

Nicolas Brunet

Curriculum Vitae

Millsaps College
Department of Psychology and Neuroscience.
1701 N State St.
Jackson, MS 39210

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Brandon, MS 39047
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EDUCATION

- Ph.D. Molecular Biophysics, Florida State University, Tallahassee, 2006
B.S. Physics (Magna Cum Laude), Universidad de Las Americas, Puebla, Mexico, 2001

PROFESSIONAL EXPERIENCE

- 2022-current Associate Professor, Department of Psychology, California State University of San Bernardino
2021-2022 Director of Neuroscience, Millsaps College
2018-2022 Assistant Professor, Department of Psychology and Neuroscience, Millsaps College
2015-2018 Research Assistant Professor, Department of Ophthalmology, SUNY Downstate
2014-2015 Postdoctoral Fellow, Department of Psychiatry, University of Pittsburgh
2012-2014 Postdoctoral Fellow, Department of Neurological Surgery, University of Pittsburgh
2008-2012 Postdoctoral Fellow, Donders Institute, University of Nijmegen, the Netherlands
2006-2008 Postdoctoral Fellow, Department of Biophysics, University of Washington

FUNDING

- 2021-2024 NIH R15 AREA grant (**\$408,100**)
2020 Additional funding provided by the National Institutes of General Medical Sciences for the purchase of equipment. (**\$22,000**)
2019-2022 National Institutes of General Medical Sciences, P20 (#GM103476), Millsaps College, MS (**\$442,500**)
2018 Technology Acceleration Fund, State University, NY (**\$50,000**)
2003-2005 American Heart Association Grant, Florida State. (**\$40,000**)

PUBLICATIONS (Peer Reviewed)

- 2021 S.N. Grondhuis, A. Jimmy, C. Teague and **N.M. Brunet**. Having difficulties reading the facial expression of older individuals? Blame it on the facial muscles, not the wrinkles. *Frontiers in Psychology* 12, 1924 (2021).
- 2020 **N.M. Brunet** and J. Sharp. Do glasses modulate age perception? *i-Perception*, 11(4). (2020).
- 2019 **N.M. Brunet** and B. Jagadeesh. Familiarity with visual stimuli boosts recency bias in macaques. *PeerJ*, 7, e8105. (2019).
- 2019 **N.M. Brunet** and P. Fries. Human visual cortical gamma reflects stimulus structure. *Neuroimage* 200, 635-643. (2019).
- 2016 A. de Pesters, W.G. Coon, P. Brunner, A. Gunduz, A.L. Ritaccio, **N.M. Brunet**, ... & G. Schalk. Alpha power indexes task-related networks on large and small scales: A multimodal ECoG study in humans and a non-human primate. *Neuroimage* 134, 122-131. (2016).
- 2016 C.M. Lewis, C.A. Bosman, **N. Brunet**, B. Lima, M.J. Roberts, T. Wommeldorf, ... & P. Fries. Two frequency bands contain the most stimulus-related information in visual cortex. *bioRxiv*, 049718. (2016).
- 2014 A.S. Ghuman, **N.M. Brunet**, Y. Li, R.O. Konecky, J.A. Pyles, S.A. Walls, V. Destefino, W. Wang and R.M. Richardson. Dynamic encoding of face information in human fusiform. *Nature communications* 5. (2014).
- 2014 **N. Brunet**, M. Vinck, C.A. Bosman, W. Singer, and P. Fries. Gamma or no gamma that is the question. *Trends in Cognitive Science*, 18(10) 507-509. (2014).
- 2014 D.A. Pinotsis, **N.M. Brunet**, A. Bastos, V. Litvak, C.A. Bosman, P. Fries and K.J. Friston. Contrast gain-control and horizontal interactions in V1: a DCM study. *Neuroimage* 92, 143-155. (2014).
- 2014 **N.M. Brunet**, C.A. Bosman, M. Vinck, M. Roberts, P. Xiong, R. Oostenveld, R. Desimone, P. De Weerd and P. Fries. Stimulus repetition modulates gamma-band synchronization in primate visual cortex. *PNAS* 111(9), 3626-3631. (2014).
- 2014 **N.M. Brunet**, P.B. Chase, G. Mihajlovic, and B. Schoffstall. Ca²⁺-regulatory function of the inhibitory region of troponin T: Effects of familial hypertrophy mutations cTnI R145G and cTnT R278C, alone and in combination, on filament sliding. *Archives of Biochemistry and Biophysics* 552, 11-20. (2014).
- 2013 **N. Brunet**, C.A. Bosman, M.J. Roberts, R. Oostenveld, T. Womeldorf, P. De Weerd and P. Fries. Visual cortical gamma-band activity during free viewing of natural images. *Cerebral Cortex* (2013): bht280.
- 2013 M.J. Roberts, E. Lowet, **N. Brunet**, M. Ter Wal, P. Tiesinga, P. Fries, and P. De Weerd. Robust gamma coherence between macaque V1 and V2 by dynamic frequency-matching. *Neuron*, 78(3), 523-536

