VITA
(2/01/2026)

Marie T. Banich

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Education:

Ph.D. University of Chicago, Chicago, IL, Ph.D., Behavioral Sciences, 1985
B.A., Tufts University, Medford, MA, Majors: Psychology, Biology, 1978

Positions:

University of Colorado - Boulder

2010 – present	Executive Director, Intermountain Neuroimaging Consortium
2004 – 2016	Director, Institute of Cognitive Science
2000 – present	Professor, Dept. of Psychology & Neuroscience

University of Illinois at Urbana-Champaign

1998 – 2000	Professor, Dept. of Psychology
1994 – 2000	Co-Chair, Biological Intelligence Major Research Theme, Beckman Institute for Advanced Science and Technology
1991 – 1998	Associate Professor, Dept. of Psychology
1989 – 2000	Leader, Cognitive Neuroscience Group, Beckman Institute for Advanced Science and Technology
1985 – 1991	Assistant Professor, Dept. of Psychology

Honors:

2025	Distinguished Career Contribution Award, Cognitive Neuroscience Society
2024	Distinguished Professor, University of Colorado System (all four campuses)
2013 – 2014	James Cattell Sabbatical Fellowship
2011	Faculty Research Award, Dept. of Psychology, University of Colorado Boulder
2010	Faculty Service Award, Dept. of Psychology, University of Colorado Boulder
2009	Fellow, Association for Psychological Science (for outstanding achievement in Psychological Science)
2007	Fulbright Senior Scholar, (University of Verona, Italy)
2005 – 2006	Emerging Leaders Program, University of Colorado
2005	Justine & Yves Sergent Prize (to a leading female researcher in Cognitive Neuroscience)
2002 – 2006	Member, MacArthur Foundation Network on Adolescent Development and Juvenile Justice

1996	University Scholar, University of Illinois
1994	Arnold O. Beckman Research Award
1991	Chi Undergraduate Teaching Award, University of Illinois
1991	Participant, International School of Neuroscience, Padua, Italy
1989	Beckman Fellow, Center for Advanced Study, University of Illinois
1988	Participant, James S. McDonnell Summer Institute in Cognitive Neuroscience
1986	Arnold O. Beckman Research Award
1985	NIH Postdoctoral Fellowship (declined to take present position)
1978	B.A., *magna cum laude*, Tufts University
1976	New England Psychological Association Undergraduate Fellow
1976	Alpha Xi Delta Prize Scholarship, Tufts University

Positions in Professional Societies:

2019 – present	Governing Board, Cognitive Neuroscience Society
2010 – 2014	President, International Society for Behavioral Neuroscience

Editorial Positions:

2025 – present	Consulting Editor, *Current Directions in Psychological Science*
2025- present	Senior Advisory Board, *NeuroImage*
2015 – 2020	Editor-in-Chief, *Cognitive, Affective, and Behavioral Neuroscience*
2008 – 2014	Section Editor, Executive Function & Cognitive Control, *Neuropsychologia*

Governmental Advisory Boards:

2021 – present	Member, Advisory Committee to the National Science Foundation Directorate for Social, Behavioral and Economic Sciences
2016-2020	Standing Member, Cognition and Emotion NIH Scientific Review Panel

Publications (complete list):

A. Books

Banich, M.T., Haber, S.N., Robbins, T. W. (Eds.) (2024). *The Frontal Cortex: Organization, Networks, and Function.* MIT Press.

Banich, M.T. & Compton, R.J. (2023) *Cognitive Neuroscience, 5th edition.* Cambridge, England: Cambridge University Press.

Banich, M.T. & Compton, R.J. (2018) *Cognitive Neuroscience, 4th edition.* Cambridge, England: Cambridge University Press.

Banich, M.T. & Compton, R.J. (2011) *Cognitive Neuroscience, 3rd edition.* Belmont, Ca.: Wadsworth Press.

Banich, M.T. & Caccamise, D. (Eds.) (2011) *Generalization of Knowledge: Multidisciplinary Perspectives.* Philadelphia: Taylor & Francis.

Banich, M.T. (2004) *Cognitive Neuroscience and Neuropsychology, 2nd edition.* Boston: Houghton-Mifflin Company.

Banich, M.T. & Mack, M. (Eds.) (2003) *Mind, Brain, & Language: Multidisciplinary Perspectives* Mahwah, N.J.: Lawrence Erlbaum Associates.

