While multiple pain treatments, including opioids, are available, there is still a clear need for novel therapeutic options that are effective and well tolerated. Medical Cannabis is emerging as one such option.
SEMINAR DESCRIPTION
This seminar will provide an update on the latest basic and clinical science on the use cannabinoids, including cannabidiol (CBD), the non-psychoactive component of cannabis. Recent evidence and studies suggests that cannabinoids may be a promising therapy. Twenty nine states have recently approved the use of cannabis and cannabis-based products for the treatment of many conditions, including pain, insomnia, nausea, PTSD and seizures. CBD is largely available throughout the United States as a non-psychoactive agricultural product. Using a didactic format, we will review the pharmacology and neurobiology of cannabinoids. We will also review the pre-clinical and clinical evidence for efficacy.

TARGET AUDIENCE
The target audience includes spine and neuro-surgeons, nurse practitioners and advance practice nurses interested in cannabinoid signaling in the brain.

STATEMENT OF NEED
Whether or not they are prescribers, many clinicians will be encountering patients and caregivers who are either using cannabis for symptomatic treatment or are interested in starting. Despite the multitude of treatment options currently available, there is still a need for medications with novel mechanisms of action that are effective and well tolerated. Current studies are looking at the properties of cannabidiol (CBD). This line of research was initiated by extensive evidence that cannabinoids can be used to control human seizures and treat pain. The drug also had fewer side effects and was better tolerated than other widely prescribed pharmacology. Researchers and clinicians need to understand the neurobiology of cannabinoid agents.

EDUCATIONAL OBJECTIVES
After participating in this activity, clinicians should be able to:

• Define the mechanisms of action of CBD and other cannabinoids
• Convey to patients and caregivers the scientific evidence supporting therapeutic use of cannabinoids and potential risks and drug interactions associated with its use

Register by email or phone:
Suzanne@ryortho.com | 1-888-352-1952
# Medical Cannabis Seminar Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>5:30 – 5:40 pm</td>
<td><strong>Introduction and Welcome:</strong> “Medical Cannabis: A Viable Part of Modern Pain Management”</td>
<td>Robin Young, Publisher Orthopedics This Week, Founder New York Stem Cell Summit, CEO, PearlDiver Technologies, Inc.</td>
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<tr>
<td>5:40 – 6:00 pm</td>
<td><strong>Pharmacology of Cannabis and Its Physiologic Effects</strong></td>
<td>Sara Jane Ward, Ph.D, Assistant Professor, Center for Substance Abuse Research, Department of Pharmacology, Temple University, Senior Fellow, Jefferson Institute of Emerging Health Professions, Thomas Jefferson University</td>
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<tr>
<td>6:00 – 6:15 pm</td>
<td><strong>Overview: Medical Cannabis and the Endocannabinoid System: What Every Clinician Should Know</strong></td>
<td>Alex Capano, DNP, CRNP, FNP-BC, Faculty member, Lambert Center for the Study of Medicinal Cannabis and Hemp, Thomas Jefferson University, Senior Fellow, Jefferson Institute of Emerging Health Professions, Thomas Jefferson University</td>
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<tr>
<td>6:15 – 6:40 pm</td>
<td><strong>A Doctor’s Case for Medical Cannabis: Therapeutic Approaches</strong></td>
<td>David Casarett M.D., M.A., Chief of Palliative Care, Professor of Medicine Duke University/Duke Health</td>
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<tr>
<td>6:40 – 7:00 pm</td>
<td><strong>Real World Use of Medical Cannabinoids to Treat Chronic Pain</strong></td>
<td>James Patrick Murphy, M.D., Assistant Clinical Professor at the University of Louisville School of Medicine, Medical Director of Murphy Pain Center, Fellow, American Society of Addiction Medicine</td>
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<tr>
<td>7:00 – 7:30 pm</td>
<td><strong>Q&amp;A and General Discussion</strong></td>
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OUR SPEAKERS

DAVID CASARETT, M.D.
Keynote Instructor

Chief of Palliative Care Services for Duke University Health System, Chief of the Section of Palliative Care within Division of General Internal Medicine, Professor of Medicine, University of Pennsylvania Perelman School of Medicine, Department of Medical Ethics and Health Policy, Director of Hospice and Palliative Care.

Dr. Casarett is a nationally recognized leader in clinical palliative care and an accomplished health services researcher. His research focuses on improving systems of care for people with serious, life-threatening illnesses. He is the author of more than 100 articles in journals including JAMA and The New England Journal of Medicine, and his writing has appeared in print and online in Salon, Esquire, Discover, and Wired.

Casarett is a recipient of the Presidential Early Career Award for Scientists and Engineers, the highest honor given by the U.S. government to researchers in the early stages of their careers.

Chief of Palliative Care, Dr. David Casarett, was recently featured in a video on TEDMED, an independent health and medicine edition of the famous TED conference. His segment is entitled, “A doctor’s case for medical marijuana”.

Because Casarett believed his knowledge about the benefits and harms of medical cannabis was limited, he decided to do some investigative searching of his own. He found evidence of benefits for medical cannabis, found there are risks of taking medical cannabis, but, most surprisingly, that patients using this form of medicine felt more in control over their illness. He challenges us, besides more research, to consider what the mainstream healthcare system can learn from medical cannabis usage.