- 2012 C.A. Bosman, J.M. Schoffelen, **N. Brunet**, R. Oostenveld, A.M. Bastos, T. Womelsdorf, B. Rubehn, T. Stieglitz, P. De Weerd, and P. Fries. Attentional stimulus selection through selective synchronization between monkey visual areas. *Neuron*, 75, 875–888
- 2012 **N.M. Brunet**, G. Mihajlovic, K. Aledealat, F. Wang, P. Xiong, S. von Molnar, and P.B. Chase. Micromechanical Thermal Assays of Ca²⁺-regulated thin-filaments function and modulation by hypertrophic cardiomyopathy mutants of human cardiac troponin. *The Journal of Biomedicine and Biotechnology*, 2012:657523
- 2011 F. Wang, **N.M. Brunet**, J.R. Grubich, E.A. Bienkiewicz, T.M. Asbury, L.A. Compton, G. Mihajlovic, V.F. Miller, and P. B. Chase. Facilitated cross-bridge interactions with thin filaments by familial hypertrophic cardiomyopathy mutations in -tropomyosin. *The Journal of Biomedicine and Biotechnology*, 2011:435271
- 2011 B. Schoffstall, V.A. LaBarbera, **N.M. Brunet**, B.J. Gavino, L. Herring, S. Heshmati, B.H. Kraft, V. Inchausti, N.L. Meyer, D. Moonoo, A.K. Takeda, and P.B. Chase. Interaction between troponin and myosin enhances contractile activity of myosin in cardiac muscle. *DNA and Cell Biology*, 30(9):653–659
- 2010 M.T. Butcher, P.B Chase, J.W. Hermanson, A.N. Clark, **N.M. Brunet**, and J.E.A. Bertram. Contractile properties of muscle fibers from the deep and superficial digital flexors of horses. *J. Physiology*, 299: R996-R1005
- 2010 D. Moonoo, N.L. Meyer, V. Inchausti, **N.M. Brunet**, V.LaBarbara, and P.B. Chase “Molecular Function of the C-terminal Domain of Cardiac Troponin I”. *Biophysical Journal* 98 (3) 257a, 2010.
- 2008 P. B. Chase, **N.M. Brunet**, G. Mihajlovic, and P. Xiong. Molecular motor-based assays for altered nanomechanical function of Ca²⁺-regulatory proteins in cardiomyopathies, *Materials Research Society*, 1096-FF02-02 (2008)
- 2006 *B. Schoffstall, ***N.M. Brunet**, V. Miller, S. Williams, A. Barnes, F. Wang, L.A. Compton, L. McFadden, D. Taylor, R. Dhanarajan, M. Seavy, and P.B. Chase. Ca²⁺-sensitivity of regulated cardiac thin filament sliding does not depend on myosin heavy chain isoform. *The Journal of Physiology*, 577:935-44. *Contributed equally
- 2005 T.J. Grove, K.A. Puckett, **N.M. Brunet**, G. Mihajlovic, L.A. McFadden, P. Xiong, S. von Molnár, T.S. Moerland, and P.B. Chase. *Packaging actomyosin-based biomolecular motor-driven devices for nanoactuator applications. IEEE*, 28: 556-563.
- 2004 G. Mihajlovic, **N.M. Brunet**, J. Trbovic, P. Xiong1, S. von Molnár, and P. B. Chase. An all-electrical switching and control mechanism for actomyosin-powered nanoactuators. *Applied Physics Letters*, 85:1060-1062.

