

DANIEL E. HARPER, PH.D.

Research Investigator
Chronic Pain & Fatigue Research Center
Department of Anesthesiology
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EDUCATION

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| 2014 | Ph.D., Psychology (Behavioral Neuroscience)
The University of North Carolina at Chapel Hill
Minor: Neurobiology
Dissertation: Psychophysical Examination of the
Thermal Grill Illusion |
| 2011 | M.A., Psychology (Behavioral Neuroscience)
The University of North Carolina at Chapel Hill |
| 2007 | B.S., Psychology with Honors
The University of North Carolina at Chapel Hill |

ACADEMIC APPOINTMENTS

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| 07/2019 – | Assistant Professor, Departments of Anesthesiology (primary) and
Physiology (secondary), Emory University |
| 07/2016 – 06/2019 | Research Investigator (faculty), Department of Anesthesiology,
University of Michigan |
| 06/2014 – 06/2016 | Research Fellow (post-doc), Department of Anesthesiology,
University of Michigan |

RESEARCH SUPPORT

- 07/01/2019 – 06/30/2022 Principal Investigator
Mechanistic Characterization of Pain in Temporomandibular Disorders: Does Pain Centralization Influence Responsiveness to Peripherally Targeted Treatments?
NIH (NIDCR) Grant # R00-DE026810
Annual Total Costs: \$249,000
*Funding contingent upon release by NIDCR, exact dates TBD
- 07/01/2019 – 06/30/2022 Principal Investigator
Metabolic Brain Correlates of Sensory Experience: Cause or Consequence of Pain?
Emory Health Sciences Center: Woodruff Scholar Early Independence Award
Award Total: \$50,000
- 04/01/2017 – 06/30/2019 Principal Investigator
Mechanistic Characterization of Pain in Temporomandibular Disorders: Does Pain Centralization Influence Responsiveness to Peripherally Targeted Treatments?
NIH (NIDCR) Grant # K99-DE026810
Annual Direct Costs: \$109,500
- 02/01/2016 – 01/31/2018 Co-Investigator
Pain Centralization and Peripheral Neuropathy in Temporomandibular Joint Disorder: A Tale of Two Mechanisms
Michigan Institute for Clinical and Health Research (MICHR) Translational Science Award
Award Total: \$50,000
- 06/01/2014 – 03/31/2017 Trainee / Scholar
University of Michigan's TMJD and Orofacial Pain Interdisciplinary Consortium
NIH (NIDCR) Grant # K12-DE023574
Annual Direct Costs: \$497,890

AWARDS AND HONORS

2019	American Pain Society G.F. Gebhart <i>J Pain</i> Early Career Investigator Award
2018	Woodruff Scholar Early Independence Award
2014	TMJ Association Travel Award
2014	Tanner Award for Excellence in Undergraduate Teaching
2013 (Fall)	Chair's Teaching Commendation for Sensation and Perception
2012 (Fall)	Chair's Teaching Commendation for Sensation and Perception
2012 (Spring)	Chair's Teaching Commendation for Sensation and Perception
2012	Psi Chi Award for Outstanding Teaching
2011 (Fall)	Chair's Teaching Commendation for Sensation and Perception
2011 (Spring)	Chair's Teaching Commendation for Biological Psychology
2010	King Research Excellence Award
2007	One-year Merit Assistantship from the UNC Graduate School

PROFESSIONAL AFFILIATIONS

2017 – Present	American Association for Dental Research
2017 – Present	International Association for Dental Research
2014 – Present	American Pain Society
2012 – Present	Society for Neuroscience
2012 – Present	International Association for the Study of Pain

PROFESSIONAL SERVICES

Study Sections

2018	Member of NIDCR Special Emphasis Panel ZDE1 MH (15)
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Ad Hoc Reviewer

2018-2019	<i>Journal of Pain</i> (6)
2016-2018	<i>Pain</i> (5)
2017-2018	<i>Journal of Pain Research</i> (4)
2017-2018	<i>Pain Medicine</i> (4)
2016-2017	<i>JDR Clinical & Translational Research</i> (2)

