctors in America. His current research involves novel applications of neurostimulation and targeted drug delivery to the brain. He has assisted with the design and implementation of multiple new neuromodulation technologies and instruments.

LECTURE

Evidence in Neuromodulation

RICHARD RAUCK, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Richard L. Rauck is a pain management physician in Winston-Salem, NC. Dr. Rauck graduated from Wake Forest Medical School in 1982, after receiving his B.S from Davidson College in Davidson, NC. He completed his residency in anesthesiology in 1985 at the University Of Cincinnati College Of Medicine at Cincinnati Ohio. In 1986 he completed a Fellowship in Pain Medicine at University of Cincinnati College of Medicine at Cincinnati College of Medicine at Cincinnati Ohio. Dr. Rauck is board certified in Pain Medicine and Anesthesiology.

Dr. Rauck has a long and active history in publishing in peer-reviewed medical journals, speaking at many national and international professional meetings and has an active clinical practice in pain management. He has authored over 140 original articles. Currently, Dr. Rauck practices pain management as President of Carolinas Pain Institute, PA which he founded and is the medical director for The Center for Clinical Research, LLC which he also founded.

Presently, he is an editorial reviewer for Anesthesiology, Neuromodulation, and is on the Editorial Board for Pain Practice and Neuromodulation. He serves presently as President for Sceptor Foundation for Pain Management of which he is a founding member. He served as President of World Institute of Pain from 2013 to 2015 and is currently the Chairman of the Advisory Board for the WIP. He served on the board of directors for both the North American Neuromodulation Society and the American Society of Regional Anesthesia and Pain Medicine (ASRA-PM). He is also the John J. Bonica award recipient in 2013 through (ASRA-PM). There are many other well-known associations and committees that he is part of, too numerous to mention here.

He continues as Clinical Associate Professor of the Department of Anesthesiology at Wake Forest University School of Medicine and is co-director of the fellowship program of this department. Dr Rauck has been elected by his peers to be included in Best Doctors in America® from 1992 to present.

LECTURE

Wireless Neuromodulation of Different Wave Forms and Rates – The Favorable Evidence

SERDAR ERDINE, MD, FIPP

LECTURE

Neurolysis in Cancer Pain

80-85% of cancer patients may be treated by the appropriate use of analgesics with the use of Ladder system created by WHO.The WHO ladder system is formed of three steps. However there are a quiet number of patients who need to be treated by inter-

ventional techniques.

Neuroablation is the physical interruption of pain pathways biochemical or thermal,or minimal invasive surgical modes.Use of neuorolytic agents such as alcohol and phenol may chemically interrupt the nervesThis may also be achived by radiofrequency thermocoagulation.Minimal invasive techniques such as cordotomy or DREZ may also be used.

Neuroablation techniques for cancer pain are; Neurolytic nerve blocks; Somatic nerve blocks; Gasser ganglion, Cervical plexus, Brachial plexus, Intercostal nerves; Sympathetic nerve blocks;Stellate ganglion block,Thoracic sympathetic block,Splancnic and celiac plexus block,Hypogastric and impar ganglion block; Central nerve blocks; Intrathecal, Epidural,pitiutary alcohol ,injection

Radiofrequency thermocoagulation; Trigeminal radiofrequency thermocoagulation, Percutaneous rhizotomy, Percutaneous cordotomy, Percutaneous RF symphatectomy.

Neuroablative techniques are indicated when administraton of analgesics acording to the WHO ladder are inadequete. The pain should be unilateral and localized. These techniques are effective for a certain period of time.So the life expectancy of the patients should also be limited. Neuroablative techniques are generally used for somatic and visceral pain. In some neuropathic pain syndromes sympathetic blocks may have a value.

Although neuroablative techniques should be performed as the last step after administering all necessary drugs in certain cancer related pain syndromes early ablation should also be considered such as pain in the base of the skull, pain related with the cancer of the upper abdominal organs, pelvic organs, or metastasis of the ribs. The main of early neuroablation is , to relieve pain while the anatomy of the effected organ is not distorted due to the progression of the cancer. In upper abdominal pain, neuroablation with splancnic and celiac plexus block may also improve the motility of the intestines.

Neuroablative techniques have several advantages and disadvantages. The follow up of the patients needs less than neuromodulatory techniques, they are more cost effective,drug consumption decreases and they may be very effective in some pain syndromes. However they may only be applied when the life expectancy is limited, pain also should be limited to a certain are. All these techniques are not free of complications. Possible complications are ;temporary or permanent damage to the nerves.,temporary or permanent sensorial or motor loss, paresia, paresthesia.

They should be performed by very well trained physicians in order to prevent complications.All the techniques should be performed under imaging, under flouroscopy.

ERIC WILSON, BSC (MED), MB, BCH, FIPP

LECTURE

The Education of Pain Physicians

JUAN CARLOS FLORES, MD, FIPP

BIOGRAPHICAL SKETCH

Prof Dr Juan Carlos Flores is Director of CAIDBA (EPP Award) Pain Center; Professor of Anatomy of La Plata School of Medicine Buenos Aires Province, Argentina; Fellow Interventional Pain Practice; Chairman Latin American Section World Institute of Pain; Chief of Pain Medicine of Clínica San Camilo; Director del Workshop Universitario CAIDBA sobre Técnicas Intervencionistas para Tratamiento del Dolor Refractario 2015/2016; Autor Textbook: Medicina del Dolor, Perspectiva Internacional. JC Flores Elsevier. Prof Flores works from 2005 with World Institute of Pain globally and specially in the Latin American Section very close with educational objectives in cadaver workshops and examination activities.

From May of 2001 when Dr Racz visited Buenos Aires Dr Flores is giving Cadaver Workshop every year.

Director Centro de Atención Integral del Dolor Buenos Aires CAIDBA www.caidba.com EPP Award 2011-2015

Director del Workshop Universitario CAIDBA sobre Técnicas Intervencionistas para Tratamiento del Dolor Refractario 2014/2016. Workshop with Ultrasonography and Fluoroscopy under Cadaveric and Hybrid Human Simulators

Profesor Asociado de Anatomía Cátedra Prof Galli Universidad Nacional de La Plata, Buenos Aires, Argentina

Director of Laboratories of Unit Anatomo-Clinic of Pain Cathedra of Anatomy Prof Galli UNLP (La Plata School of Medicine)

Director del Área de Investigaciones Básicas y Aplicadas en Medicina del Dolor de la UNLP (La Plata School of Medicine)

Chairman Latin American Section World Institute of Pain

Past Chairman WFSA & CLASA Training Center Pain Medicine

Jefe Sección Medicina del Dolor Clínica San Camilo

Miembro del Comité Editorial Pain Practice, Rev Españ del Dolor, Rev Uruguaya de Anestesiología y Reanim y Past - Rev Argentina de Anestesiología

Past President Argentinian Federation of Anesthesia, Analgesia and Reanimation

Past President Pain Foundation (Fundación Dolor) Argentina

Past Director Carrera de Médicos Especialistas en Anestesiología de la Universidad de Busnos Aires

Past Director del Curso Universitario de Expertos en Medicina del Dolor y Cuidados Paliativos de la Fundación Dolor y la Universidad de Buenos Aires

LECTURE

Continuing Education – Striving to Learn More

JEE YOUN MOON, MD, PHD, FIPP, CIPS

LECTURE

Fluoro vs Ultrasound – Should They be Combined or Separated?