Complete List of Published Work in:

Google Scholar: <https://scholar.google.com/citations?user=AOIhiw0AAAAJ&hl=en>

MyBibliography: <https://www.ncbi.nlm.nih.gov/myncbi/nicolas.brunet.2/bibliography/public/>

INTELLECTUAL PROPERTY

- 2019 **N.M. Brunet**, R. Alexander, S. Macknik, S. Martinez-Conde. “Methods and System for Measuring Ocular Movement”, US Provisional Patent No. 62/794675, Jan 20, 2019
- 2018 **N.M. Brunet**, R. Alexander, S. Macknik, S. Martinez-Conde. “System and method for inter-individual discrimination based on oculomotor kinematics”, US Provisional Patent No. 62/722951, Aug 26, 2018

INVITED TALKS

- 2021 “Improving the reliability of eye tracking to diagnose concussion” Invited talk, University of Mississippi Medical School, Jackson, MS.
- 2019 “Human visual cortical gamma reflects stimulus structure” Invited talk, Mississippi IDEa Conference.
- 2014 “Dynamic mapping, what does it teach us about the brain?” Invited talk, Florida Atlantic University, Boca Raton, FL
- 2014 “Stimulus repetition modulates gamma-band synchronization in visual cortex”. Invited talk. National Institute of Health, Bethesda, MD.
- 2009 “It only weighs 3 pounds”. Invited talk, Florida State University, Tallahassee, FL
- 2009 “Behavior and neuronal responses in macaque inferotemporal cortex to static and dynamic visual stimuli”, University of Nijmegen, NL.

CONFERENCE ACTIVITY

- 2022 Aastha Banga, Sunny Jagdale, and **N. Brunet** “A class of non-face stimuli that elicit a large N170 component”. 86th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2022 Andrea Tall, Rita Lacy, Madelyn Abbott, Ashwin Venkatakrishnan, Susana Martinez-Conde, Stephen Macknik, and **N. Brunet**. “Microsaccade direction is modulated by covertly attended, but not unattended, visual stimuli”. 86th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2022 **N. Brunet**, Madelyn Abbott, Victoria Patrick, and Ashwin Venkatakrishnan “Recognizing Faces: Do we employ different oculomotor strategies, depending on whether a face belong to our own racial group or not?”. 86th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2021 K. Norse and **N. Brunet** “Face or not a face? An ERP study of pareidolia”. 2021 SouthEast Regional IDEa Conference. San Juan, Puerto Rico.

- 2021 **N.M. Brunet** and A. Venkatakrishnan “Microsaccade direction is not modulated by salient, but unattended, visual stimuli”. 2021 SouthEast Regional IDeA Conference. San Juan, Puerto Rico.
- 2021 R. Bush, L. Mears, A.M. Loftin, K. Norse, K. Thaw and **N.M. Brunet**. “Using electroencephalography to explore visuo-gustatory interactions”. 85th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2021 **N.M. Brunet**. “Improving the reliability of eye tracking to diagnose concussion”. 85th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2021 H. Terry, K. Norse, L. Mears, A.M. Loftin and **N.M. Brunet**. “Uncovering the neural correlates of mid-level vision”. 85th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2021 C. Teague, S.N. Grondhuis, A. Jimmy and **N.M. Brunet**. “What complicates reading the facial expression of older individuals? Wrinkles or weakened facial muscles?”. 85th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2021 **N. Brunet**, F. Bartsch, D.A. Butts, S. Martinez-Conde, S.L. Macknik, “Visual offset responses, in V1, are not modulated by neural feedback.” Society for Neuroscience, Global Connectome.
- 2020 C. Morrison and **N.M. Brunet**. “Affective priming effects of facial expression, potentially signaling danger, disappear when only the eyes and surrounding area are visible”. 84th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2020 J. Sharp and **N.M. Brunet**. “Wearing eyeglasses or sunglasses really makes you look respectively older or younger, but the effect is smaller than you think”. 84th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2020 A. Jimmy, C. Teague and **N.M. Brunet** “Age-related changes in the face decrease our ability to read facial expressions of emotions”. 84th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2020 **N.M. Brunet**. “Stimulus repetition induces a stronger recency effect in rhesus macaque monkey”. 84th Mississippi Academy of Sciences Meeting, Biloxi, MS.
- 2019 **N.M. Brunet**, and L. Stringer. “Modulating factors in the Perception of Emotional Faces Reflect Danger Assessment”. 83th Mississippi Academy of Sciences Meeting, Hattiesburg MS.
- 2018 **N.M. Brunet**, R. Alexander, S. Martinez-Conde and S.L. Macknik. “An oculomotor signature as a fraud resistant tool for biometric identity verification”. Society for Neuroscience, San Diego CA.
- 2017 **N.M. Brunet**, J. Parvizi, P. Fries. “Human visual cortical gamma reflects stimulus structure”. Society for Neuroscience, Washington DC.
- 2017 **N.M. Brunet**, H. Rieiro, J. Cui, S. Martinez-Conde, S. Macknik. “Nonlinear spike timing in NHP V1 correlates with brightness effect in humans”. Society for Neuroscience, Washington DC.