2015, 2017	<i>Arthritis and Rheumatism (2)</i>
2018	<i>Brain Sciences</i>
2017	<i>European Journal of Pain</i>
2017	<i>Journal of Dental Research</i>
2017	<i>Pain Research and Management</i>
2017	<i>Arthritis Care & Research</i>
2016	<i>Journal of Psychosomatic Research</i>
2016	<i>The Open Dentistry Journal</i>
2014	<i>Seminars in Arthritis and Rheumatism</i>

TEACHING

Institutional

2018	Guest Lecturer: Health Psychology (PSYCH455), <i>Pain, Neurocognition, and the Opioid Crisis</i> , University of Michigan – Dearborn, February 14
2014	Guest Lecturer: Cognitive Neuroscience of Pain (PSYCH447), <i>Peripheral Pain Mechanisms</i> , University of Michigan, September 15
2011-2014	Teaching Fellow (Instructor of Record): Sensation and Perception (PSYC225), University of North Carolina Spring 2014 (44 students), Fall 2013 (42 students), Spring 2013 (44 students), Fall 2012 (45 students), Spring 2012 (44 students), Fall 2011 (44 students)
2010-2011	Teaching Fellow (Instructor of Record): Biological Psychology (PSYC220), University of North Carolina Spring 2011 (44 students), Fall 2010 (43 students), Spring 2010 (34 students)
2009	Teaching Assistant: Biological Psychology (PSYC 220), University of North Carolina Fall 2009 (115 students)

Undergraduate Mentoring

Honors Thesis Committee Member

Kelly Barry (2014), Michael Oehler (2013), John Irvin (2011), Quinn Tracy (2011), and Trevor Brothers (2010)

Mentor for Honors in Psychology (PSYC 693H; PSYC 694H) Students

Kelly Barry (2013-2014), Michael Oehler (2012-2013), John Irvin (2010-2011), and Quinn Tracy (2010-2011)

Mentor for Independent Research (PSYC395) Students

Kelly Barry (2012-2013), Ryan McManus (2012-2013), Michael Oehler (2011-

2012), Lauren Baldwin (2011-2012), John Irvin, (2009-2010), and Timothy Waer (2010)

BIBLIOGRAPHY

Peer-Reviewed Publications

1. Dabiri D, **Harper DE**, Kapila Y, Kruger GH, Clauw DJ, Harte S. (2018). Applications of sensory and physiological measurement in oral-facial dental pain. *Special Care in Dentistry*, 38, 395-404.
2. Schrepf A, Williams DA, Gallop R, Naliboff B, Basu N, Kaplan C, **Harper DE**, Landis JR, Clemens JQ, Strachan E, Griffith JW, Afari N, Hassett A, Pontari MA, Clauw DJ, Harte SE. (2018). Sensory sensitivity and symptom severity represent unique dimensions of chronic pain: A MAPP Research Network study. *Pain*, 159, 2002-2011.
3. **Harper DE**, Ichesco E, Schrepf A, Hampson JP, Clauw DJ, Schmidt-Wilcke T, Harris RE, Harte SE. (2018). Resting functional connectivity of the periaqueductal gray is associated with normal inhibition and pathological facilitation in conditioned pain modulation. *Journal of Pain*, 19(6) 635.e1-635.e15. ***Also featured on journal cover
4. **Harper DE**, Ichesco E, Schrepf A, Halvorson M, Puiu T, Clauw DJ, Harris RE, Harte SE. (2018). Relationships between brain metabolite levels, functional connectivity, and negative mood in urologic chronic pelvic pain syndrome patients compared to controls: A MAPP research network study. *Neuroimage Clinical*, 17, 570-578.
5. Thomas N, **Harper DE**, Aronovich S. (2018). Does temporomandibular joint effusion on MRI correlate with signs and symptoms of TMJ disease? *British Journal of Oral and Maxillofacial Surgery*, 56(2), 96-100.
6. **Harper DE**, Hollins M. (2017). Conditioned pain modulation dampens the thermal grill illusion. *European Journal of Pain*, 21(9), 1591-1601.
7. **Harper DE**, Shah Y*, Ichesco E, Gerstner GE, Peltier SJ. (2016). Multivariate classification of pain-evoked brain activity in temporomandibular disorder. *Pain Reports*, 1(3): e572. *Co-1st author
8. Schrepf A, **Harper DE***, Harte SE, Wang H, Ichesco E, Hampson JP, Zubieta JK, Clauw DJ, Harris RE. (2016). Endogenous opioidergic dysregulation of pain in fibromyalgia: a PET and fMRI study. *Pain*, 157(10), 2217-2225. *Co-1st author
9. **Harper DE**, Schrepf A, Clauw DJ. (2016). Pain mechanisms and centralized pain in temporomandibular disorders. *Journal of Dental Research*, 95(10), 1102-1108.
10. Schrepf A, **Harper DE**, Williams DA, Hassett AL, Harte SE. (2016). Somatic awareness and tender points in a community sample. *Journal of Pain*, 17(2): 1281-1290. PM27589911/PMC5125857
11. Shtein RM, **Harper DE**, Pallazola V, Harte SE, Hussain M, Sugar A, Williams DA, Clauw DJ. (2016). Discordant dry eye disease. *Transactions of the American Ophthalmological Society*, 114, T4. PMC5189926

