

## MARIANNE C. REDDAN

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### Positions

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Post-doctoral Fellow, Stanford University 2019-present  
 Advisor: Dr. Jamil Zaki

### Education

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2019 Ph.D., Psychology and Neuroscience, specialization in Cognitive Science  
 University of Colorado at Boulder  
 Advisor: Tor Wager, PhD

2016 M.A., Psychology and Neuroscience  
 University of Colorado at Boulder

2010 B.A., Psychology with Honors  
 New York University, College of Arts and Sciences  
 Lewis Rudin Scholar

### Awards & Honors

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| Quantitative Methods in Behavioral Sciences Certificate                      | 2018    |
| Dosier/Muenzinger Award for Teaching   | 2018    |
| Beverly Sears Graduate Student Grant Award                                   | 2018    |
| <i>Selected for</i> Social Affective Neuroscience Society Trainee Data Blitz | 2018    |
| Institute for Cognitive Science Travel Award                                 | 2017    |
| Social Affective Neuroscience Conference Registration Award (Design)         | 2016    |
| UGGS Travel Award Winner   | 2016    |
| CU Boulder Graduate School Travel Award                                      | 2016    |
| UGGS Event Grant: Diversity in STEM Panel                                    | 2016    |
| UGGS Group Grant: <a href="#">STEMinar</a>                                   | 2015    |
| UGGS Group Grant: Science Research Student Alliance                          | 2015    |
| STEMinar Graduate Research Grant   | 2014    |
| UGGS Group Grant: <a href="#">Brainhacks</a>                                 | 2014    |
| UGGS Group Grant: <a href="#">STEMinar</a>                                   | 2014    |
| NSF Graduate Research Fellowship Honorable Mention                           | 2014    |
| University of Wisconsin-Madison Emotion Symposium Travel Award               | 2013    |
| Friedman Brain Institute Neuroscience Retreat: 'Best Presentation' Award     | 2012    |
| NYU Undergraduate Research Conference: 'Best Poster' Award                   | 2010    |
| NYU Collegiate Research Scholar: Grant                                       | 2010    |
| Psi Chi the New York University Chapter                                      | 2009-10 |
| New York University Lewis Rudin Scholarship                                  | 2006-10 |

### Publications

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Reddan, MC, Young, H, Falkner, J, López-Solà, M, & Wager, TD (2020). Touch and social support influence interpersonal synchrony and pain. *SCAN*.

van't Hof, SR, Van Oudenhove, L, Klein, S, **Reddan, MC**, Kragel, PA, Stark, & R, Wager, TD (2020). The Brain Activation-based Sexual Image Classifier (BASIC): A sensitive and specific fMRI activity pattern for sexual image perception. *bioRxiv*.

Kragel, PA, **Reddan, MC**, LaBar, KS, & Wager, TD (2019). Emotion schemas are embedded in the human visual cortex. *Scientific Advances*.

Matthewson, ., Woo, C., **Reddan, MC**, & Wager, TD. (2019). Cognitive self-regulation influence pain-related physiology. *PAIN*.

**Reddan MC**, Wager TD, & Schiller D (2018) Attenuating Neural Threat Expression with Imagination. *Neuron*, 100, 994-1005

**Reddan MC** & Wager TD (2018) Brain systems at the intersection of chronic pain and self-regulation. *Neuroscience Letters*, 702:24-33

Dutra, S. J., **Reddan, M.**, Purcell, J. R., Devlin, H.C. & Welker, K. M. (in press). Indices and correlates of positive emotion in psychopathology: Methodological and design considerations In Gruber, J. (Ed.), *The Oxford Handbook of Positive Emotion and Psychopathology*. New York, NY: Oxford University Press.

**Reddan MC** & Wager TD (2017) Modeling Pain Using fMRI: From Regions to Biomarkers. *Neuroscience Bulletin*, 1-8.

**Reddan MC**, Lindquist MA, Wager TD (2017) Effect Size Estimation in Neuroimaging. *JAMA Psychiatry*. doi:10.1001/jamapsychiatry.2016.3356

Homan P, **Reddan MC**, Brosch T, Koenigsberg HW, Schiller D (2017) Aberrant link between empathy and social attribution style in borderline personality disorder. *Journal of Psychiatric Research(94)*: 163-171.

