

The Pain Synapse @ RUSH

Department of Anesthesiology & Pain Medicine | Rush University Medical Center

"Advancing Pain Science. Shaping the Next Generation." • Issue 2 • Fall 2026

◆ FROM THE PROGRAM DIRECTOR'S DESK

To future fellows exploring where to train: Welcome! We invite you to experience the Rush difference.

To our dedicated faculty, alumni, and colleagues: thank you for shaping our community. This newsletter is yours.

— Fellowship Program Director

Dept. of Anesthesiology & Pain Medicine, Rush University Medical Center



6th annual Pentec Health ITP course



Welcome to the 2026-2027 Class!

★ WHY RUSH? PREMIER INTERVENTIONAL FELLOWSHIP

Weekly Lectures

Cadaver Workshops

National Presence

Faculty Mentorship

Clinical Case Load

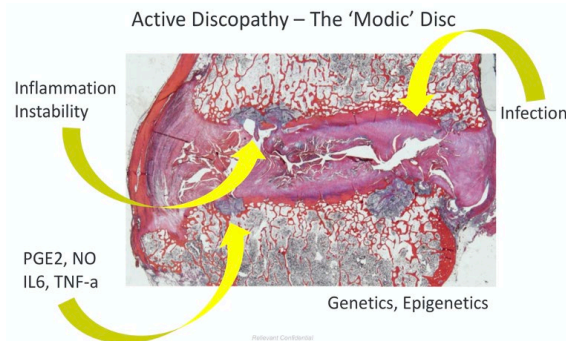
Breadth of Procedures

Apply Now: rushu.rush.edu/painmedicine

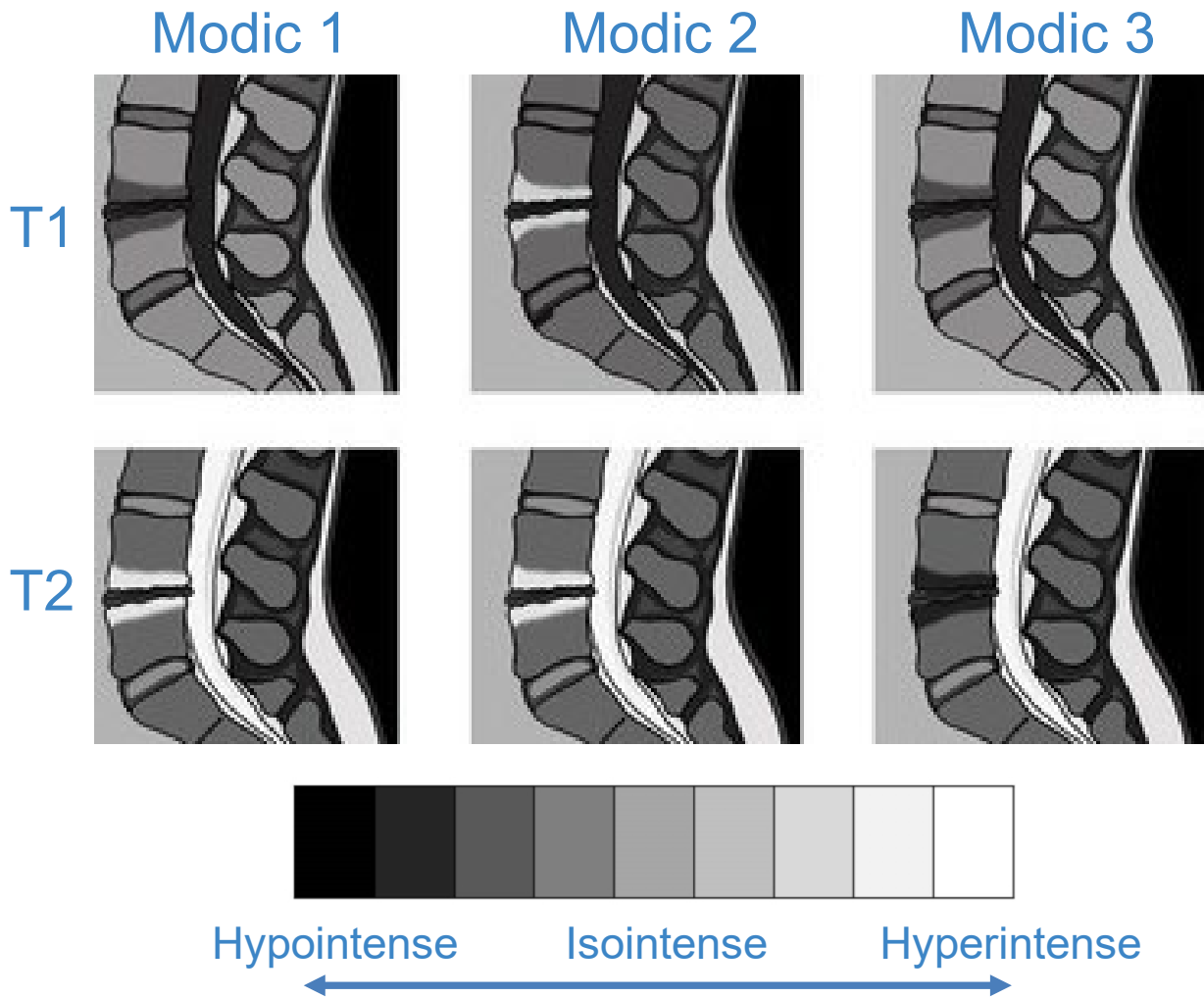
🔬 PAIN KEY FACTS | Clinical Spotlight: Modic Changes & Vertebrogenic Pain