DOUGLAS P. BEALL, MD, DAAPM, FIPP

BIOGRAPHICAL SKETCH

Douglas P. Beall, MD, attended medical school at Georgetown University School of Medicine in Washington, DC, and completed his residency at The Johns Hopkins Hospital in Baltimore, Maryland. Following residency, he was Chief of Interventional Services at Sheppard Air Force Base in Wichita Falls, Texas. He then completed a fellowship in Musculoskeletal Radiology at Mayo Clinic in Rochester, Minnesota, where he was trained in interventional spine techniques before returning to the US Air Force as Division Chief of Musculoskeletal Radiology. Following the service in the US Air Force Dr. Beall was chief of Musculoskeletal Radiology and Fellowship Director at the Univiersity of Oklahoma prior to entering private practice as the Chief of Services. In addition to his expertise in musculoskeletal imaging and interventional spine care, Dr. Beall is actively involved in teaching and research. He is board-certified in Diagnostic Radiology, has an added fellowship in Musculoskeletal Radiology, is a Diplomate of the American Academy of Pain Management and is a Fellow of Interventional Pain Practice and board certified by the World Institute of Pain. He is currently in private practice focused on interventional pain management and orthopedic imaging.

Dr. Beall has published more than 200 articles in peer-reviewed journals, authored four textbooks and 11 textbook chapters, given more than 500 invited lectures and scientific presentations and has participated in 37 clinical research trials. He is currently the Chief of Radiology Services for Clinical Radiology of Oklahoma as well as the Division Head of Interventional Spine Care and Director of Pain Management Fellowship Programs at the Spine Fracture Institute and Summit Medical Center.

LECTURE

MRI of Low Back Pain

Magnetic Resonance (MR) imaging is the modality of choice when imaging the spine and is appropriately used to detect correctable or dangerous causes of low back pain. The three primary causes of low back pain include irritation of the elements innervated by the anterior and posterior segments of the spine involving both somatic and sympathetic pain fibers, segmental instability of the spine and inflammatory mediators from the intervertebral disc that stimulate adjacent nociceptive receptors. Abnormalities of the intervertebral disc, the facet joints and the vertebral body are well seen using MR imaging and such abnormalities as disc herniations, facet arthropathy, spondylolisthesis and vertebral compression fractures. The most important component of MR imaging of the spine is to correlate the patient's clinical symptoms with the appropriate anatomic abnormalities as the more definitive the diagnostic evaluation is the more likely the patient will benefit from interventional spine treatments. Imaging abnormalities of the spine don't definitely correlate with symptoms and the pathologic abnormalities change with age.

The aim of this presentation is to describe the various abnormalities commonly seen on MR imaging that are most often painful and to give imaging tips for detecting painful pathology. Indications on when to scan patients are also discussed and various types of imaging pitfalls are presented. The primary emphasis will be to show that correlation of imaging findings with patient symptoms is critical to arrive at the appropriate clinical cause of the patient's pain.

PETER STAATS, MD, MBA, DABA, ABIPP, FIPP

LECTURE

Where Does the Opioid Crisis Lead Us?

MILES DAY, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Day is the medical director of The Pain Center at Grace Clinic, pain fellowship program director at Texas Tech, and the Traweek-Racz Endowed Professor in Pain Research in the Department of Anesthesiology at Texas Tech University Health Sciences Center in Lubbock. He is a diplomat of the American Board of Anesthesiology with subspecialty certification in Pain Medicine. He also serves as an examiner for the World Institute of Pain. Previously, he served as the director and associate professor at the Eugene McDermott Center for Pain Management at the UT Southwestern Medical Center in Dallas. He serves on the editorial boards of Pain Practice and Pain Physician. He is the past-president of the Texas Pain Society and past-chair of the Board of Examination for the World Institute of Pain. Dr. Day received his medical degree from Texas A&M University Health Science Center in College Station and completed his general surgery internship at Texas Tech University Health Sciences Center. He completed his anesthesiology residency and pain fellowship at Texas Tech as well. He is the author of numerous articles and book chapters in well-known publications. He has educated physicians globally to further the specialty of interventional pain medicine.

LECTURE

Urine Toxicology

Urine toxicology is an important component in the management of chronic non-malignant pain when opiates are utilized. Proper testing includes a qualitative test which is a point-of-care test which tests for the presence or absence of a medication, and a quantitative test which measures the amount of the medication being tested. The qualitative test alone is useless without the quantitative test as there can be a high false positive or negative rate for certain substances. Therefore it is very important to thoroughly examine the results of both tests and know how to interpret the results.

AARON CALODNEY, MD, FIPP

LECTURE

Q & A – Narcotic Related Issues

JUAN CARLOS FLORES, MD, FIPP

LECTURE

Radiation Safety

ANDREA TRESCOT, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

Andrea Trescot, MD is past president of the American Society of Interventional Pain Physicians (ASIPP), past president of the Florida Society of Interventional Pain Physicians (FSIPP), current president of the Alaska Society of Interventional Pain Physicians (AKSIPP), a former professor at the University of Washington in Seattle, Washington, and previous director of the pain fellowship programs at the University of Washington and the University of Florida. She is the past chair of the Education Committee of the World Institute of Pain (WIP). She graduated from the Medical University of South Carolina, with internship and residency in anesthesia at Bethesda Naval Hospital and a fellowship in pediatric anesthesia at National Children's Hospital in Washington. She is a Diplomate of the American Board of Anesthesiology (with special qualifications in pain and critical care), a Diplomate of the American Board of Interventional Pain Physicians (ABIPP), a Fellow of Interventional Pain Practice (FIPP), and a Certified Interventional Pain Sonologist (CIPS). She was a pain clinic director in private practice for 15 years before she moved to academics. She has returned to private practice, where she splits her time between Alaska and Florida. She is also the Chief Medical Officer of Stimwave, a wireless stimulation company. Dr. Trescot has authored more than 150 peer-reviewed articles and textbook chapters, and she is the editor and senior author of a 900-page pain textbook (Peripheral Nerve Entrapments – Clinical Diagnosis and Management). She is also co-author of PainWise – A Patient's Guide to Pain Management, as well as co-editor of the three-volume pain review textbook Pain Medicine & Interventional Pain Management – A Comprehensive Review. She speaks nationally and internationally on topics of pain medicine and interventional pain management.