Earl E, Demeter D, Mills K, Mihai G, Ruzic L, Ketz N, Reineberg A, **Reddan, M**, Goddings A, Gonzalez-Castillo J, Krzysztof G (2015) Human Connectomes Project Minimal Preprocessing Pipelines to Nipype. Brainhack Project Report from OBM Hackathon. Project URL: <https://github.com/ericearl/hcp2nipype-hack2015>

**Reddan M** (2015) Developing Neural Signatures for Discrete Emotional States. *CU STEMinar Journal* 1(1)23-29.

Chang LJ, **Reddan M**, Ashar, YK, Eisenbarth H, Wager, TD (2015) The Challenges of Forecasting Resilience. *Behavioral and Brain Sciences Commentary* 38: 26-27.

Hildebrandt T, Grotzinger A, **Reddan M**, Greif R, Levy I, Goodman W, Schiller D (2015) Testing the Disgust Conditioning Theory of Food-Avoidance in Adolescents with Recent Onset Anorexia Nervosa. *Behaviour Research and Therapy* 71:131-138

Hartley CA, Gorun A, **Reddan MC**, Ramirez F, Phelps EA (2013). Stressor controllability modulates fear extinction in humans. *Neurobiology of Learning & Memory* 113:149-56.

## Conference Talks

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**Reddan, MC**, Ong, D, & Zaki, J. Human and AI Emotion Inference in Naturalistic Environments at Society for Personality and Social Psychology (SPSP), Virtual Symposium, February 2021.

**Reddan, MC** & Zaki, J. Predicting Empathic Accuracy from Brain Activity. Stanford Psychology Departmental Colloquium Flash Talk. Stanford, CA, March 2020 [Cancelled due to COVID-19 pandemic]

**Reddan, MC**, Ong, D, & Zaki, J. Multisensory information yields more abstract neural representations of emotion inference at Social Affective Science (SAS). San Francisco, CA, March 2020 [Cancelled due to COVID-19 pandemic]

**Reddan MC**, Wager TD, & Schiller D. Attenuating Neural Threat Expression with Imagination. Organization of Human Brain Mapping, Rome, Italy, June 2019.

**Reddan M**, Chang, L, & Wager, TD. A Neural Basis for Embodied Emotion. Social Affective Neuroscience Society, Brooklyn, NY, May 2018.

**Reddan M**. Neurolime: A tool for interpreting nonlinear predictions in neuroimaging. *Unconference*, Vancouver, CA, June 2017.

**Reddan M**. WTF is Deep Learning? Organization of Human Brain Mapping Hackathon *Unconference*, Vancouver, CA, June 2017.

**Reddan M**, Schiller D, and Wager, T. Imagined Extinction Reduces Real-life Threat Expression. Emotion and Motivation Session, Organization of Human Brain Mapping, Honolulu, HI, June 2015.

**Reddan M**, and Wager, T. Neural Patterns of Embodied Emotion. 34<sup>th</sup> Annual Ekstrand Mini-Convention. University of Colorado-Boulder, Boulder, CO. April 2015.

**Reddan M**, Wager, T, and Schiller D. Influence of Imagined Extinction on Real-life Threat Expression. CASL: Colorado Affective Science Laboratories Symposium. University of Colorado-Denver, Denver, CO. April 2015.

**Reddan M**, Schiller D, and Wager, T. Imagined Extinction Training Influences Fear Recovery. 33<sup>rd</sup> Annual Ekstrand Mini-Convention. University of Colorado-Boulder, Boulder, CO. April 2014.

**Reddan M**, Brosch T, Koenigsberg H, Schiller D. Emotion Dysregulation and the fundamental attribution error in borderline personality disorder. Nanosymposium: Fear, Stress, and Social Networks. Society for Neuroscience Annual Meeting, San Diego, CA, November 2013

**Reddan M**, Levy D, Schiller D. The effects of imagination on fear extinction. Nanosymposium on Emotion: Neural Mechanisms of Regulation. Society for Neuroscience Annual Meeting, New Orleans, LA, October 2012

**Reddan M**, Schiller D. The effects of imagination on fear extinction. Friedman Brain Institute Annual Neuroscience Retreat, New York, NY. April 2012

## **Invited Talks**

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**Reddan, MC**, Schiller, D., Wager, R. Attenuating Threat Expression with Imagined Extinction at the 43rd Annual Meeting of the Japanese Neuroscience Society at the Kobe Convention Center in Japan [Virtual], July 2020.