Vertebrogenic pain is a distinct type of chronic lower back pain caused by damage to the vertebral endplates, which are highly innervated by the basivertebral nerve (BVN). This condition is characterized radiographically by Modic changes on MRI.

Modic Type	Pathological Characteristics	MRI Signal Characteristics (T1 / T2)
Type 1	Acute inflammatory/vascular changes; replacement of normal bone marrow with fibrovascular tissue.	Hypointense (Dark) / Hyperintense (Bright)
Type 2	Chronic fatty degeneration; replacement of bone marrow with fatty tissue.	Hyperintense (Bright) / Iso- to Hyperintense (Bright)
Type 3	Subchondral bone sclerosis; extensive hardening of the bone with minimal marrow remaining.	Hypointense (Dark) / Hypointense (Dark)



Modic Change	1	2	3
MRI T1	Low	High	Low
MRI T2	High	High-intermediate	Low
Implication	Marrow inflammation and edema	Fatty replacement of marrow	Trabecular micro-fracture and sclerosis



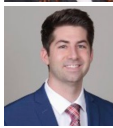
DEPARTMENT NEWS & ANNOUNCEMENTS

Welcoming the Incoming Class of Fellows — Class of 2027

The Department is proud to welcome our incoming class of the Rush Pain Medicine Fellowship — an exceptional group of physicians beginning their rigorous year of advanced interventional training:

- Mohammad Al Nobani, MD
- Clayton Bunting, DO
- Chineze Mbanugo, MD
- Christopher Hollabaugh, MD
- Anand Patil, MD

We are thrilled to welcome you to the team and support your growth into future leaders of clinical excellence and academic innovation. Rush is proud to have you — welcome!



RESEARCH UPDATE

HYDROXYNORKETAMINE

PI - Dr. Buvanendran

PURPOSE
Support the approval of (R,R)-HNK for non-opioid treatment of neuropathic pain.

- INCLUSIONS** ✓
- > 3 month diagnosis of chronic neuropathic pain in the extremities
 - Age 18-75
- EXCLUSIONS** ✗
- Previously received any form of ketamine for the treatment of a chronic pain diagnosis
 - Fibromyalgia diagnosis
 - Severe medical illness
 - Current severe mental illness

PATIENT PROGRESS

8 Done 2 IP 11 More Needed

- Thank you to everyone for your help with this study. The pain clinic residents, fellows, and MAs have been particularly helpful
- Please refer potential patients to the HNK posters in the pain clinic

BURST

PI - Dr. Amin

PURPOSE
Evaluate the use of intermittent dosing as an alternative paradigm for patients with DRG stimulation.

- INCLUSIONS** ✓
- ≥ 6-month continuous DRG therapy for chronic back and/or leg pain
 - Endorse at least 50% pain relief in the targeted area over the last year
 - Seen for a routine follow-up in the last 4 months
- EXCLUSIONS** ✗
- Significant lead migration
 - Other concurrent neuromodulation in place

PATIENT PROGRESS

14 Done 10 More Needed

- Ideal patients are those with a DRG interested in different programming

SLIDE

PI - Dr. Amin

PURPOSE
Ascertain factors associated with SCS lead failure.

- INCLUSIONS** ✓
- Received a permanent SCS or DRGS at Rush University Medical Center manufactured by Abbott, Boston Scientific, Medtronic, Neuro, or Biontronic
- EXCLUSIONS** ✗
- Significant comorbidities

PATIENT PROGRESS

195 Surveyed 305 More Needed

- Refer patients with an SCS or DRG

AMBROS

PI - Dr. Suvar

PURPOSE
Evaluate Neridronate for the treatment of CRPS-1.

- INCLUSIONS** ✓
- A diagnosis of CRPS-1 within the past 6 months with no known peripheral nerve injury to affected limb
 - Edema in affected limb
 - ≥ 2 of the following:
 1. Redness in the affected region relative to the corresponding contralateral region
 2. ≥ 1°C increase in temperature on the affected limb relative to the contralateral limb
 3. Score of 2 or 3 on the 0-3 edema scale
- EXCLUSIONS** ✗
- Current or prior CRPS-2 diagnosis
 - ≥ 40 points on the Pain Catastrophizing Scale (PCS)

- Starting up soon! Keep an eye out for **new** CRPS-2 patients (diagnosed in the past 6 months)