12. **Harper DE**, Hollins M. (2014). Coolness both underlies and protects against the painfulness of the thermal grill illusion. *Pain*, 155(4), 801-807.
13. Hollins M, McDermott K, **Harper D**. (2014). How does vibration reduce pain? *Perception*, 43(1), 70-84.
14. **Harper DE** and Hollins M. (2012). Is touch gating due to sensory or cognitive interference? *Pain*, 153, 1082-1090.
15. Hollins M, **Harper D**, Maixner W. (2011). Changes in pain from a repetitive thermal stimulus: The roles of adaptation and sensitization. *Pain*, 152, 1583-1590.
16. Hollins M, **Harper D**, Maixner W. (2009). Response to the letter to the editor by Van Damme and colleagues. *Pain*, 144, 343-344.
17. Hollins M, **Harper D**, Gallagher S, Owings EW, Lim PF, Miller V, Siddiqi MQ, Maixner W. (2009). Perceived intensity and unpleasantness of cutaneous and auditory stimuli: An evaluation of the generalized hypervigilance hypothesis. *Pain*, 141, 215-221.
18. Hollins M, Lorenz F, **Harper D**. (2006). Somatosensory coding of roughness: The effect of texture adaptation in direct and indirect touch. *Journal of Neuroscience*, 26, 5582-5588.

Invited Talks

1. **Harper DE**. Altered limbic metabolite levels and functional connectivity in patients with chronic urologic pain. Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (SUFU) Winter Meeting, Miami FL, February 26, 2019.
2. **Harper DE**. Overview of orofacial pain with emphasis on underlying pain mechanisms. University of Detroit Mercy School of Dentistry Seminar Series, February 8, 2019.
3. **Harper DE**. Turn it Up! Neuroimaging Reveals Possible Brain Mechanisms Underlying Perceptual Amplification in Chronic Pain. Emory University Pharmacology and Chemical Biology Seminar Series, Atlanta GA, May 15, 2018.
4. **Harper DE**. When one size does not fit all: Towards tailoring treatments to mechanisms in chronic pain patients. Interdisciplinary Pain Grand Rounds, Kansas University Medical Center, Kansas City KS, December 12, 2017.
5. **Harper DE**. Centralized pain phenotypes in temporomandibular disorders and other chronic pain conditions. Annual Moyers Presymposium for Dental Research, University of Michigan, Ann Arbor MI, March 2016.
6. **Harper DE**. The Thermal Grill Illusion: New Light on an Old Problem. UNC Center for Pain Research and Innovation Seminar Series, UNC, Chapel Hill NC, 2013.

Abstracts & Presentations

1. **Harper DE**, Harris RE, Ichesco E, Robertson-Plouch C, Hanif S, Clauw DJ, Arnold L, Harte SE. Poster Presentation. Heightened excitatory tone in the insular and cingulate cortices is associated with widespread pain, endogenous pain facilitation, and multisensory hypersensitivity in knee osteoarthritis patients. International Association for the Study of Pain, Boston MA, September 2018.