**Reddan M.** Behavioral and Neural Evidence for Social- & Self-Regulation of Pain, Cognitive Psychology Department CU-Boulder, Boulder, CO, Apr 2019.

**Reddan M.** A Neural Basis for Embodied Emotion. Cognitive Lunch Lecture Series, Cognitive Psychology Department CU-Boulder, Boulder, CO, Apr 2018.

**Reddan M.** The Practical Significance of Psychological Classifiers. Cognitive Lunch Lecture Series, Cognitive Psychology Department CU-Boulder, Boulder, CO, Sept 2017.

**Reddan M.** The Prediction and Modification of the Neural Representation of Threat. Cognitive Lunch Lecture Series, Cognitive Psychology Department CU-Boulder, Boulder, CO, Feb 2016.

**Reddan M.** 'Decoding' Emotion: How Machine Learning and Representational Similarity Analysis are Reshaping Psychology, Gruber Lab Meeting, University of Colorado-Boulder, CO. Feb 2016.

**Reddan M.** Affective Computing & Wearable Technology, Affective Science Guest Lecture, Professor June Gruber, PhD, University of Colorado-Boulder, CO. September 2015.

**Reddan M**, Chang L, and Wager, T. Development of Neural Signatures of Nuanced Emotional Events. Interdisciplinary Science Short: Physics in Medicine, University of Colorado-Boulder, Boulder, CO. November 2014.

**Reddan M**, Chang L, and Wager, T. Application of Machine Learning Techniques to the Neural Processing of Human Emotion. STEMinar, University of Colorado-Boulder, Boulder, CO. November 2014.

## **Conference Abstracts**

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**Reddan, MC**, Ong, D, & Zaki, J. Modal and Supramodal Representations of Emotion Inference. Social Affective Neuroscience Society (SANS). **Poster**. Santa Barbara, CA, May 2020. [Cancelled due to COVID-19 pandemic]

**Reddan M**, Chang, L, & Wager, TD. A Neural Basis for Embodied Emotion. **Poster**. Organization of Human Brain Mapping, Rome, Italy, June 2019.

**Reddan M**, Lindquist M & Wager T. Understanding Bias in Neuroimaging Effect Sizes **Poster**. Organization of Human Brain Mapping, Vancouver, CA, June 2017.

**Reddan M**, Young, H & Wager T. Supportive Touch Induces Interpersonal Physiological Synchrony and Reduces Perceived Pain **Poster**. Social Affective Neuroscience Society, Los Angeles, CA, March 2017.

**Reddan M**, Wager T. The Neural Basis of Embodied Emotion **Poster**. Human and Animal

Emotions Conference, Erice, Sicily, May 2016.

**Reddan M**, Wager T, Schiller D. Imagine That! Simulated Extinction Training Reduces the Expression of Fear in the Brain and Body **Poster**. Social Affective Neuroscience Society, New York, NY, April 2016.

Schiller D, Levy I, **Reddan M**, Jackson E, Harpaz-Rotem I. (2013). **Talk**. Neural Mechanism of Fear/Safety Updating in PTSD Patients. *Biological Psychiatry*(73:9)53S.

**Reddan M**, Levy D, Schiller D. The Efficacy and Neural Correlates of Imagined Extinction. **Poster**. Wisconsin Symposium on Emotion, Madison, WI, April 2013.

Schiller D, Manson K, **Reddan M**, Jackson E, Levy I, Harpaz-Rotem I. Reversal of fear and safety in PTSD patients. **Talk**. Nanosymposium on Emotion: Neural Mechanisms of Regulation, Society of Neuroscience Annual Meeting, New Orleans, LA, October 2012.

**Reddan M**, Levy D, Schiller D. Extinguishing learned fear by imagination. **Poster**. The Pavlovian Society Annual Meeting, Jersey City, NJ, September 2012.