- 2017 M.J. Boring, Y. Li, **N.M. Brunet**, M.J. Ward, M. Richardson, A.S. Ghuman. "Investigating the spatiotemporal dynamics of human visual category processing with intracranial EEG". Society for Neuroscience, Washington DC.
- 2014 A. De Pestere, P. Brunner, A. Gunduz, A.L. Ritaccio, P. De Weerd, M. Roberts, **N.M. Brunet**, R. Oostenveld, P. Fries, G. Schalk. "Alpha activity indexes task-related neuronal populations on large and small scales: evidence from ECoG in a multimodal study in humans and a non-human primate". Society for Neuroscience, Washington DC.
- 2014 A.S. Ghuman, **N.M. Brunet**, Y. Li, R.O. Konecky, J.A. Pyles, V. Destefino, W. Wang, R.M. Richardson. "Dynamic encoding of face information in human fusiform". Society for Neuroscience, Washington DC.
- 2014 A. Peters, **N.M. Brunet**, and P. Fries. "Stimulus repetition enhances gamma-band synchronization between V1 and V4", RESUS, Jena, Germany.
- 2014 Y. Li, **N.M. Brunet**, E. Kessler, and A.S. Ghuman, "Spatiotemporal analysis of Human face individuation". BIOMAG conference, Halifax, Canada.
- 2014 C. Lewis, C. Bosman, **N.M. Brunet**, T. Womelsdorf, and P. Fries. "Two frequency bands contain the most stimulus-related information in visual cortex", FENS, Milan, Italy.
- 2014 B. Schoffstall, **N.M. Brunet**, G. Mihajlovic, and P.B. Chase "Ca²⁺-regulatory function of the inhibitory region of troponin T: Effects of familial hypertrophy mutations cTnI R145G and cTnT R278C, alone and in combination, on filament sliding". Biophysical society, San Francisco, CA.
- 2013 A. De Pestere, P. Brunner, A. Gunduz, C. Mehring, **N. Brunet**, R. Oostenveld, P. Fries, G. Schalk. "Predictive modulation of Alpha and Gamma activity and their interaction during auditory and motor tasks in Monkey and Human". Society for Neuroscience, San Diego, CA.
- 2012 A. Bastos, C.A. Bosman, C.A. Schoffelen, **N. Brunet**, R. Oostenveld, T. Womelsdorf, B. Rubhen, T. Stieglitz, P. De Weerd and P. Fries. "Gamma and beta coherent networks reveal dynamic bottom-up and top-down processing in neocortex". Society of Neuroscience, New Orleans.
- 2008 B. Jagadeesh, Y. Liu and **N.M. Brunet**. Implicit measurement of uncertainty during classification of ambiguous photographs. *Journal of Vision*, 8, article 1040.
- 2008 **N.M. Brunet**, G. Mihajlovic, K. Aledealat, F. Wang, P. Xiong, S. von Molnar and P.B. Chase. Micro-thermal functional assays of Ca²⁺-regulated thin filament function: Effects of hypertrophic cardiomyopathy-associated mutants of human cardiac Troponin. Conference on Computational & Experimental Engineering and Science, Honolulu, HI.
- 2008 P.B. Chase, **N.M. Brunet**, G. Mihajlovic, P. Xiong, and S. von Molnar. Molecular motor-based assays for altered nanomechanical function of Ca²⁺-regulated proteins in cardiomyopathies. Materials Research Society, San Francisco, CA.

