Stanford

Mikhail I. Nemenov

Casual - Non-Exempt, Anesthesiology, Perioperative and Pain Medicine

Bio

HONORS AND AWARDS

- Visiting DAAD Professor, Physiology Institute, Johannes Gutenberg University, Mainz, Germany, (September 1999)
- Visiting Professor, Maxillofacial Surgery Dep., Royal Hospital of London (March 2000)
- Visiting Professor, Medical School University of Michigan, Ann Arbor (December 2002)
- Visiting Professor, Dept. of Biomedical Sciences, Univ. of Maryland Dental School (August 2003)
- Visiting Professor, Dept. Oral Surgery, University of Florida, Gainesville (September 2005)
- Visiting Professor, Pain and Neurosensory Mechanisms Branch, NIDCR, NIH (November 2005)
- Visiting Professor, Pierre-and-Marie-Curie University (January 2012)
- Visiting Professor, University of Kentucky, Lexington (May 2012)
- Visiting Professor, UCSF (November 2021-Present)

EDUCATION AND CERTIFICATIONS

- PhD, Ioffe Physical Tech. Institute, USSR , EE (1986)
- MSc, St. Petersburg Polytechnical University, USSR , Physics (1979)

PATENTS

- Mikhail Nemenov. "United States Patent 7,402,167 Portable laser and process for producing controlled pain", Mar 2, 2004
- Mikhail Nemenov. "United States Patent 8,029,553 Portable laser and process for pain research", Mar 2, 2004

Publications

PUBLICATIONS

- **Paradoxical increases in anterior cingulate cortex activity during nitrous oxide-induced analgesia reveal a signature of pain affect.** *Pain*
  Weinrich, J. A., Liu, C. D., Jewell, M. E., Andolina, C. R., Bernstein, M. X., Benitez, J., Rodriguez-Rosado, S., Braz, J. M., Maze, M., Nemenov, M. I., Basbaum, A. I.
  2025

- **Paradoxical Increases in Anterior Cingulate Cortex Activity During Volatile Anesthetic-Induced Analgesia in Mice**
  Weinrich, J., Jewell, M., Liu, C., Andolina, C., Nemenov, M., Maze, M., Basbaum, A.
  LIPPINCOTT WILLIAMS & WILKINS.2023: 518

- **Paradoxical increases in anterior cingulate cortex activity during nitrous oxide-induced analgesia reveal a signature of pain affect.** *bioRxiv : the preprint server for biology*
  Weinrich, J. A., Liu, C. D., Jewell, M. E., Andolina, C. R., Bernstein, M. X., Benitez, J., Rodriguez-Rosado, S., Braz, J. M., Maze, M., Nemenov, M. I., Basbaum, A. I.

2023

- **Evaluation of a polymer coated nanoparticle cream formulation of resiniferatoxin for the treatment of painful diabetic peripheral neuropathy.** *Pain*
  Baskaran, P., Mohandass, A., Gustafson, N., Bennis, J., Louis, S., Alexander, B., Nemenov, M. I., Thyagarajan, B., Premkumar, L. S.
  2022

- **Assessing the Analgesic Properties of Volatile Anesthetics Using High-Power Infrared Lasers in Mice**
  Weinrich, J., Jewell, M. E., Andolina, C. R., Liu, C. D., Nemenov, M. I., Maze, M., Basbaum, A.
  LIPPINCOTT WILLIAMS & WILKINS.2022: 565

- **Characterization of patients with and without painful peripheral neuropathy after receiving neurotoxic chemotherapy: traditional quantitative sensory testing vs C-fiber and Adelta-fiber selective diode laser stimulation.** *The journal of pain*
  Nemenov, M. I., Alaverdyan, H., Burk, C., Roles, K., Frey, K., Yan, Y., Kazinets, G., Haroutounian, S.
  1800

- **Role of Mechanoinsensitive Nociceptors in Painful Diabetic Peripheral Neuropathy.** *Current diabetes reviews*
  Nemenov, M. I., Singleton, R. J., Premkumar, L. S.
  2021

- **Nociception and inflammatory hyperalgesia evaluated in rodents using infrared laser stimulation after Trpv1 gene knockout or resiniferatoxin lesion.** *Pain*
  Mitchell, K., Lebovitz, E. E., Keller, J. M., Mannes, A. J., Nemenov, M. I., Iadarola, M. J.
  2014; 155 (4): 733-745

- **Sensory Small Fiber Function Differentially Assessed with Diode Laser (DL) Quantitative Sensory Testing (QST) in Painful Neuropathy (PN)** *PAIN MEDICINE*
  Moeller-Bertram, T., Schilling, J. M., Backonja, M. M., Nemenov, M. I.
  2013; 14 (3): 417-421

