CONFERENCE SCHOLARSHIP GUIDELINES

Scholarship Eligibility

To qualify, you must be a PM&R, Interventional Spine, Orthopedics, Anesthesia or Family Medicine/Sports Medicine physician currently in a Fellowship Program or PGY 3 and above. In preparation of upcoming scholarship opportunity changes, the applicant will have the option this year to submit an abstract (it can be a case study, case series, or prospective/retrospective data on either basic science or clinical research in orthobiologics or advanced interventional orthopedic techniques), a 1 page review of literature (topic of choice on biological treatment), or application only. **Scholarships will be given priority based on which option is chosen.**

Scholarship Award

Qualified applicant submissions will be reviewed and tiered as follows:

1). Those applicants choosing to complete an abstract will receive priority to the scholarship.

2). Those applicants choosing to complete the 1pg review (topic of their choice) of literature on biological treatment will receive next priority to the scholarship.

3). Those applicants choosing to complete an application only will receive what scholarships are left.

IOF Conference Committee will choose the top six abstracts to present a 10-minute oral/ poster display presentation during the lunch break. These applicants will be announced in January.

All awards will be announced by February 1, 2025.

Applicants can fill out the following application with submission of an abstract or 1 page review and e-mail to: leisha@interventionalorthobiologics.org ***Abstracts and 1-page reviews must be submitted simultaneously with application.***

Interventional Orthobiologics Foundation

Scholarship Application IOF MAX Experience

10th Annual Conference

February 26-March 1, 2025 | Talking Stick Resort | Scottsdale, Arizona

All fields below must be completed to its entirety and be legible!

Name:	Kindred Harris
PGY status in 2024-2025:	PGY4
Residency or Fellowship Program:	Tufts University, research abstracted submitted with mentor extenral to Tufts Unviersity
Program Director Name:	Dr. Nadia Zaman
Program Director Email:	Nadia.Zaman@tuftsmedicine.org
Residency/Fellowship type:	☒ PMR ☐ Interventional Spine ☐ Family Medicine ☐ Sports Medicine ☐ Interventional Radiology ☐ Orthopedics ☐ Anesthesia ☐ Other:_____
Post graduate interests (choose one):	☐ Inpatient rehab ☐ Inpatient/outpatient ☐ 100% Outpatient MSK/Sports ☐ 100% Outpatient Interventional Spine ☒ 100% Both MSK Sports and Interventional Spine
E-mail address:	harriskindred@gmail.com
Mailing Address:	407 D St Apt S306 Boston, MA 02210
Contact cell phone number:	
Application Process (choose one):	☐ Abstract ☒ 1pg review ☐ Application only
MUST SUBMIT WITH APPLICATION	***OPTION 1:*** *Submission of abstract:* • Case Study • Case Series • Prospective/retrospective Data *Submission Categories in Orthobiologics or Advanced Interventional Orthopedic Techniques* • Basic Science • Clinical Research

	OPTION 2: *Submission of 1-page review of literature on biological treatment (topic of choice)*
Volunteer Opportunity:	**☒ I am interested** IOF will have volunteer opportunities for residents & fellows to give back to the Foundation and help set the tone for the conference and be a representative of the Interventional Orthobiologics Foundation. Your assistance would help us achieve our mission to educate and empower orthobiologic services. Volunteer opportunities would be for general session and bio skills labs.

Please submit Application & Abstract or review paper together

Send to: leisha@interventionalorthobiologics.org

Kindred Harris, MD, PGY4 Orthobiologics in the Treatment of Discogenic Low Back Pain (dLBP)

Low back pain (LBP), particularly pain affecting the lumbosacral spine, is a widespread condition that affects over 600 million people worldwide and is the leading cause of disability globally.[1] Most individuals will experience some form of LBP their lifetime.[1] LBP becomes chronic when it persists for three months or longer.[1] Chronic LBP is often more challenging to treat and can become complex due to confounding and contributing factors like psychological and social influences. Given its multifactorial nature, LBP requires a multidisciplinary approach to treatment, which may include rehabilitation, medications (including opiates with high addictive profiles), interventional pain management techniques, and surgery. Recently, there has been increasing interest in interventional pain and spine procedures. These procedures are quick, have a lower side effect profile than surgery, and lack ongoing side effects such as those found with medications. There are many different interventional targets and treatment options, but usually, they fall into the realm of anesthesia therapy, steroid therapy, nerve ablation, or minimally invasive spine manipulation.