2. Ichesco E, Peltier SJ, **Harper DE**, Pauer L, Clauw DJ, Harris RE. Poster Presentation. Resting Brain Connectivity Predicts Differential Pharmacologic Response in Individual Fibromyalgia Patients. International Association for the Study of Pain, Boston MA, September 2018.
3. Carver K, **Harper DE**, Aronovich S. Oral Presentation. A Pilot Study of Outcomes of Temporomandibular Joint Procedures in Surgical Patients with Fibromyalgia. American Academy of Craniomaxillofacial Surgeons, Portland OR, May 2018.
4. **Harper DE**, Schrepf A, Ichesco E, Aronovich S, Ashman L, Kochlefl L, Clauw DJ, Harris RE, Harte SE. Poster Presentation. Auditory hypersensitivity in temporomandibular disorder is associated with perigenual anterior cingulate cortex metabolite levels. *Journal of Pain*, 19, Supplement 1, S55-S56, March 2018.
5. Harte SE, Ichesco E, **Harper DE**, Harris RE, Clauw DJ, Arnold LM. Poster Presentation. Functional connectivity MRI displays evidence of centralized pain in patients with knee osteoarthritis. *Journal of Pain*, 19, Supplement 1, S56, March 2018.
6. **Harper DE**, Ichesco E, Schrepf A, Clauw DJ, Harris RE, Harte SE. Poster Presentation. Brain metabolite levels, functional connectivity, and negative mood in urological chronic pelvic pain syndrome: A study of the MAPP Research Network. European Pain Federation EFIC, Copenhagen, Denmark, September 2017.
7. Thomas N, **Harper DE**, Aronovich S. Oral Presentation. Should we screen for fibromyalgia and neuropathic pain in TMD? American Association of Oral and Maxillofacial Surgery, San Francisco, CA, 2017.
8. **Harper DE**, Schrepf A, Harte SE, Wang H, Ichesco E, Hampson J, Zubieta JK, Clauw DJ, Harris RE. Poster Presentation. Central opioidergic dysregulation in fibromyalgia: A PET and fMRI study. International Association for the Study of Pain, Yokohama, Japan, October 2016.
9. Schrepf A, **Harper DE**, Williams DA, Hassett AL, Harte SE. Poster Presentation. Somatic awareness and tender points in a community sample. International Association for the Study of Pain, Yokohama, Japan, October 2016.
10. **Harper DE**, Ichesco E, Hampson JP, Clauw DJ, Schmidt-Wilcke T, Harris, RE, Harte SE: Poster Presentation. Abnormalities in brainstem descending inhibitory structures could explain the deficient conditioned pain modulation commonly observed in fibromyalgia patients. Society for Neuroscience, Washington DC, October 2015.
11. Ichesco, E, Hampson JP, **Harper DE**, Harte SE, Clauw DJ, Harris RE, Schmidt-Wilcke T: Poster Presentation. Milnacipran modifies resting brain functional connectivity in fibromyalgia. Human Brain Mapping. Honolulu, HI, 2015.
12. **Harper DE**, Ichesco E, Shah Y, Gerstner GE, Peltier SJ: Poster Presentation. Support vector machines used to classify evoked pain responses in temporomandibular joint disorder patients and healthy controls. NIDCR Trainee Meeting; Boston, MA, 2015.
13. **Harper DE**, Pallazola V, Williams DA, Harte S, Clauw DJ, Shtein R: Poster & Oral Presentation. Confocal microscopy reveals nerve fiber similarities in fibromyalgia and idiopathic chronic dry eye. *TMJ Science*, 7(1), 2014.

14. **Harper DE**, Hollins M: Poster Presentation. Cool adaptation reduces the pain of the thermal grill illusion. Society for Neuroscience, San Diego, CA, 2013.
15. **Harper DE**, Irvin JP, Hollins M: Poster Presentation. Descending inhibition disrupts the thermal grill illusion of pain. Society for Neuroscience. New Orleans, LA, 2012.
16. Hollins M, **Harper DE**, Gallagher SM, Maixner W: Poster Presentation. Hypervigilance does not increase the loudness of unpleasant sounds. *Abstracts of the Psychonomic Society*, 12, 35, 2007.
17. Hollins M, **Harper D**, Gallagher S: Poster Presentation. Does gradual sensitization block vibrotactile pain gating? *Journal of Pain*, 10(4), Supplement 1, S31, 2009.