**Reddan M**, Thompson C, Schiller D. The “Positive” Role of the Negative System. **Poster**. Translational and Molecular Imaging Institute Conference. Icahn School of Medicine at Mount Sinai. New York, NY. May 2011

Hartley CA, Gorun A, **Reddan M**, Phelps EA. The Influence of Stressor Controllability on Conditioned Fear Expression in Humans. **Poster**. The Pavlovian Society Annual Meeting, Baltimore, MD. October 2010

**Reddan M**, Gorun A, Hersh A, Hartley CA, Phelps EA. The influence of behavioral control on human fear acquisition and retention. **Poster**. NYU Undergraduate Research Conference, New York, NY. April 2010

**Reddan M**, Gorun A, Hersh A, Hartley CA, Phelps EA. The influence of behavioral control on human fear acquisition and retention. **Poster**. N.E.U.R.O.N. Conference at Hunter College, New York, NY. April 2010

## **Research Experience**

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MOUNT SINAI SCHOOL OF MEDICINE

2010 – 2013 Lab Manager

**Laboratory for Affective Neuroscience**, Adviser: **Daniela Schiller, PhD**

Departments of Psychiatry and Neuroscience, New York, NY

JAMES J. PETERS VETERANS ASSOCIATION AND MEDICAL CENTER

2012 – 2013 Research Volunteer

**Lab of Electrical Brain Stimulation**, Adviser: **Harold Koenigsberg, MD**

Department of Psychiatry, Bronx, NY

NEW YORK UNIVERSITY

2009 – 2010 Undergraduate Research Assistant

**Laboratory of Elizabeth Phelps**, Mentor: **Catherine Hartley, PhD**

Department of Psychology, New York, NY

KINGS COLLEGE LONDON

Spring 2009 Undergraduate Research Assistant

**Laboratory of Melissa Lamar**, Adviser: **Melissa Lamar, PhD**

Institute of Psychiatry at Guy's Hospital, London, UK

COLUMBIA UNIVERSITY

2008 – 2009 Volunteer Research Assistant

**Laboratory of René Hen**, Mentor: **Kimberly Scobie, PhD**

New York State Psychiatric Institute, New York, NY

## Teaching Experience

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### UNIVERSITY OF COLORADO-BOULDER

LAB INSTRUCTOR

2018 *Cognitive Neuroscience*, Professor: **Tim Curran, PhD**

GUEST LECTURER

2017 *Affective Neuroscience*, Professor: **Tor Wager, PhD**

“The Social and Basic Neuroscience of Touch”

2015 *Affective Neuroscience*, Professor: **Tor Wager, PhD**

“Affective Computing and Wearable Technology”

TEACHING ASSISTANT

2014 *Psychological Statistics*, Professor: **Diane Martichuski, PhD**

2014 *Cognitive Psychology*, Professor: **Joseph Berta, PhD**

2015 *Human Emotion*, Professor: **June Gruber, PhD**

2016 *Introduction to Psychology*, Professor: **Joseph Berta, PhD**

2016 *Personality*, Professor: **Chelsea Pierotti, PhD**

2017 *Human Emotion*, Professor: **June Gruber, PhD**

INSTRUCTOR

2015 *STEM Academy: 3D Printing and Design*, CU Science Discovery Program

2016 *Rapid Prototyping; Lasting Lessons*, CU Science Discovery Program

2016 *Interactive Circuits and Wearable Technology*, CU Science Discovery Program

### NEW YORK UNIVERSITY

2009 – 2010 Teaching Assistant / Recitation Leader

*Introduction to Psychology*, Professor: **Ted Edgar Coons, PhD**

## Science Mentoring

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Gigi Keziah, Fairview High School, Boulder, CO

Project: Feature Weighting in Multimodal Affect Prediction and Emotion Inference

2019 Boulder Valley Science Fair

2019 Intel Science Engineering Fair, 3<sup>rd</sup> Place in Behavioral & Social Sciences at CSEF

Huilin Han, Monarch High School, Louisville, CO  
Project: Neural Evidence for Embodied Emotion: A Neuroimaging Study  
2018 Boulder Valley Science Fair

Kate Nakasato and Madison Risi, Monarch High School, Louisville, CO  
Project: Meta-Analysis of Brain and Immune Interactions during Anger  
2017 Boulder Valley Science Fair

Natalie 'LeeJay' Guyton, Nederland High School, Nederland, CO.  
Project: Genetic and Environmental Contributions to Misaphonia  
2016 Boulder Valley Science Fair

Emily Tarbush, University of Colorado, Boulder, CO.  
Project: Gender Effects in Touch Analgesia  
2016 Boulder Valley Science Fair

Hannah Young, University of Colorado, Boulder, CO.  
Project: Analgesic Effects of Gentle Touch and Social Support  
2015 CU Boulder Undergraduate Research Conference