Banich, M.T. (1997) *Neuropsychology: The neural bases of mental function*. Boston: Houghton-Mifflin Company.

B. Chapters

Shenhav, A., **Banich,** M.T., Beste, C., Buschman, T.J., Friedman, N.P., Gratton, C., Koechlin, E., Schuck, N., Wang, X-J, & O'Doherty J (2024). "Integrative Psychological, Computational, and Mechanistic Approaches to Frontal Lobe Function." In *The Frontal Cortex: Organization, Networks and Function Banich*, Edited by M.T. Banich, S.N. Haber & T.W. Robbins, Pp. 225-262, The MIT Press.

Banich, M.T. (2020). How can intrusive thinking be measured *in vivo* and studies in the context of brain mechanisms? In: *Intrusive Thinking across Neuropsychiatric Disorders: From Molecules to Free Will.* edited by P.W. Kalivas and M.P. Paulus. Strüngmann Forum Reports, vol. 30, J.R. Lupp, series editor. Cambridge, MA: MIT Press.

Visser, R.M., Anderson, M.C., Aron, A., **Banich, M.T.**, Brady, K.T., Huys, Q.J.M., Monfils, H-M., Schiller, D., Schlagenhauf, F., Schooler, J.W. & Robbins, T.W. Neuropsychological mechanisms of intrusive thinking. In: *Intrusive Thinking across Neuropsychiatric Disorders: From Molecules to Free Will.* Edited by P.W. Kalivas and M.P. Paulus. Strüngmann Forum Reports, vol. 30, J.R. Lupp, series editor. Cambridge, MA: MIT Press.

Banich, M.T. (2008) Hemispheric specialization and cognition. In Squire, L. (Ed.s). *New Encyclopedia of Neuroscience.* Oxford: Elsevier.

Banich, M.T. (2004) Magnetic Resonance Imaging. In Craighead, W.E. & Nemeroff, C.B. (Eds.) *The concise Corsini encyclopedia of Psychology and Behavioral Science, 3rd Edition,* pp. 545-546, Hoboken, N.J.: John Wiley & Sons.

Banich, M.T. (2003) Interacting hemispheres: A means of modulating attention. Pp 267-270. In Iacoboni, M. & Zaidel, E. (Eds.) *The parallel brain: The cognitive neuroscience of the corpus callosum.* Cambridge, Ma.: The MIT Press.

Banich, M.T. (2003) The divided visual field technique in laterality and interhemispheric integration. In *Experimental Methods in Neuropsychology.* Hughdahl, K (Ed.). pp.47-64, New York: Kluwer Publishers.

Banich, M.T. (2003) Interaction between the hemispheres and its implications for the processing capacity of the brain. In *Brain Asymmetry, 2nd edition,* Davidson, R. and Hugdahl, K. (Eds.), pp. 261-302. Cambridge Ma: MIT Press.

Banich, M.T., & Scalf, P.E. (2003) The neurocognitive bases of developmental reading disorders. In *Mind, Brain, and Language: Multidisciplinary perspectives.* **Banich, M.T.** & Mack, M. (Eds.) pp. 283-306, Mahwah, N.J., Lawrence Erlbaum Associates.

Banich, M.T. (2002) Neuropsychology. In *Textbook of Biological Psychiatry,* D'haenen, H., den Boer, J.A., & Willner, P. (Eds.), pp. 139-153. London: John Wiley & Sons, Ltd.

Banich, M.T., Milham, M.P., Jacobson, B.L., Webb, A., Wszalek, T., Cohen, N.J. & Kramer, A.F. (2001) Attentional selection and the processing of task-irrelevant information: Insights from fMRI examinations of the Stroop task. In *Vision: from neurons to cognition, Progress in Brain Research, Volume 134,* Casanova, C. & M. Ptito (Eds.), pp. 459-470, Amsterdam: Elsevier Science.

Kramer, A.F., Hahn, S., McAuley, E., Cohen, N.J., **Banich, M.T.**, Harrison, C., Chason, J., Boileau, R.A., Bardell, L., Colcombe, A. & Vakil, E. (2001).
Exercise, aging and cognition: Healthy body, healthy mind? In W. Rogers & A.D. Fisk (Eds.), *Human Factors Interventions for the Health Care of Older Adults.* pp. 91-120. Mahwah, N.J.: Erlbaum Associates.