LECTURE

Cryoneurolysis

Cryoneurolysis, the technique of using very cold temperatures to provide pain relief, is a very old concept that has recently had resurgence, with the update of equipment and an improved recognition of the role of peripheral nerve pain. In this lecture, we will discuss the history, physics, equipment, and indication of cryoneurolysis.

CARL NOE, MD, FIPP

BIOGRAPHICAL SKETCH

Carl Noe, M.D., is a Professor in the Department of Pain Management and Anesthesiology at UT Southwestern Medical Center and serves as Medical Director of the Eugene McDermott Center for Pain Management, one of the foremost U.S. centers for treating patients suffering from pain.

He also is the Director of both the Division of Pain Management and the Pain Management Fellowship Program.

Board certified with subspecialty certification in pain management, Dr. Noe is a Diplomate of the American Board of Anesthesiology, certified in the subspecialty of pain medicine, and a Fellow of Interventional Pain Practice.

He is a four-time Castle Connolly Top Doctor, a 15 consecutive-time D Magazine Best Doctor (Pain Management), and a four-time Texas Monthly Super Doctor.

Dr. Noe has published a number of scholarly articles, authored and coauthored more than 30 book chapters, and delivered scores of invited lectures on topics related to pain management.

He joined the UT Southwestern faculty in 1991.

Dr. Noe earned his medical degree at the University of Texas Health Science Center at San Antonio. He completed an anesthesiology residency and pain management fellowship at Texas Tech University, as well as a cardiothoracic anesthesiology residency and a critical care medicine fellowship at Stanford University.

A founding member of the Texas Pain Society, Dr. Noe is a member of other professional organizations that include the American Pain Society, Texas Medical Association, and Texas Society of Anesthesiologists.

He serves as a reviewer for publications that include The Spine Journal and Pain Practice.

Dr. Noe is married and has two grown children.

LECTURE

Detoxification from High Dose Opioids

Patients may have less overdose risk by reducing or discontinuing opioids for chronic pain. Interdisciplinary pain management rehabilitation programs are an alternative to initiating or continuing opioids for chronic pain syndromes. Data will be presented that suggests that opioid dose reduction during interdisciplinary pain management treatment is associated with less pain and no worsening of other outcomes for patients with chronic pain.

KRIS C. P. VISSERS, MD, PHD, FIPP

BIOGRAPHICAL SKETCH

K. Vissers is anesthesiologist, professor in Pain and Palliative Medicine and chairman of the Radboud Expertise Center of Pain and Palliative Medicine of the Radboud University Nijmegen Medical Centre in the Netherlands. As a principal investigator his research program is connected to the Health Care Improvement Science program of Radboud University.

He obtained his graduation in Medical Sciences at the University of Antwerp (Belgium) and his graduation as an Anesthesiologist at the University of Antwerp and the Catholic University of Leuven (Belgium). He specialized in pain medicine in Leuven (B) and Nijmegen (NL), with Prof. Dr. H. Adriaensen, Prof. Dr. H. van Aken, Prof. Dr. L. Booij and Prof. Dr. B. Crul. As of 1995 he was staff member of the University affiliated Hospital East-Limburg, Genk, Belgium where he founded the Multidisciplinary Pain Center in 1995. He was visiting consultant for the palliative care unit and hospital team. He was responsible consultant for the home care organization in Palliative Care "Pallium".

He obtained the degree of doctor in the medical sciences Ph.D. in 2004 at Radboud University Nijmegen Medical Center, The Netherlands. He graduated as Fellow in Interventional Pain Practice in 2004.

Since 2005, he is Professor in Pain and Palliative Medicine at the Radboudumc University Nijmegen. He is ex officio board member of the Benelux Chapter of the World Institute of Pain and the first chairman of the Dutch Society of Multidisciplinary Palliative Care Professionals, chapter of the European Association of Palliative Care (EAPC) and current president of the Pain Alliance in the Netherlands, chapter of the IASP. He is Immediate Past President of the World Institute of Pain.

His main research interests are (1) translational approach and research on neuropathic pain, (2) practical and ethical application of palliative sedation, (3) proactive care and identification of patients in a palliative trajectory, (4) quality indicators of the organization and practice of pain and palliative medicine, (5) e-health and telemedicine in transmural care programs (6) decision making in palliative care and end-of-life and (7) the description of competences and performances for the education and training in pain and palliative medicine.

He succeeded in getting external funding resources for major research projects in pain and palliative care (Europall, 7th framework, ZonMw, NWO, KWF).

He is author of more than 200 publications in international peer reviewed journals and contributed to more than 20 textbooks. He contributes to local and national education with regular articles in Belgian and Dutch journals for physicians and for the lay public. He is frequently asked as speaker during national and international congresses and teaching courses. He is promotor of 26 PhD students in his topics of interest. He organized 10 international congresses and workshops. He was member of several scientific committees of congresses.

LECTURE

Cancer pain management: Are we making the difference?

Pain is the most frequently reported symptom in patients with cancer. It is present at all stages of the disease. Adequate pain control is required for all patients. Appropriate pain management can only be achieved when the pain frequency and intensity is documented and followed as a guide for treatment adaptation.

Pain is in theory a physical experience, but it is well known that the psychological aspect, the potential for coping and accepting, as well as the spiritual component are important.

The World Health Organization (WHO) created a major breakthrough for the management of pain in patients with cancer when they published the WHO pain ladder. However, recent developments in the evidence of oncological and pain strategies create new horizons and challenges for optimal pain management programs for patients with cancer pain. More complex treatment algorithms for cancer pain should be developed taking care of the challenges of off label use, opioid abuse, immunotherapy consequences and long-term survivors. A new revival of interventional pain management techniques should be evaluated using patient reported outcome measures and health economics. Finally a more profound diagnostic profiling of pain types should improve outcome of oncological pain management. During the presentation, the different challenges of future oncological personalized pain management will be reviewed. The need for a multidimensional, multidisciplinary management of the different aspects of pain including physical, emotional and social factors, is now accepted.