SARA JANE WARD, PH.D
Instructor

Assistant Professor, Center for Substance Abuse Research, Department of Pharmacology, Lewis Katz School of Medicine, Temple University, Senior Fellow, Jefferson Institute of Emerging Health Professions, Thomas Jefferson University

Dr. Sara Jane Ward is an Assistant Professor in the Center for Substance Abuse Research and Department of Pharmacology. She earned her Ph.D. in neuroscience at Wake Forest University in Winston-Salem NC. She conducted her own NIH-funded research under a postdoctoral fellowship at the University of North Carolina at Chapel Hill and Temple University where she began to study the role of cannabinoids in learning and memory and reward processing. Dr. Ward is currently working on several projects to elucidate the therapeutic potential of non-psychoactive cannabinoids, including studies supported by the National Institutes of Health and Department of Defense investigating the efficacy of Cannabidiol for the treatment of peripheral and central neuropathic pain. Other projects in collaboration with TUSM faculty investigate the efficacy of Cannabidiol and synthetic cannabinoids on a range of nervous system targets including stroke, traumatic brain injury, and addiction. Dr. Ward has been a member of the International Cannabinoid Research Society since 2005.

JAMES PATRICK MURPHY, M.D.
Instructor

Assistant Clinical Professor at the University of Louisville School of Medicine, Medical Director of Murphy Pain Center, Fellow, American Society of Addiction Medicine, Certified in Pain, Addiction, and Anesthesiology.

Dr. Murphy attended medical school at the University of Louisville, interned in Psychiatry at the San Diego Naval Hospital, studied at the Naval Aerospace Medical Institute, and later served as a Naval Flight Surgeon onboard the aircraft carrier U.S.S. Enterprise and during Operation Desert Shield -the buildup to Desert Storm. He returned to Louisville in 1989 for residency training in Anesthesiology and started a very successful Anesthesia practice in Elizabethtown, KY. He then completed a Pain Medicine Fellowship at the Mayo Clinic in Rochester, MN.
and became Kentucky’s first physician to achieve combined board-certification in Pain Management and certification in Addiction Medicine. Building on his reputation as an interventional pain specialist, Dr. Murphy embraces multidisciplinary pain management, including responsible use of controlled substances when necessary. He received a Master of Medical Management degree from the University of Southern California, Marshall School of Business in 2013.

Dr. Murphy is a passionate advocate for chronic pain sufferers and their caregivers. His involvement with regulators in crafting prescription guidelines, along with his Greater Louisville Medical Society sponsored educational courses and public outreach drug abuse seminars, are but a few examples of his activism. Operation Smile medical missions, student mentorships, gratis faculty work at the University of Louisville, community educational seminars, instructive and inspiring literary pieces and pro bono medicolegal work are some of Dr. Murphy’s other interests. He is recognized locally, nationally and internationally as an expert in the fields of Pain Medicine and Addiction Medicine. In 2015, Dr. Murphy founded the first Pain Care Providers Day – a national day of appreciation for all those who care for the suffering.

ALEX CAPANO, DNP, CRNP, FNP-BC
Instructor

Faculty member of The Lambert Center for the Study of Medicinal Cannabis and Hemp, Thomas Jefferson University and a Senior Fellow, Jefferson Institute of Emerging Health Professions, Thomas Jefferson University.

Dr. Capano received her Doctorate from Thomas Jefferson University in 2017, which was focused on cannabinoid science and therapies, while earning the highest honors for her doctoral degree (DNP). Alex’s interest in cannabinoids was sparked when she identified the need for a safer pain reliever, something that could be an alternative to effective but dangerous opioids. Through her research, Alex became extremely enthusiastic about the medical potential of cannabinoid therapies for a broad range of conditions. She also considers cannabinoids an effective supplement to promote wellness in healthy humans. Her hypothesis is that full-spectrum cannabis is much more effective than isolated cannabinoids. She is also interested in evaluating the therapeutic potential of rare cannabinoids, such as THCV, compounds that have been under-recognized and understudied.

Prior to receiving her Doctorate, Alex graduating with honors from University of Pennsylvania while earning bachelor’s degree and a master’s degree to become a licensed family nurse practitioner. She then joined the Smedley Wellness Center, a practice focused on both primary care and reproductive specialty work where she ultimately became the Director of Family Planning for the Center. Alex graduated with honors from the University of Miami, earning a bachelor of science in neuroscience with minors in chemistry, English and business management. Prior to her healthcare work, Alex had a successful career in consulting and media software.

Alex tries to marry her interests of medical work and world travel, such as the time she climbed Kilimanjaro while finishing an HIV-focused internship in Tanzania, or when she dove with great white sharks and hiked Table Mountain after completing a clinical rotation in Botswana. She volunteered to run mobile clinics in Haiti following the devastating 2010 earthquake and worked to educate children in Nepal, both experiences which combined her sense of purpose with her passions.

ROBIN YOUNG
Moderator

Publisher, Orthopedics This Week Chief Executive Officer, PearlDiver Technologies
Founder of the New York Stem Cell Summit and frequent speaker on such topics as Systemic Bias in Clinical Research, Trends in Spine Surgery and Stem Cells and Regenerative Medicine

Former Managing Director and Senior Vice President of Life Sciences Research for Stephens, Incorporated, Mr. Young is one of the leading life sciences analysts, writers and speakers in the United States. He is the author of six books and several thousand research reports and articles. He is also the founder and publisher of RRY Publications and Orthopedics This Week. In 2007 he founded PearlDiver, Inc., one of the premier medical data mining companies in the U.S., and is its CEO. PearlDiver’s data mining tools have been used by academic researchers for more than a decade and are routinely cited in peer reviewed medical journals. Mr. Young holds several patents, serves on a handful of boards of directors and advises companies and surgeon organizations. Mr. Young lives with his wife in the leafy suburbs of Philadelphia.