Banich, M.T. & Nicholas, C.D. (1998) Integration of reading processing between the hemispheres. *In Right hemisphere language comprehension: Perspectives from cognitive neuroscience.* Beeman, M., and Chiarello, C. (Eds.), pp. 51-77, Hillsdale, N.J.: Lawrence Erlbaum Associates.

Banich, M.T. (1995) Interhemispheric interaction: Mechanisms of unified processing. For *Hemispheric Communication: Mechanisms and Models.* Kitterle, F.L. (Ed.), pp. 271-300, Hillsdale, N.J.: Lawrence Erlbaum Associates.

Banich, M.T. (1995) Interhemispheric processing: Theoretical and empirical considerations. In *Brain Asymmetry,* Davidson, R. and Hugdahl, K. (Eds.), pp. 427-450, Cambridge Ma: MIT Press.

Levine, S.C, **Banich, M.T.**, & Kim, H. (1987) Variations in arousal asymmetry: Implications for face processing. In *Duality and Unity of the Brain,* Ottoson, D. (Ed.) Wenner-Gren International Symposium Series, Vol. 47, pp. 207-222, London: The MacMillian Press, Ltd.

C. Articles, Reviews & Commentaries

Smith, L. L., Friedman, N. P., Luciana, M., & Banich, M. T. (2025). Functional connectivity patterns of the fronto-parietal and cingulo-opercular networks demonstrate distinct associations with individual differences in cognitive control during early adolescence. *NeuroImage*, *320*, 121454. https://doi.org/10.1016/j.neuroimage.2025.121454

Martinez-Lincoln, A., Leopold, D. R., Groff, B. R., Yeo, D. J., Willcutt, E. G., Cutting, L. E., Banich, M. T., & Price, G. R. (2025). Individual differences in the activity of executive function brain regions during number comparison. *Behavioural brain research*, *494*, 115740. https://doi.org/10.1016/j.bbr.2025.115740

DeRosa, J., Smolker, H. R., Kim, H., Groff, B., Lewis-Peacock, J., & Banich, M. T. (2025). Multivariate neural markers of individual differences in thought control difficulties. *NeuroImage. Clinical*, *47*, 103826.https://doi.org/10.1016/j.nicl.2025.103826

Wang, K., Smolker, H. R., Brown, M. S., Snyder, H. R., Cheng, Y., Hankin, B. L., & Banich, M. T. (2025). Intrinsic Functional Connectivity Associated with γ-Aminobutyric Acid and Glutamate/Glutamine in the Lateral Prefrontal Cortex and Internalizing Psychopathology in Adolescents. *Neuroscience bulletin*, *41*(9), 1553–1569. https://doi.org/10.1007/s12264-025-01408-1

Rowe, M. A., Leopold, D. R., Hegarty, A. K., Cutting, L. E., Petrill, S. A., Thompson, L. A., Willcutt, E. G., & Banich, M. T. (2025). Investigating the Shared and Divergent Neuroanatomical Features of Attentional Deficits in Adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, S0890-8567(25)00252-7. Advance online publication. https://doi.org/10.1016/j.jaac.2025.05.006

Paulsen, B. A., Friedman, N. P., & Banich, M. T. (2025). Engagement of neural systems varies with level of executive function during late childhood: Evidence from a structural equation modeling approach to data from the adolescent brain cognitive development (ABCD) study. *Developmental cognitive neuroscience*, *73*, 101549. https://doi.org/10.1016/j.dcn.2025.101549

Carlson, K. W., 2nd, Smolker, H. R., Smith, L. L., Snyder, H. R., Hankin, B. L., & **Banich, M. T.** (2025). Individual differences in intolerance of uncertainty is primarily linked to the structure of inferior frontal regions. *Cognitive, affective & behavioral neuroscience*, *25*(3), 727–743. https://doi.org/10.3758/s13415-024-01262-0

Bretton, Z. H., Kim, H., Banich, M. T., & Lewis-Peacock, J. A. (2024). Suppressing the Maintenance of Information in Working Memory Alters Long-term Memory Traces. *Journal of cognitive neuroscience*, *36*(10), 2117–2136. https://doi.org/10.1162/jocn_a_02206

Jerinic-Brodeur C., Banich M. T., & Lewis-Peacock J. A. (2024). Maintenance suppression reduces the accessibility of visual information in working memory regardless of its normative valence. *Frontiers in Cognition, 3,* https://www.frontiersin.org/journals/cognition/articles/10.3389/fcogn.2024.1487851