GABOR B. RACZ, MD, DABPM, ABIPP, FIPP

BIOGRAPHICAL SKETCH

Dr. Racz graduated The University of Liverpool Medical School, completed his residency at SUNY Upstate Medical Center and served at SUNY from 1966-1977 when he moved to Texas Tech University Health Sciences Center where he served until 2016 as co-director of Pain Services at Grace Medical Center in Lubbock, Texas. Dr. Racz is a founder and past president of World Institute of Pain and Texas Pain Society. He is the first Grover E. Murry Professor named after the first President of the Texas Tech University School of Medicine. He was director of the TTUHSC Pain Symposium since its inception 33 years ago and is also Director of the annual Budapest Conference since it began 23 years ago. He was the first President of the Texas Pain Society.

Dr. Racz board certified with the American Board of Anesthesiology, the American Board of Anesthesiology subspecialty in Pain Medicine, and holds the certificates of Diplomat with the American College of Pain Medicine, Fellow of Interventional Pain Practice awarded by the World Institute of Pain and the Diplomat American Board of Interventional Pain Practice (DABIPP) certification awarded by ASIPP and WIP. He is an advocate for high standards of certification and training among pain physicians and works toward the advancement of those goals.

He has received numerous recognitions and awards from organizations around the world including Distinguished Professor Award for Lifetime Achievement from Texas Tech University Health Sciences Center, the Lifetime Achievement Award(s) from American Society of Interventional Pain Physicians, ASIPP keynote speaker lecture series named for Raj/Racz, and the MORICCA AWARD, the highest award presented by the Italian Pain Society. He educated over 1,000 Pain Physician visitors during tenure at Texas Tech.

He has published over 200 book chapters and journal articles and three books describing his techniques in spinal cord and peripheral nerve stimulation, neurolysis, radiofrequency thermocoagulation and other interventional procedures. Today, Dr. Racz continues to practice in Dallas, Texas, hosts Racz Labs Interventional workshops, and travels around the world presenting lectures and workshops.

LECTURE

CRPS – New Principals: The Road back to work

ANDREA TRESCOT, MD, FIPP, CIPS

LECTURE

Entrapment Neuropathies in Cancer Pain

Many of the causes of pain during cancer can be traced to peripheral nerve entrapments, and as such, recognition of these entrapments offers an approach to cancer pain treatment instead of or in addition to opioids. In this lecture, we will discuss the clinical presentation, the physical exam, and the diagnostic injections of several common cancer-related peripheral nerve entrapments.

LUDGER GERDESMEYER, MD, PHD, FIPP

LECTURE

Clinical Research – End Points and Outcomes?

KENNETH B. CHAPMAN, MD, FIPP

LECTURE

Vertebral Augmentation – Why the Studies Were Wrong

MILES DAY, MD, FIPP

LECTURE

Cervicogenic Headaches

The International Headache Society's International Classification of Headache Disorders defines Cervicogenic Headaches as:

Headache caused by a disorder of the cervical spine and its component bony, disc and/or soft tissue elements, usually but not invariably accompanied by neck pain.

The diagnostic criteria are:

A. Any headache fulfilling criterion C

B. Clinical and/or imaging evidence of a disorder or lesion within the cervical spine or soft tissues of the neck, known to be able to cause headache

C. Evidence of causation demonstrated by at least two of the following:

1. headache has developed in temporal relation to the onset of the cervical disorder or appearance of the lesion

2. headache has significantly improved or resolved in parallel with improvement in or resolution of the cervical disorder or lesion

3. cervical range of motion is reduced and headache is made significantly worse by provocative maneuvers

 $\ensuremath{\mathsf{4}}$. headache is abolished following diagnostic blockade of a cervical structure or its nerve supply

D. Not better accounted for by another ICHD-3 diagnosis.

Conservative treatments include physical therapy and medication. Interventional therapies can be introduced when conservative measures are inadequate in alleviating the headache pain. Reference: https://www.ichd-3.org

LORAND EROSS, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Lorand Eross is the head of the Functional Neurosurgical Department and Center of Neuromodulation at the National Institute of Clinical Neuroscience in Budapest. He is the director of the Epilepsy Program at the institute. He got his PhD degree at Semmelweis University in 2010 in epilepsy surgery. His main interest is epilepsy surgery, movement disorder surgery, neurosurgical treatment of pain, spasticity and neuromodulation. He has an active reasearch group in the field of epilepsy, chronic pain. He developed new intraoperative localisation method for invasive recordings in epilepsy surgery. His activity includes research and development of in vitro and in vivo electrophysiological and optical investigation methods. He is lecturer at the Medical faculty of the Semmelweis and the Szeged Universities and at the Pazmany Peter Catholic University, Faculty of Information Technology in bionical sciences.

LECTURE

Neurosurgeon and the Pain Patient

Objectives

Upon completion of this presentation attendees will be able to discuss

- What sets neurosurgical approaches from other interventional pain therapies
- The difference between ablative and neuromodulative procedures
- \bullet Barriers to the use of ablative and neuromodulative approaches in clinical practice
- Expected outcomes
- Future direction of neurosurgical pain therapies

Key Points

• Selective ablative procedures rarely used today in neurosurgical clinical practice for pain

• Microsurgical DREZotomy, percutan cervical cordotomy, thalamotomy for nociceptive pian, and more often percutan Gasserian ganglion thremocoagulation for Trigeminal neuralgia left nowdays in the minimal invasive neurosurgical practice in pain surgery.

• Barriers to the use of theses procedures in clinical practice include limited training opportunities, and the procedure is technically demanding.

• Invasive neuromodulation or neural network surgery includes primary motor cortex, DBS, SCS, periferial nerve and field stimulation for neuropathic pain.

• Accumulating evidence in SCS indicates neuromodulation is safe, clinically effective, and a cost effective procedure in failed beck surgery synfdroma and CRPS.

• MCS is the most effective in thalamic pain. Multitarget DBS can help for central neuropathic pain after spinal cord injury. Periferial nerve stimulation effective in cervicogenic headache, migraine and Cluster headache, but we need more clinical evidences for these procedures.

• Neural network surgery offers a range of opportunities in basic and translational research seeking to improve management of neuropathic pain.