Orthobiologics, injectable treatments derived from natural or biological substances, is a therapy that is becoming more commonly employed for peripheral joint pain and disability. These therapies have shown success in treating conditions that are refractory to traditional treatments like steroid injections. Due to their regenerative properties, orthobiologic therapies are now utilized for LBP. This review will focus on a few specific orthobiologic therapies and their role in reducing pain and improving function specifically in discogenic LBP (dLBP).[2] dLBP, accounting for approximately 40% of all LBP cases, is pain stemming from the intervertebral disc. Common assessment tools used to measure the efficacy of orthobiologics in treating dLBP include: the Visual Analogue Scale (VAS) for pain reduction, the Oswestry Disability Index (ODI) for functional improvement, the Numeric Rating Scale (NRS) for pain rating, the Functional Rating Index (FDI) which assesses back pain and dysfunction, and the Short Form Health Survey (SF-36) which assess disability levels and quality of life impacted by back pain.[3] For this topic, an overview of orthobiologics in three categories will be reviewed, including cell-based therapies, PRP, and protein-based therapies.

Cell-based therapies target the pathophysiology of LBP, such as an inability to replace degenerated disc chondrocytes and stem cells in dLBP.[4] Research has shown that autologous disc chondrocyte injections can increase disc fluid content by more than 15%, leading to cell restoration and symptom improvement for up to 24 months.[4] Bone marrow-derived mesenchymal stem cells have also been used to treat chronic dLBP by promoting the differentiation of these cells into critical extracellular matrix components essential for disc repair.[4] In one study with a 10-year follow-up, patients who underwent spinal fusion combined with autologous MSCs conjugated demonstrated significant pain reduction and functional improvement as measured by VAS and ODI scores.[4] Further, postoperative radiological assessments showed no adverse effects on surgical hardware or complications related to the orthobiologic therapy.[4] PRP, one of the most widely known and commonly used orthobiologic therapies for musculoskeletal disorders, led to significant pain improvement as measured by the FDI, RNS, and SF-36 one-year post-intradiscal PRP injection.[4] Finally, animal studies have shown that protein-based therapies such as recombinant human GDF-5 may improve dLBP. GDF-5 plays a key role during embryogenesis in increasing Type II collagen and aggrecan, essential for cartilage resilience against pressure loads, and can be downregulated in degenerative disc disease.[4] This has been shown to improve after injections of recombinant human GDF-5, which demonstrated a significant post-injection increase in chondrocyte numbers and further disc height restoration.[4]

Despite the promising potential of orthobiologic therapies, no single treatment has proven superior to the standard of care for dLBP. Factors such as high costs, limited insurance coverage, and a lack of sufficient long-term data continue to limit the widespread adoption and accessibility of these treatments. Further research is needed to establish more robust clinical evidence to guide practice and refine the applications of orthobiologics for dLBP management. Nevertheless, orthobiologic treatments show great potential in providing long-term management of chronic dLBP, with minimal risks of complications. As research continues and access to these therapies improves, orthobiologics may be increasingly important in managing this prevalent and debilitating condition. Further, orthobiologic therapy success in dLBP can serve as a scaffold to be introduced or continued as a therapy for other anatomical causes of LBP.

References:

1. World Health Organization. Low back pain. World Health Organization. Published June 19, 2023. https://www.who.int/news-room/fact-sheets/detail/low-back-pain
2. 2. Mekhail N, Eldabe S, Templeton E, Costandi S, Rosenquist R. Pain Management Interventions for the Treatment of Chronic Low Back Pain. *The Clinical Journal of Pain*. 2023;Publish Ahead of Print(7). doi:https://doi.org/10.1097/ajp.0000000000001116
3. Feise RJ, Michael Menke J. Functional Rating Index. *Spine*. 2001;26(1):78-87. doi:https://doi.org/10.1097/00007632-200101010-00015
4. Tolson JK, Menuet RL, Ly GH, et al. Evolving role of viadisc for chronic low back and discogenic pain: a narrative review. *Expert Opinion on Emerging Drugs*. 2024;29(2):155-164. doi:https://doi.org/10.1080/14728214.2024.2339912