- 2007 **N.M. Brunet**, Y. Liu and B. Jagadeesh. Behavior and neural responses in macaque inferotemporal cortex to dynamic stimuli. Society for Neuroscience, San Diego, CA.
- 2006 **N.M. Brunet**, G. Mihajlovic, P. Xiong, S. von Molnar and P.B. Chase. Nanomechanical assays for detection of altered protein function in cardiomyopathies. International Society for Heart Research, North American Section Meeting, Toronto, Ontario, June 13-16, 2006. *J.Mol.Cell.Cardiol.* **40**:6.
- 2005 **N.M. Brunet**, G. Mihajlovic, V.F. Miller, Lori A. McFadden, F. Wang, P. Xiong, S. von Molnár, P.B. Chase. Activation energy of regulated actin filament sliding exhibits two phases with a breakpoint around physiological temperature. Biophysical society, Long Beach, CA, February 12-16, 2005. *Biophys. J.* **88**:134a (2005).
- 2004 G. Mihajlovic, **N.M. Brunet**, S.T. Williams, J. Trobovic, L.A. McFadden, P. Xiong, S. von Molnar and P.B. Chase. A reversible switch for actomyosin-based nanoactuators. Biophysical society, Baltimore, February 14-18, 2004. *Biophys. J.* **86**:57a.
- 2004 **N.M. Brunet**, F. Wang, L. McFadden, V.F. Miller and P.B. Chase. Enhancement of actomyosin function by thin filament mutations in hypertrophic cardiomyopathy: what signaling pathways might be involved? American Heart Association, Portland, July 14-18, 2004. *Circ.Res.* **94**:1523.
- 2003 J. A Jaber, J.B. Schlenoff, P.B. Chase, J.R. Grubich, and **N.M. Brunet**. Actin mobility on polyelectrolyte functionalized myosin surfaces. Division of Colloid and Surface Chemistry.
- 2003 **N.M. Brunet**, J.R. Grubich, F. Wang, T. Asburry, S.T. Williams, L.A. Compton and P.B. Chase. Increased temperature sensitivity of in vitro motility with regulated actin. Biophysical Society, San Antonio, March 1-5, 2003. *Biophys. J.* **84**(2): 570a (2003)
- 2003 P. Manandhar, J. Jaber, **N.M. Brunet**, J.R. Grubich, L. Huang, J. Schlenoff, P.B. Chase and S. Hong. Nanoscale patterning of actomyosin via surface-templated assembly. Biophysical society, San Antonio.

TEACHING and MENTORING EXPERIENCE

Millsaps College

2018-present Courses taught:

PSYC 3100	Cognitive Psychology
PSYC 3110	Sensation and Perception
NEUR 2000	Intro to Neuroscience
NEUR 3200	Neuroanatomy and Physiology
NEUR 4900	Neuroscience Seminar for majors.
PSYC 3220	Neuropsychology
PSYC 1000	Intro to Psychology

Mentoring / Student supervision:

2020-2021	Honors Thesis advisor – Carolina Teague, Millsaps College, MS
2020-2021	Honors Thesis advisor – Isabel Baird, Millsaps College, MS
2020-2021	Honors Thesis advisor – Katelyn Norse, Millsaps College, MS
2018-present	Offering undergraduate opportunities, Millsaps College, MS
2015-2018	Supervising postdocs and graduate students, SUNY Downstate Medical Center.
2012-2015	Supervising undergraduate students at the University of Pittsburgh.
2008-2012	Mentoring undergraduate students at the Donders Institute (Netherlands).
2008-2012	Assisted in mentoring undergraduate students at Florida State University

RELATED LINKS

<https://www.millsaps.edu/major-happenings/major-news/new-concussion-research-taking-place-at-millsaps-college/>

<https://msinbre.org/teams/dr-nicolas-brunet/>

https://msinbre.org/eye-tracking-the-future-of-concussion-diagnosis/?fbclid=IwAR1m9UXwYUe3nU4OeWqjvCLu8Z3Vh1XayxqF825i_OIKg0ls1s285-82sSY

https://www.esi-frankfurt.de/news/2019-07-18_brunet2019_neuroimage/

PERSONAL WEBSITE

Note: This website, although personal, was shared with my colleagues to promote undergraduate research at Millsaps College

<https://www.psychologyandneurosciencelab.com/>

PROFESSIONAL SERVICE

Journal Peer Review	J. of Biophysics, Medical Journals, Frontiers, Peer J. Scientific Reports, PloS One. European conference on eye Movements.
Division Chair	Mississippi Academy of Science, Hattiesburg MS, 2020.
Chair of Neuroscience	Mississippi IDeA Conference 2020 (canceled, covid-19)
Neuroscience Symposium coordinator	Mississippi Academy of Science, Biloxi MS, 2021.
Secretary/Treasurer	Mississippi Chapter SfN, as of 2021
Founding Chair of the new division of Neuroscience	Mississippi Academy of Science, Hattiesburg MS, 2022.

LANGUAGES

Flemish/Dutch: Native speaker

Spanish: Fluent

English: Fluent

French: Intermediate reading, writing, speaking

German: Intermediate reading, writing, speaking

PROFESSIONAL SOCIETY MEMBERSHIP

Society for Neuroscience

Mississippi Academy of Sciences.

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