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GABOR B. RACZ, MD, ABIPP, FIPP

LECTURE

Scarring Triangle – New Developments of Epidural Neuroplasty

SUDHIR DIWAN, MD, FIPP

LECTURE

Cervical facets (MBB, intraarticular, RF)

JAN VAN ZUNDERT, MD, PHD, FIPP

BIOGRAPHICAL SKETCH

Jan Van Zundert is anesthesiologist, head of the Multidisciplinary Pain Centre of the Hospital Oost Limburg, Belgium. He is associate professor at the Maastricht University Medical Centre. He obtained the doctoral degree in Medicine at the Catholic University of Leuven, Belgium and completed a 5 years residency in anesthesiology and reanimation at the University hospital Antwerp and specialized in pain medicine at the Radboud University Nijmegen.

He obtained his PhD at the Maastricht University with the thesis: "The use of pulsed radiofrequency in the treatment of chronic pain". He followed a postgraduate training in Health Policy and management at the Catholic University of Leuven and wrote a thesis on "The treatment of (chronic) low back pain in a multidisciplinary pain center: effects and costs"

He also completed a postgraduate training in Health Law and Health Ethics at the University of Antwerp and wrote a thesis on "The scope and enforceability of practice guidelines"

He authored 86 publications in PubMed indexed journals. He was (co)author of 38 book chapters. He holds functions in the editorial board of several journals and is the past editor of the Dutch and English version of the guidelines "Evidence based interventional pain medicine according to clinical diagnoses".

He is honorary treasurer of the World Institute of Pain (WIP)

LECTURE

Lumbar facets MBB, RF - Where is the evidence leading us?

Lumbar facets MBB, RF - Where is the evidence leading us?

The prevalence of lumbar facet joint pain varies widely, depending on the diagnostic criteria used. The most prevalent complaint is axial low back pain that may be referred into the groin or thigh. Lumbar paravertebral tenderness is indicative for facetogenic pain. Medical imaging mostly shows degenerative signs, but the correlation with pain is poor.

When conservative treatment fails interventional treatment can be used. A diagnostic medial branch block is used as confirmation of the diagnosis facet joint pain. Radiof-requency treatment of the ramus medialis of the ramus dorsalis was demonstrated to provide better pain relief and improved disability than sham intervention. 1-5

The evidence was critically reviewed by the NICE workgroup "Low back pain and sciati-

ca" who rated radiofrequency denervation to be effective for people with severe localized low back pain arising from structures innervated by the medial branch nerves. 6

The Belgian Knowledge Center revisited the NICE guidelines but came to the same conclusion. $\ensuremath{\mathsf{7}}$

The publication of the MinT study 8 generated different comments 9-11 mostly indicating flaws of the study. These issues are related to how the patients were recruited and diagnosed, but also to the technique applied to perform RF denervation, the design of the studies, the statistical analyses that were performed, and the conclusions that were drawn.

We will discuss: patient recruitment; study design, standardization of the technique, statistical analyses, missing information and the conclusions of the trial.

In conclusion: Despite suboptimal patient selection and varying techniques performed by 66 different pain specialists, 2 out of the 3 RCT showed significant pain relief in the radiofrequency and physical therapy group at the primary end point of the study.

The MinT study did not assess the efficacy of radiofrequency facet denervation but the added value to physical therapy.

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JAVIER DE ANDRÉS ARES, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Javier De Andrés Ares is a board certified Anesthesiologist since 1997. He graduated from Universidad Complutense-Madrid in June 1990, completed his anesthesiology residency at Complejo Hospitalario de Toledo 1996 and is Fellow in Interventional Pain Practice from the World Institute of Pain 2008. He obtained Hassenbusch Award in 2008 from the World Institute of Pain. He currently is the Head of Pain Unit at Hospital Universitario La Paz-Madrid, and is Director at "Clínica Analgesia y Manejo del Dolor -Toledo" and co-director at "Clínica del Dolor Hospital Santa Elena-Madrid". He is an Assistant Clinical Professor in Universidad Miguel de Cervantes and collaborates with Universidad Rey Juan Carlos. He is Head of Spanish Pain Radiofrequency Interest Group, from the Spanish Pain Society (IASP). He is an active member of several societies, including the World Institute of Pain, Spine Intervention Society, and Spanish Pain Society. He has more than 20 years experience as a pain clinic director in public and private practice and speaks nationally and internationally on topics of pain medicine and interventional pain management. He has special interest in Spinal and Facial Pain.

Dr. De Andrés Ares is the current Chair of WIP Iberian Section.

LECTURE

Lumbar sympathetic/ superior hypogastric

Objectives

Upon completion of this presentation attendees will be able to discuss

- The rationale for Sympathetic Neurolysis.
- Anatomy and Physiology of Autonomic Nervous System.
- Anatomy of Lumbar Sympathetic Chain.
- Anatomy of Hypogastric Plexus.
- Indications for Lumbar Sympathetic Radiofrecuency ablation.
- Contraindications for Lumbar Sympathetic Radiofrecuency ablation.
- Lumbar Sympathetic Radiofrecuency ablation technique.
- Lumbar Sympathetic Radiofrecuency ablation complications.
- Indications for Superior Hypogastric Blockade/Neurolysis.
- Contraindications for Superior Hypogastric Blockade/Neurolysis.
- Superior Hypogastric Blockade/Neurolysis technique.
- Superior Hypogastric Blockade/Neurolysis complications.
- Future directions.

Key Points

• Importance of Fluoroscopy.

• The rational for performing Neurolysis Techniques in Autonomic Nervous System.

- Neurolytic agents used.
- Avoiding possible complications.

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IRA FOX, MD, DABPM, FIPP, ABIPP

BIOGRAPHICAL SKETCH

After completing his residency in anesthesiology and pain at Monmouth Medical Center in New Jersey, Ira B. Fox, MD, DABPM, FIPP, ABIPP founded Anesthesia Pain Care Consultants. The former chief anesthesia resident has spent more than 30 years treating patients with acute and chronic pain.

Dr. Fox maintains five board certifications: Fellow of Interventional Pain Practice (FIPP); American Board of Interventional Pain Physicians (ABIPP); World Institute of Pain (WIP);

American Board of Pain Medicine (DABPM); and the American Board of Anesthesiology with added certification in Pain Management. He also serves as an examiner for the FIPP Board Certification and prior ABIPP Interventional Practical Examination.

As past chairman of the World Institute of Pain (WIP) Committee on Project Development, Dr. Fox's mission was to help patients across the world find solutions to ease their suffering. In addition, he is a past Chairman of the Advisory Board, Honorary Treasurer, and had been a member of the Executive Board since 2011. He also served as a trustee for the World Institute of Pain Foundation and is the current president of the World Society of Pain Clinicians, as well as a lifetime member of the American Society of Interventional Pain Physicians, Dr. Fox holds the distinction of being the Inaugural Executive Examiner at the WIP and American Academy of Pain Medicine Ultrasonography (AAPMU) 1st Annual WAPMU International Congress.