- **The modality-specific contribution of peptidergic and non-peptidergic nociceptors is manifest at the level of dorsal horn nociresponsive neurons** *JOURNAL OF PHYSIOLOGY-LONDON*
  Zhang, J., Cavanaugh, D. J., Nemenov, M. I., Basbaum, A. I.
  2013; 591 (4): 1097-1110

- **Selective nociceptor activation in volunteers by infrared diode laser** *MOLECULAR PAIN*
  Tzabazis, A. Z., Klukinov, M., Crottaz-Herbette, S., Nemenov, M. I., Angst, M. S., Yeomans, D. C.
  2011; 7

- **Ablation of rat TRPV1-expressing Adelta/C-fibers with resiniferatoxin: analysis of withdrawal behaviors, recovery of function and molecular correlates** *MOLECULAR PAIN*
  Mitchell, K., Bates, B. D., Keller, J. M., Lopez, M., Scholl, L., Navarro, J., Madian, N., Haspel, G., Nemenov, M. I., Iadarola, M. J.
  2010; 6

- **Thermal nociceptive properties of trigeminal afferent neurons in rats** *MOLECULAR PAIN*
  Cuellar, J. M., Manering, N. A., Klukinov, M., Nemenov, M. I., Yeomans, D. C.
  2010; 6

- **Differential brain activation associated with laser-evoked burning and pricking pain: An event-related fMRI study** *PAIN*
  Veldhuijzen, D. S., Nemenov, M. I., Keaser, M., Zhuo, J., Gullapalli, R. P., Greenspan, J. D.
  2009; 141 (1-2): 104-113

- **Identifying biological markers of activity in human nociceptive pathways to facilitate analgesic drug development** *PAIN*
  Chizh, B. A., Greenspan, J. D., Casey, K. L., Nemenov, M. I., Treede, R.
  2008; 140 (2): 249-253

- **Non-invasive diode laser activation of transient receptor potential proteins in nociceptors.** *Proceedings - Society of Photo-Optical Instrumentation Engineers*
  Jiang, N., Cooper, B. Y., Nemenov, M. I.
  2007; 6428

- **Differential activation of trigeminal C or A delta nociceptors by infrared diode laser in rats: Behavioral evidence** *BRAIN RESEARCH*
  Tzabazis, A., Klyukinov, M., Manering, N., Nemenov, M. I., Shafer, S. L., Yeomans, D. C.
  2005; 1037 (1-2): 148-156
- **Inward currents in primary nociceptive neurons of the rat and pain sensations in humans elicited by infrared diode laser pulses** *PAIN*
  Greffrath, W., Nemenov, M. I., Schwarz, S., Baumgartner, U., Vogel, H., Arendt-Nielsen, L., Treede, R. D.
  2002; 99 (1-2): 145-155
- **Laser Radiation in Skin Sensitivity Research** *Journal of Sensory Systems Russian Academy of Sciences*
  Tsirulnikov EM, Nemenov MI, Andreeeva IG
  1997; 11 (2): 222-233
- **Investigation of Skin Sensitivity Due To Visible and Near-Infrared Laser Radiation** *Biomedical Optical Instrumentation and Laser-Assisted Biotechnology, Proceedings of the NATO Advanced Study Institute, Erice, Italy, November 10-22, 1995: NATO Science Series E*
  Nemenov MI, Tsirulnikov EM, Vekshin AA, Andreeva IG
  1995; 325: 73-80
- **Thermal And Skin Pain Sensations Due to Laser Irradiation** *SPIE Proceeding*
  Nemenov MI, Gladysheva LG, Tsirulnikov EM, Andreeva IG
  1995; 2323b: 537-38
- **Laser irradiation influence on skin sensitivity**
  edited by Shladov, I., Weissman, Y., Kopeika, N.
  1995: 38–40
- **THERMAL AND SKIN PAIN SENSATIONS DUE TO LASER IRRADIATION** *Conference on Laser Interaction with Hard and Soft tissue II*
  Nemenov, M. I.
  1995: 537–38
- **THERMAL AND SKIN PAIN SENSATIONS DUE TO LASER IRRADIATION** *Conference on Laser Interaction with Hard and Soft tissue II*
  Nemenov, M. I., GLADYSHEVA, L. G., TSIRULNIKOV, E. M., Andreeva, I. G.
  SPIE - INT SOC OPTICAL ENGINEERING.1995: 537–538

PRESENTATIONS

- Diode Laser Selective Stimulation as a Potential Biomarker for Preclinical and Clinical Analgesic Development - The 7th Annual Pain and Migraine Therapeutics Conference San Diego, CA (2013)
- Selective access of C and A delta small diameter fibers in preclinical and clinical studies - Abbott (2011)
- Diode Laser (DL) selective QST in patients with painful neuropathy (PN) - 4th International Congress on Neuropathic Pain (2013)