DeRosa, J., Friedman, N. P., Calhoun, V., & **Banich, M. T.** (2024). Neurodevelopmental subtypes of functional brain organization in the ABCD study using a rigorous analytic framework. *NeuroImage*, *299*, 120827. https://doi.org/10.1016/j.neuroimage.2024.120827

Gross, R. S., Thaweethai, T., Kleinman, L. C., Snowden, J. N., Rosenzweig, E. B., Milner, J. D., Tantisira, K. G., Rhee, K. E., Jernigan, T. L., Kinser, P. A., Salisbury, A. L., Warburton, D., Mohandas, S., Wood, J. C., Newburger, J. W., Truong, D. T., Flaherman, V. J., Metz, T. D., Karlson, E. W., Chibnik, L. B., … **Banich, M.T**….RECOVER-Pediatrics Group Authors (2024). Characterizing Long COVID in Children and Adolescents. *JAMA*, *332*(14), 1174–1188. Advance online publication. https://doi.org/10.1001/jama.2024.12747

Smolker, H. R., Reid, C. E., Friedman, N. P., & **Banich, M. T.** (2024). The Association between Exposure to Fine Particulate Air Pollution and the Trajectory of Internalizing and Externalizing Behaviors during Late Childhood and Early Adolescence: Evidence from the Adolescent Brain Cognitive Development (ABCD) Study. *Environmental health perspectives*, *132*(8), 87001. https://doi.org/10.1289/EHP13427

Leopold, D. R., Kim, H., Carlson, K. W., Rowe, M. A., Groff, B. R., Major, M. P., Willcutt, E. G., Cutting, L. E., & **Banich, M. T.** (2024). Stimulus shapes strategy: Effects of stimulus characteristics and individual differences in academic achievement on the neural mechanisms engaged during the N-back task. *Developmental cognitive neuroscience*, *66*, 101372. https://doi.org/10.1016/j.dcn.2024.101372

Coccaro, A., **Banich, M.,** Mammarella, I. C., & Liotti, M. (2024). Estimating the prevalence of Non-Verbal Learning Disability (NVLD) from the ABCD sample. *Scientific reports*, *14*(1), 8212. https://doi.org/10.1038/s41598-024-58639-x

DeRosa, J., Kim, H., Lewis-Peacock, J., & **Banich, M. T.** (2024). Neural Systems Underlying the Implementation of Working Memory Removal Operations. *The Journal of neuroscience : the official journal of the Society for Neuroscience*, *44*(2), e0283232023. https://doi.org/10.1523/JNEUROSCI.0283-23.2023

Banich, M. T., Wang, K., Kim, H., Leopold, D.R., Reineberg, A.E., Thompson, L.A., Willcutt, E.G., Cutting, L.E. & Petrill, S.A. (2023). The influence of Executive Processing on Reading Comprehension During Adolescence. *Mind, Brain, and Education.* 279-288. https://doi.org/10.1111/mbe.12359

Snyder, H. R., Silton, R. L., Hankin, B. L., Smolker, H. R., Kaiser, R. H., **Banich, M. T.**, Miller, G. A., & Heller, W. (2023). The dimensional structure of internalizing psychopathology: Relation to diagnostic categories. *Clinical psychological science : a journal of the Association for Psychological Science*, *11*(6), 1044–1063. https://doi.org/10.1177/21677026221119483

Smolker, H. R., **Banich, M. T.**, & Friedman, N. P. (2023). Combining dimensional models of internalizing symptoms and repetitive negative thought: Systematic replication, model comparison, and external validation. *Journal of psychopathology and clinical science*, *132*(6), 657–668. https://doi.org/10.1037/abn0000845

Smith, L. L., Snyder, H. R., Hankin, B. L., & **Banich, M. T.** (2023). Composite Measures of Brain Activation Predict Individual Differences in Behavioral Stroop Interference. *Journal of cognitive neuroscience*, *35*(5), 781–801. https://doi.org/10.1162/jocn_a_01977

Maes, H. H. M., Lapato, D. M., Schmitt, J. E., Luciana, M., **Banich, M. T.**, Bjork, J. M., Hewitt, J. K., Madden, P. A., Heath, A. C., Barch, D. M., Thompson, W. K., Iacono, W. G., & Neale, M. C. (2023). Genetic and Environmental Variation in Continuous Phenotypes in the ABCD Study®. *Behavior genetics*, *53*(1), 1–24. https://doi.org/10.1007/s10519-022-10123-w