On both a national and international level, Dr. Fox has conducted Comprehensive Review Courses and Cadaver Workshop conferences. He co-founded an annual conference and FIPP Board Examination in Miami that is bi-lingual and attracts physicians from throughout the US and southern hemisphere.

Dr. Fox has focused on expanding the field of interventional pain management across the world to offer pain relief to citizens of less developed countries by helping train local physicians. That's why he had organized and sponsored the Anesthesia Pain Care Consultants annual Pro/Am Charity Golf Tournament for six years running, raising thousands of needed dollars to provide scholarships to these dedicated physicians. Since 1996, Dr. Fox and his dedicated staff of interventional pain management physicians and paraprofessionals have been committed to providing continuing education for area physicians, healthcare clinicians and workers' compensation professionals. This will be Anesthesia Pain Care Consultants' 21st year conducting the APCC Pain Symposium, which features leaders in the field of pain management, and provides continuing education in the area of pain medicine.

The hard work and commitment Dr. Fox and the APCC team devote to helping those who suffer from acute and chronic pain has not gone unnoticed. He was elected "America's Top Physician" by the Pain Management Consumers' Research Council of America, and is listed as a Top Doctor in Broward County by Castle Connolly Medical Ltd. every year for more than a decade. Anesthesia Pain Care Consultants won the South Florida Business Journal Award for Excellence in Health Care in 2008. He has been published extensively and is frequently called on as an expert by print, television and online media reporters and editors. He lectures internationally and has had numerous media appearances which can be seen on the Anesthesia Pain Care Consultants website at www.AnesthesiaPainCare.com.

LECTURE

Caudal Neuroplasty - Experience with over 13,000 Cases

- Clinical Cases
- Patient Data
- Review of Evidence Based Guidelines
- Outcomes are Technique Dependent
- Objectives for Epidural Neuroplasty
- Techniques for Epidural Neuroplasty
- Complications
- Targeting L5 for SI Joint Pain
- References

FABRICIO DIAS ASSIS, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Fabrício Assis is the president of the Brazilian section of the World Institute of Pain (WIP). He is a member of the Board of Examination and member for the New Projects Development Committee, both for WIP. He is one of the founders of the Brazilian Society of interventional Pain Physicians (SOBRAMID) and its first president 2013-2015. Dr. Assis is involved in multiple educational projects and has trained physicians in interventional pain all over the world for the last 10 years. In 2011 he developed a highly regarded year-long training program in Interventional Pain in Brazil, where physicians from all over Brazil and neighboring countries from Latin America come once a month for training during the year.

Dr. Assis became a certified pain specialist at the Universidad de Barcelona, Spain, in 1998. Since then he began his work in interventional pain management and focused his work mainly on chronic pain patients, performing a wide range of procedures. He has participated in courses and traineeships in Hungary, England, Turkey, the Netherlands, the US, and several other countries. In 2007 he became a WIP-certified Fellow of Interventional Pain Practice (FIPP). Today Dr. Assis works at Singular – Pain Management Center, an EPP (Excellence in Pain Practice) Center in Campinas, SP, and is a member of the pain team at the Albert Einstein Israelite Hospital in São Paulo.

LECTURE

Transforaminal/DRG (including catheter)

STANDIFORD HELM, MD, FIPP

LECTURE

Spinal Stenosis

Objectives:

Upon completion of this presentation, attendees will be able to discuss:

- the role in interventional pain management physicians in treating spinal stenosis.
- The definition of spinal stenosis
- The different technologies available to treat spinal stenosis

• The pathophysiologic changes associated with stenosis and why interventional techniques are particularly appropriate for treating these changes.

• New understandings of the technical considerations in performing interventional procedures to treat stenosis.

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KENNETH B. CHAPMAN, MD, FIPP

LECTURE

Stellate/T2/3 sympathetic

JOHN NELSON, MD, FIPP

LECTURE

Splanchnic/celiac

DOUG BEALL, MD

LECTURE

Stem Cell Augmentation of the Intervertebral Disc

Discogenic back pain due to degenerative disc disease is a major cause of morbidity worldwide. Preclinical data in an ovine model has demonstrated the ability of allogeneic mesenchymal precursor cells (MPCs) to regenerate the extracellular matrix of degenerated intervertebral discs. Additional studies have evaluated the efficacy of allogeneic MPCs to improve pain and function in patients with discogenic back pain. Mesenchymal progenitors cells injected into moderately degenerated discs causing discogenic back pain demonstrate statistically significant improvement in pain and di-sability at two years compared to normal saline controls. Allogeneic stem cell solutions mixed with intervertebral disc material have shown early promise to regenerate the intervertebral discs in patients with discogenic back pain the injection of allogeneic MPC's into moderately degenerated intervertebral discs as shown objectively on Magnetic Resonance Imaging. In addition to anatomic improve the injection of allogeneic back pain verified by discography have been shown to improve the pain, function and quality of life measures in patients as compared to blinded placebo controlled injections. This treatment of discogenic back pain treated with MPCs has also been shown to be safe as well as effective.

The aim of this presentation is to describe the scientific basis of intervertebral disc regeneration with MPC's and to show example of study results combined with illustrations of the changes in MR imaging findings in the intervertebral discs that have been augmented with allogeneic stem cells.

MONIQUE STEEGERS, MD, PHD, FIPP

BIOGRAPHICAL SKETCH

Dr. Monique Steegers is a board certified anesthesiologist-painspecialist since 1996. She graduated at the Erasmus University in Rotterdam The Netherlands, in 1990, completed her anesthesiology residency at Radboud university medical centre at 1996. She did her thesis about chronification of postoperative pain in 2009 and became a Fellow in Interventional Pain Practice at the World Institute of Pain in 2010. Since January 2017 she is an associate professor in pain.

Dr. Steegers is also coordinator of the department of Pain and Palliative medicine. Additionally she is member of the executive board, and Consultant in Anaesthesiology and Pain Medicine at the Department of Anaesthesiology, Pain and Palliative Medicine at Radboud University Nijmegen Medical Centre in the East of the Netherlands. She is the registrar and responsible for the Fellow in Interventional Pain Practice examinations of the World Institute of Pain since 2015.