Julia Falkner & Tess Rudd, Monarch High School, Louisville, CO.  
[Science Research Seminar](#)  
Project: Influence of Interpersonal Interactions on Pain Perception  
2015 ISEF special award from the American Psychological Association

Abigail Orlando, East Chester High School, Eastchester, NY.  
Project: The cognitive and psychological effects of the emoticon.  
2013 Intel Science Talent Search: Report Badge  
2013 Intel International Science and Engineering Fair finalist  
1<sup>st</sup> Place Behavior Category  
1<sup>st</sup> Place American Psychological Association Competition  
2<sup>nd</sup> Place Psi Chi Honor Society  
2013 Junior Humanities and Science Symposium  
2013 Westchester Science and Engineering Fair

May Yuan, Great Neck South High School , Long Island, NY.  
Project: How disgust influences social decision making.  
2012 Long Island Science and Engineering Fair  
2012 Social & Affective Neuroscience Annual Meeting. Poster

## **Neuroscience Community Outreach**

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### **ELEMENTARY & HIGH SCHOOL SPECIAL LECTURES ON THE BRAIN:**

Watershed School Boulder, CO  
8<sup>th</sup> Grade Class: The Neuroscience of Controlling Fear Feb 15, 2018

Academy of St. Dorothy's Staten Island, NY  
3<sup>rd</sup> Grade Class: Brain anatomy, learning, memory, and sleep *yearly* 2013 - 2017

Bay Ridge Preparatory High School Brooklyn, NY

Special Education Seniors: Learning, Memory, and Neuroplasticity Dec 19, 2013  
Advanced Seniors: Current Research on Threat Learning and Fear Dec 19, 2013

Northern Manhattan Public Schools: Brain Awareness Week

Mount Sinai School of Medicine New York, NY March 2013  
K – High School Students attended an event I co-organized, where our laboratory and others hosted interactive booths demonstrating neurophysiological recording techniques, and played games that revealed principles of learning and memory

**COMMUNITY PRESENTATIONS & WORKSHOPS:**

Socioeconomic Contributions to Chronic Pain and Anxiety  
ISO Community Meetings Denver, CO June 10, 2017

Brain Hacks & a Movie Series [www.boulderbrainhacks.com](http://www.boulderbrainhacks.com) Monthly, 2014  
[Solid State Depot](http://SolidStateDepot.com) Boulder, CO  
Founder & Organizer.

‘Hacking’ Your Brain May 16, 2013  
[Make Staten Island](http://MakeStatenIsland.com) Staten Island, NY.  
Interactive talk with a computational perspective on learning and memory

**Community Involvement**

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**CU GRADUATE SEMINAR CU-BOULDER, CO**  
student-organized seminar series at the University of Colorado for science, technology, engineering, and math students.  
2014 – 2017 Coordinator: Trubee Davison

**GREENWOOD WILDLIFE REHABILITATION CENTER BOULDER, CO**  
non-profit wildlife rehabilitation center  
2014 – 2015, *Volunteer* Coordinator: Jenny Bryant

**SOLID STATE DEPOT: MAKERSPACE BOULDER, CO**  
community space where diverse people get together and collaborate on creative and technical projects (<http://www.boulderhackerspace.com>)  
2013- present, *Board Member* President: Joel Bartlett

**MAKE STATEN ISLAND: MAKERSPACE STATEN ISLAND, NY**  
creative space for tinkerers and artists to learn, share, and teach. The classes we teach are free and open to the public. (<http://www.make.si>)  
2012 – 2013, *Member* President: Sarah MacArthur

**THE CARING COMMUNITY NEW YORK, NY**  
Through this center, I began escorting an elderly woman, Phyllis Pagano, to Bingo. Our relationship continued onto her entry to a nursing home where I visit her regularly and take her out for various activities.  
2009 - 2013, *Volunteer* Coordinator: Jonathan Maresco



**EMPTY CAGES COLLECTIVE**

non-profit no-kill animal shelter and wildlife rehabilitation center

2010 – 2013, *Volunteer*

**BROOKLYN, NY**

Coordinator: PJ McKowsky

**WEST 10<sup>TH</sup> LITERARY PUBLICATION**

NYU undergraduate creative writing publication

2008 – 2010, *Poetry Editor*

**NEW YORK, NY**

Coordinator: Scott Statland