Fassett-Carman, A. N., Smolker, H., Hankin, B. L., Snyder, H. R., & **Banich, M. T.** (2023). Major gender differences in relations between life stressor frequency and gray matter in adolescence and emerging adulthood. *Developmental psychology*, *59*(4), 621–636. https://doi.org/10.1037/dev0001489

Smolker, H. R., Snyder, H. R., Hankin, B. L., & **Banich, M. T.** (2022). Gray-Matter Morphometry of Internalizing-Symptom Dimensions During Adolescence. *Clinical psychological science : a journal of the Association for Psychological Science*, *10*(5), 941–959. https://doi.org/10.1177/21677026211071091

Kim, H., Wang, K., Cutting, L. E., Willcutt, E. G., Petrill, S. A., Leopold, D. R., Reineberg, A. E., Thompson, L. A., & **Banich, M. T.** (2022). The Angular Gyrus as a Hub for Modulation of Language-related Cortex by Distinct Prefrontal Executive Control Regions. *Journal of cognitive neuroscience*, *34*(12), 2275–2296. https://doi.org/10.1162/jocn_a_01915

Banich, M., & Belger, A. (2022). Neural mechanisms of adaptive change to stress and challenge: Introduction to the special section. *Cognitive, affective & behavioral neuroscience*, *22*(4), 641–642. https://doi.org/10.3758/s13415-022-01023-x

Gust, C. J., Moe, E. N., Seals, D. R., **Banich, M. T.**, Andrews-Hanna, J. R., Hutchison, K. E., & Bryan, A. D. (2022). Associations Between Age and Resting State Connectivity Are Partially Dependent Upon Cardiovascular Fitness. *Frontiers in aging neuroscience*, *14*, 858405. https://doi.org/10.3389/fnagi.2022.858405

Freis, S. M., Morrison, C. L., Smolker, H. R., **Banich, M. T.**, Kaiser, R. H., Hewitt, J. K., & Friedman, N. P. (2022). Executive Functions and Impulsivity as Transdiagnostic Correlates of Psychopathology in Childhood: A Behavioral Genetic Analysis. *Frontiers in human neuroscience*, *16*, 863235. https://doi.org/10.3389/fnhum.2022.863235

Anokhin, A. P., Luciana, M., **Banich, M.**, Barch, D., Bjork, J. M., Gonzalez, M. R., Gonzalez, R., Haist, F., Jacobus, J., Lisdahl, K., McGlade, E., McCandliss, B., Nagel, B., Nixon, S. J., Tapert, S., Kennedy, J. T., & Thompson, W. (2022). Age-related changes and longitudinal stability of individual differences in ABCD Neurocognition measures. *Developmental cognitive neuroscience*, *54*, 101078. Advance online publication. https://doi.org/10.1016/j.dcn.2022.101078

Fassett-Carman, A. N., Smolker, H., Hankin, B. L., Snyder, H. R., & **Banich, M. T.** (2022). Neuroanatomical Correlates of Perceived Stress Controllability in Adolescents and Emerging Adults. *Cognitive, affective & behavioral neuroscience*, 10.3758/s13415-022-00985-2. Advance online publication. https://doi.org/10.3758/s13415-022-00985-2

Menardi, A., Reineberg, A. E., Smith, L. L., Favaretto, C., Vallesi, A., **Banich, M. T.**, & Santarnecchi, E. (2022). Topographical functional correlates of interindividual differences in executive functions in young healthy twins. *Brain structure & function*, *227*(1), 49–62. https://doi.org/10.1007/s00429-021-02388-4

Reineberg, A. E., **Banich, M. T.**, Wager, T. D., & Friedman, N. P. (2022). Context-specific activations are a hallmark of the neural basis of individual differences in general executive function. *NeuroImage*, *249*, 118845. https://doi.org/10.1016/j.neuroimage.2021.118845

Smolker, H. R., Wang, K., Luciana, M., Bjork, J. M., Gonzalez, R., Barch, D. M., McGlade, E. C., Kaiser, R. H., Friedman, N. P., Hewitt, J. K., & **Banich, M. T.** (2022). The Emotional Word-Emotional Face Stroop task in the ABCD study: Psychometric validation and associations

with measures of cognition and psychopathology. *Developmental cognitive neuroscience*, *53*, 101054. https://doi.org/10.1016/j.dcn.2021.101054