Her main research interests include:

- acute pain and the organization of an acute pain service
- pain chronification, particularly after surgery
- chronic pain, particularly neuropathic pain and neuromodulation
- multidimensional interdisciplinary pain diagnostics
- pain and treatment outcome prediction for individualized pain management
- treatment and prevention of chronic (postsurgical) pain

Clinical experience:

 \bullet consultant acute pain management (head of the acute pain service), cancer pain and chronic pain,

 registered pain specialist in chronic pain, Fellow International Pain Practice (World Institute of Pain) and interventional pain techniques especially neuromodulation

 \bullet consultant in anaesthesiology, day care anaesthesia and member of the independent donor procedure team

Management experience:

- Coordinator pain and palliative care
- Member of the executive board of the department (+/-150 employees)
- \bullet Member of the executive board of the department of pain and palliative medicine
- Organizer of the monthly meeting for regional multidiscipliniary consultation
- \bullet Member of the national health safety management program: early recognition and treatment of pain

University teaching experience:

- Junior Principal Lecturer
- Coordinator of undergraduate course on pain and pain management at Radboud University medical school
- 21 years of teaching experience
- Lecturer at the teach the teacher course for consultants
- \bullet Contribution to local and national education boards for an esthesiology and pain care
- registrar FIPP
- Chair of the organizing committee for the Dutch

Contribution to x textbooks on pain

Published y articles related to her research interested.

ULTRASOUND LECTURES

CHARLES OLIVEIRA, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

Vice-chairman of Brazilian Section of the World Institute of Pain (WIP), member of WIP-FIPP Board of Examination, and one of the founders and outgoing president of the Brazilian Society of Interventional Pain Physicians (Sobramid). A board-certified anesthesiologist with 20-plus years of experience in the fields of anesthesia and interventional pain management of acute and chronic pain, Dr. Oliveira is a regular speaker and instructor at international, and national, pain meetings and training courses. He furthered his education and trained in Spain, Hungary, England, Turkey, the Netherlands, and the US, among others. Specialized in fluoroscopy and ultrasound guided pain interventional procedures, he provides pain care in a private-practice setting and at his world-class Singular Pain Center (which he co-founded in 2009), the first WIP-EPP-award center in Brazil --in Campinas, São Paulo. He is also committed to continuing pain education and helped to develop a highly regarded 1-year modular training program in Interventional Pain for doctors from Brazil and neighboring Latin American countries. Since 2013, Dr. Oliveira has also taught at and co-organized an annual, bilingual (Spanish and English) Hands-on Workshop in Miami (WIP-Sobramid-sponsored), and currently organizes workshops on US-guided pain procedures. In 2017, he joined the faculty of Pain School International, Budapest. Latest publications: a co-authored report on "Skin Burn after SI Denervation following RF Procedures" in "ASIPP Pain Management Reports", and a chapter on "Genitofemoral Nerve Entrapment: Abdominal" in the reference book, "Peripheral Nerve Entrapment - Clinical Diagnosis and Management".

LECTURE

Ultrasound anatomy and procedures of the lumbosacral spine

Presentation to show and discuss the most common ultrasound-guided procedures pain interventionists use to treat lumbosacral spine conditions, whilst addressing the advantages and limitations of guidance by US compared with other image-guided procedures.

ANDRE MANSANO, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

Dr. Andre Mansano is a physician at Singular – Pain Management Center Brazil with anesthesia and pain management background. He obtained PhD degree in 2013. He became a FIPP (Fellow of Interventional Pain Practice) in 2015 and now is a member of the World Institute of Pain (WIP) Education Committee. He also serves as an observer for the FIPP exam. He has specialized training in fluoroscopic guided minimally invasive interventional acute and cronic pain procedures as well as regional anesthesia techniques; and medication management for medically challenging cronic pain patients within a multidisciplinary pain clinic. He has been a teacher for Brazilian Singular Fellowship for 3 years, which is the inspiration for the Pain School International.

LECTURE

Ultrasound anatomy and procedures of the thoracic spine

AGNES STOGICZA, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

Dr. Agnes Stogicza is a board-certified anesthesiologist and critical care physician with 15 years of experience in interventional pain management of acute and chronic pain. She completed her pain fellowship at the University of Washington, where she has been on faculty for the last 7 years. As a clinician-educator she treats pain patients; and teaches minimally invasive interventional pain procedures, regional anesthesia techniques and medication management for medically challenging chronic pain patients to pain fellows and residents.

She is a member of the World Institute of Pain (WIP) Education Committee, the World Academy of Pain Medicine Ultrasonography (WAPMU) Education Committee, Vice-Chair of the Hungarian Section of WIP and serves as an examiner for the FIPP (Fellow of Interventional Pain Practice) and CIPS (Certified Interventional Pain Sonologist) Board Certification.

She regularly lectures and teaches minimally invasive pain management procedures in the US, Europe, South America and Africa for the American Society of Interventional Pain Physicians (ASIPP), WIP, WAPMU, Singular and other societies.

She has authored and co-authored many papers and book-chapters in chronic pain management.

LECTURE

Ultrasound anatomy and procedures of the head and cervical spine

STANLEY LAM, MD, FIPP, CIPS

LECTURE

Ultrasound anatomy and procedures of the shoulder joint

GEORGE CHANG CHIEN, MD

BIOGRAPHICAL SKETCH

Dr. George C. Chang Chien specializes in musculoskeletal medicine and comprehensive pain management. He was trained in Physical Medicine & Rehabilitation at the Rehabilitation Institute of Chicago, and completed fellowship training in comprehensive pain medicine at the prestigious Cleveland Clinic Anesthesiology Institute.

Dr. Chang Chien has authored over 90 manuscripts on the diagnosis and treatment of pain and orthopedic injuries. He has active research in regenerative medicine and is an expert in the use of ultrasound for diagnostic and interventional procedures.

He is currently the Director of Pain Management at Ventura County Medical Center, Director of Center Regenerative Medicine at Southern California University, and Director of GCCInstitute.org where he teaches Regenerative Medicine, Diagnostic Ultrasound, and Ultrasound-Guided procedures. He is on the ASIPP Board of Directors, an ABIPP Examiner, and serves alongside Sudhir Diwan MD, as the Regenerative Medicine Section Co-Editor for Pain Physician Journal.

LECTURE

Ultrasound anatomy and procedures of the elbow joint, wrist and hand

Ultrasound-guided procedures, and diagnostic ultrasound of the elbow, wrist, and hand.

PHILIP PENG, MBBS, FRCPC

BIOGRAPHICAL SKETCH

Dr. Philip Peng is a full professor in the Department of Anesthesia and Pain Management of University of Toronto.

He has played an important role in the education of the pain medicine and established major teaching courses for Pain in Canada such as National Pain Refresher Course, Canadian Pain Interventional Course, and Ultrasound for Pain Medicine Course. Royal College of Physicians and Surgeons of Canada (RCPSC) honored him with Founder designation in Pain Medicine for his role in establishing Pain Medicine subspecialty in Canada. Besides, he currently serves as the Chair of Exam committee in Pain Medicine in RCPSC, and previously served as the chair of the Education Special Interest Group (SIG) of Canadian Pain Society and the founding executive of Pain Education SIG of International Association for the Study of Pain (IASP). He has been honored with numerous teaching awards at national and regional level.

Dr. Philip Peng is also a leader and pioneer in the application of ultrasound for pain medicine. Being one of the founding fathers for Ultrasound for Pain Medicine (USPM) SIG for ASRA (American Society of Regional Anesthesia), he was involved in the est-ablishment of the guideline for Education and Training for USPM, which was adopted by five continents. He is the chair for the new Ultrasound for Pain Medicine Exam Certificate and chair for the Musculoskeletal Pain Ultrasound Cadaver workshop for ASRA. He has been the chair or main organizer for various major teaching course for USPM, including satellite meeting of World Congress of Pain, International Pain Congress, satellite meeting for combined Canadian and British Pain Society Conference, International Symposium of Ultrasound for Regional Anesthesia (ISURA), Canadian Pain Interventional Course.

He is currently the director of Anesthesia Pain Program in Toronto Western Hospital and Interim Director of Wasser Pain Management Center. He has edited 7 books and published more than 150 peer-reviewed publications and book chapters.

LECTURE

Ultrasound anatomy and procedures of the ankle and foot

In this lecture, we will go though the anatomy and sonoanatomy pertaining to the intervention of some common pain problem in foot and ankle region.

MICHA SOMMER, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

LECTURE

Ultrasound anatomy and procedures of the hip and knee joint

PHILIP PENG, MBBS, FRCPC

LECTURE

Knee intervention: update

This lecture will review the three types of intra-articular injections for the osteoarthritis of knee and their efficacy. The anatomic basis for knee denervation and the clinical efficacy of knee radiofrequency ablation will also be reviewed.

DAVID RABAGO, MD

BIOGRAPHICAL SKETCH

Dr. Rabago is a board-certified family medicine physician and associate professor at the UW School of Medicine and Public Health. His continuity clinical practice is in Madison, WI; his research endeavors include assessment of prolotherapy for chronic musculoskeletal conditions including knee osteoarthritis. Dr. Rabago also mentors others in the design, conduct and publication of research devoted to prolotherapy and other injection therapies. He lectures nationally and internationally on these topics.

LECTURE

Regenerative medicine, prolotherapy for knee. There is evidence

This lecture will describe the regenerative injection therapy known as therapy and discuss the existing evidence in the context of knee osteoarthritis, the pain condition for which prolotherapy is best studied. A translational framework will be used to organize information in the areas of basic science, clinical science and dissemination work.

STANLEY LAM, MD, FIPP, CIPS

BIOGRAPHICAL SKETCH

LECTURE

Use of ultrasound in diagnosis

ANDREA TRESCOT, MD, FIPP, CIPS

LECTURE

US and Peripheral Nerve Stimulation

Peripheral nerve stimulation (PNS) has recently increased as a technique of pain management. The use of ultrasound to find these nerves and to position the peripheral nerve stimulator has dramatically improved the efficacy of the placement of the electrodes, which in turn increases the effect of the stimulation. In this lecture, we will discuss the indications, the equipment options, and the techniques of US-directed peripheral nerve stimulation.

GEORGE CHANG CHIEN, MD

LECTURE

Regenerative medicine, PRP, stem cells. What is the evidence?

Discuss the current state of Regenerative Medicine, applications, and evidence base. Separating fact, from fiction.

WESLEY CHIH-CHUN CHEN, MD, CIPS

LECTURE

Tunnel syndromes - Peripheral nerve entrapment

AGNES STOGICZA, MD, FIPP, CIPS

LECTURE

Cryoablation and pulsed radiofrequency for peripheral neuralgias

PHILIP PENG, MBBS, FRCPC

LECTURE

Deep Gluteal Syndrome: is this just a name change from piriformis syndrome?

This lecture will discuss the shortcoming and limitation of using piriformis syndrome to define the pain in the gluteal with sciatic pain and the new and broad definition of deep gluteal syndrome. A lot of new information will be discussed to broaden the concept and understanding of pain in this area.

AUTHORS INDEX

Mert Akbas13, 24
Adnan A. Al-Kaisy 14, 37
Javier de Andres16, 50
Fabricio Dias Assis16, 52
Doug Beall15, 16, 40, 54
Hemmo Bosscher13, 33
Aaron Calodney13, 15, 30, 42
Arnold Caplan13, 30
George Chang Chien17, 18, 57, 59
Kenneth B. Chapman16, 46, 54
Wesley Chih-chun Chen18, 60
Miles Day15, 16, 41, 46
Marshall Devor13, 24
Sudhir Diwan13, 16, 34, 48
Serdar Erdine13, 14, 26, 38
Lorand Eross16, 46
Juan Carlos Flores15, 39, 42
Ira Fox16, 51
Ludger Gerdesmeyer13, 16, 23, 46
Craig Hartrick
Standiford Helm14, 16, 34, 53
Phillipe Hernigou13, 29
Stanley Lam17, 18, 57, 59
Robert Levy14, 37
Andre Mansano17, 56
Jee Youn Moon15, 40
Natalia Murinova13, 31
John Nelson16, 54
Carl Noe15, 43
Charles Oliveira17, 18, 56
Philip Peng17, 18, 58, 60
David Rabaggo18
Gabor B. Racz
Richard Rauck14, 38
Ricardo Ruiz-López13, 14, 31, 35
Michael Sommer
Peter Staats14, 15, 36, 41
Monique Steegers16, 55
Agnes Stogicza
Andrea Trescot
Jan Van Zundert16, 48
Kris C. P. Vissers15, 43
Eric Wilson15, 39
Anthony Yeung13, 32

INDUSTRY TECHNICAL PRESENTATIONS

TUESDAY, AUGUST 28

ROOM TWO & THREE

Moderators: Gabor B. Racz, MD, FIPP, Ira Fox, MD, FIPP

- 07.30 Tibor Racz Medical Consultant Boston Scientific
- 07.45 Chad Diebold European Sales Manager Epimed
- 08.00 Thomas Rudolph Product Manager D-A-CH Nevro
- 08.15 Andrea Trescot, MD, FIPP, CIPS StimWave
- 08.30 Wolfgang Keller Clinical Application Specialist Ziehm Imaging

Acknowledgements

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