Matyi, M. A., Cioaba, S. M., **Banich, M. T.**, & Spielberg, J. M. (2021). Identifying brain regions supporting amygdalar functionality: Application of a novel graph theory technique. *NeuroImage*, *244*, 118614. https://doi.org/10.1016/j.neuroimage.2021.118614

Lisdahl, K. M., … **Banich, M.T.**, … ABCD Consortium (2021). Substance use patterns in 9-10 year olds: Baseline findings from the adolescent brain cognitive development (ABCD) study. *Drug and alcohol dependence*, *227*, 108946. https://doi.org/10.1016/j.drugalcdep.2021.108946

Friedman, N. P., **Banich, M. T.,** & Keller, M. C. (2021). Twin studies to GWAS: there and back again. *Trends in cognitive sciences*, *25*(10), 855–869. https://doi.org/10.1016/j.tics.2021.06.007

Chaarani, B., ... **Banich**, **M.T.** … ABCD Consortium (2021). Baseline brain function in the preadolescents of the ABCD Study. *Nature neuroscience*, *24*(8), 1176–1186. https://doi.org/10.1038/s41593-021-00867-9

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Li, Y., … **Banich, M.T.** …Brown, S. (2021). Rates of Incidental Findings in Brain Magnetic Resonance Imaging in Children. *JAMA neurology*, *78*(5), 578–587. https://doi.org/10.1001/jamaneurol.2021.0306

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Ross, J. M., Rieselbach, M. M., Hewitt, J. K., **Banich, M. T.**, & Rhee, S. H. (2021). Children's Knowledge of Cannabis and Other Substances in States with Different Cannabis Use Regulations. *Substance use & misuse*, *56*(14), 2126–2133. https://doi.org/10.1080/10826084.2021.1972316

Kim, H., Smolker, H. R., Smith, L. L., **Banich, M. T.**, & Lewis-Peacock, J. A. (2020). Changes to information in working memory depend on distinct removal operations. *Nature communications*, *11*(1), 6239. https://doi.org/10.1038/s41467-020-20085-4

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Reineberg, A. E., Hatoum, A. S., Hewitt, J. K., **Banich, M. T.** & Friedman, N. P. (2020). Genetic and Environmental Influence on the Human Functional Connectome. *Cerebral cortex (New York, N.Y. : 1991)*, *30*(4), 2099–2113. https://doi.org/10.1093/cercor/bhz225

Hagler, D. J., Jr, … **Banich, M.T.** … Dale, A. M. (2019). Image processing and analysis methods for the Adolescent Brain Cognitive Development Study. *NeuroImage*, *202*, 116091. https://doi.org/10.1016/j.neuroimage.2019.116091

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Major Grant and Research Support:

As P.I. or M.P.I.

P50 HD027802 P.I. Banich; Center P.I., Willcutt 10/1/2023 – 6/30/2028
Differential Diagnosis in Learning Disability: Project III Neuroimaging

R01MH12542 Banich/Lewis-Peacock (MPIs) 8/1/2022 – 7/31/2026
Removing and Manipulating Emotional Information in Working Memory: Cognitive and Neural Representations.

R56MH12542 Banich/Lewis-Peacock (MPIs) 8/1/2021 – 7/31/2022
Removing and Manipulating Emotional Information in Working Memory: Cognitive and Neural Representations

U01D1051018 Banich/Friedman (site MPIs) 4/15/2020 – 3/31/2027
14/21 ABCD-USA Consortium: Research Project Site at CU Boulder

P50 HD027802 P.I. Banich; Center P.I., Willcutt 10/1/2017 – 6/30/2022
Differential Diagnosis in Learning Disability: Project III Functional and Anatomical investigations of Domain-specific and Domain-General Alterations in Neural Systems underlying Math & Reading Difficulty

U01 DA041120 Banich/Hewitt (site MPIs) 12/01/2015 – /5/13/2020
ABCD-USA Consortium: Twin Research Project

R01 MH105501 Banich/Hankin (MPIs) 8/17/2015 – 5/22/2019
Prefrontal Mechanisms of Selection: Disrupted in Internalizing Psychopathology

R21 MH108848 Banich/Lewis-Peacock (MPIs) 6/20/2016 – 3/31/2019
Clearing the Contents of Working Memory: Mechanisms & Representations

P50 MH079485 Banich (PI) 4/22/08 – 01/31/13
Interdisciplinary Behavioral Science Center: Determinants of Executive Function and Dysfunction

R03 HD0626001 Banich (PI) 1/15/10 – 12/31/12
Cognitive and Brain Processes in Individuals with Childhood Interpersonal Trauma

10 IHA 12614 (Colo DHS) Banich (PI) 7/01/10 – 6/30/13
Executive Dysfunction and Suicidal Behavior: An Examination of Veterans with Traumatic Brain Injury, Post-Traumatic Stress Disorder or Both

R01 MH070037 Banich (PI) 6/1/04 – 5/31/10
Brain Mapping and Genetics of Executive Function in ADHD

MacArthur Foundation Banich (site PI) 7/1/03 – 12/31/07
Culpability Study

NSF 0518699 SBE Banich (PI) 10/1/06 – 9/30/08
Leveraging human generalization abilities for optimal learning
R01 MH54217 Banich (PI) 3/1/97 – 2/28/01
Attentional capacity: Modulation by cerebral dynamics

As Co-I (last 10 years)
Coleman Institute for Cognitive Disabilities, Technology Translational Research and Development Award, Welle, Kramer (P.I.s) 9/2024-8/2026
Creating a Cognitive Neuroprothesis for Enhanced Executive Function
R61 DC021924 Kramer, Denman, Paulk (MPIs) 08/2024 – 07/2027
Neocortical microarchitecture of executive function using large-scale intracranial electrophysiology
R01 MH063207 Hewitt (PI) 12/1/13 – 11/30/18
Neural Substrates of Executive Function: An fMRI Twin Study
R37 AG013038 Seals (PI) 4/01/14 – 03/31/19
Nitrite Supplementation for Improving Physiological Function in Older Adults
R01 AG043452 Bryan (PI) 4/01/14 – 03/31/19
Enhancing function in later life: Exercise and functional network connectivity
P60 DA011015 Young (PI) 5/01/09 – 2/28/14
Center on Antisocial Drug Dependence: The Genetics of HIV Risk Behaviors
R01 DA027748 Tanabe (PI) 9/01/09 – 8/31/14
Neural Correlates of Avoidance Learning in Substance Abuse
R01 MH094650 Mittal (PI) 6/01/11 – 2/28/16
Frontal-Subcortical Development, Movement Abnormalities, and Risk for Psychosis
R24 075460 Petrill (PI) 9/1/12 – 8/31/16
Neurobiological Underpinnings of Math and Reading Comorbidity: A Twin Study
R01 DA009842 Crowley (PI) 9/05/06 – 4/30/11
Substance Dependent Adolescents: Imaging Risk-Taking
R21 DA024104 Tanabe (PI) 6/15/08 – 5/31/10
Frontal Striatal Activity During Decision Making in Substance Abuse

Teaching:

Undergraduate:	Cognitive Neuroscience, Biological Psychology, Honors Seminars, Translational Cognitive Neuroscience
Graduate Seminars:	Using ABCD Data to Answer Scientific Questions; Translational Cognitive Neuroscience; Functional Magnetic Resonance Imaging in Cognitive Neuroscience; Executive Function, Higher Order Vision and Attention; Higher Order Cognition

Committee Chair for Doctoral Dissertations:
Neal Stolar (1992)
The association of symptoms in schizophrenia and dysfunction of specific brain regions
Aysenil Belger (1993)
Influences of hemispheric specialization and interaction on task performance
Erika Noll (1996)
Target detection in left and right hemispace
Joel Shenker (1997)

Neurology of attention: Interhemispheric processing provides unique, dynamic, and cognitively-sensitive neural resources in the Stroop task
Alessandra Passarotti (1999)
Insulation of processes across the hemispheres modulates attentional processes
Daniel Weissman (1999)
The cerebral hemispheres cooperate to perform complex but not simple tasks
Kevin Spencer (1999)
Hemispheric mechanisms of visuospatial selective attention
Michael Milham (2002)
An fMRI Analysis of Dorsolateral Prefrontal Cortex's Involvement in Attentional Control
Brendan Depue (2009)
Controlled Memory Suppression: Evidence from Behavioral and Neuroimaging Paradigms and Clinical Populations
Anson Whitmer (2009)
The Cognitive and Neural Mechanisms of Rumination
Amanda Hutchinson (2009)
Corpus Callosum Morphology and function in Attention Deficit Hyperactivity Disorder and the relationship between the corpus callosum and cognitive functioning in healthy adults.
Kristen Mackiewicz (2011)
Cognitive and Brain Processes in Young Adults with a History of Childhood Interpersonal Trauma
Hannah Synder (2012)
Choosing Our Words: Neural Mechanisms Supporting Cognitive Control During Language Processing
Roselinde Kaiser (2012)
Depression and Cognitive Control in the Face of Negative Information or Stressors
Andrew Reineberg (2016)
On the Neural Basis of Individual Differences in Executive Function: A Series of Studies of the "Resting" Brain
Alejandro De La Vega (2016)
Large Scale Meta-analytic Cartography of Human Frontal Cortex
Harry Smolker (2020)
Neuroanatomical Correlates of a Bifactor Model of Internalizing Psychopathology
David Caha (2021)
The Relationship between Internalizing Psychopathology and Poor Sleep: Stability and the Influence of the COVID-19 Pandemic and Stress in Youth and Adult women
Louisa Smith (2024)
Functional Connectivity Patterns of the Fronto-Parietal and Cingulo- Opercular Networks Demonstrate Distinct Associations with Individual Differences in Cognitive Control During Early Adolescence
Boman Groff (2024)
Suppressing information in working memory reduces item-specific information but retains category-general information: Evidence from behavioral and fMRI experiments

Former Postdoctoral Advisees
Rebecca Compton, Ruth Ann Atchley, Xun Liu, Gregory Burgess, Joseph Dagher, Detre Godinez, Jessica Andrews-Hanna, Brendan Depue, Joseph Orr, Kai Wang, Daniel Leopold, Hyojoeng Kim, Megan Patterson, Harry Smolker, Jessica Smith

Current Predoctoral Advisees
Irena Kesselring, Jacob De Rosa, Brynn Paulsen

Reviewing:

Granting agencies:
Ad hoc: NIH, including proposals submitted to NIMH, NIE, NIDA, NINDS, NICHD, NIAAA; National Science Foundation, Natural Sciences and Engineering Research Council of Canada; Israel Science Foundation; Rockefeller Foundation
Journals:
Ad hoc: *Brain & Cognition, Cerebral Cortex, Cognition and Emotion, Cognitive Affective and Behavioral Neuroscience, Cognitive Brain Research, Cortex, Current Trends in Psychological Science, Developmental Neuropsychology, Developmental Psychology, Experimental Brain Research, Human Brain Mapping, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Human Perception and Performance, Journal of the International Neuropsychological Society, Journal of Neuroscience, Nature Neuroscience, NeuroImage, Neuropsychology, Proceedings of the National Academy of Sciences, Proceedings of the National Academy of Sciences Nexus, Psychological Science, Vision Research*

University & Professional Service:

Chair, Space Committee, Dept. of Psychology & Neuroscience, 2024-2025
Member, Diversity, Equity and Inclusion Committee, Dept. of Psychology & Neuroscience, 2023-2024
Chair, Faculty Search Committee, Joint Departmental and Institute Faculty, 2019-2020, 2021-2022
Chair, Search Committee, Director of the Institute for Behavioral Genetics, Fall 2021
Chair, Review Committee, Brain, Biology & Behavior Center, University of Nebraska Lincoln 2021
Member, External Advisory Committee, The Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana- Champaign, 2019
Member, Campus-wide Program Review Committee 2016
Chair, Review Committee, Psychology Program, Georgia Institute of Technology, 2013
Member, Review Committee, External Advisory Panel, Psychology Department, Texas A&M, 2013
Member, Industry Collaboration Advisory Committee, 2013 – 2014
Member, Research Computing /Cyberinfrastructure Committee 2011 – 2014
Member, Program Committee for Annual Meeting, Cognitive Neuroscience Society 2011 – 2013
Member, Faculty Search Committee, Clinical Program, 2010 – 2011; 2011 – 2012
Member, PRP task force University of Colorado Boulder 2005 – 2006
Chair, Faculty Search Committee, Institute of Cognitive Science, 2005 & 2006
Executive Committee of the Institute for Cognitive Science 2003 – 2004
Chair, Cognitive Program, Dept. of Psychology 2003 – 2004
Member, Executive Committee, Dept. of Psychology 2000- 2002
Chair, Institutional Review Board for the Protection of Human Subjects, 1996 – 1998
Chair, Miller Committee, (for planning campus-wide colloquia), 1994 – 1998
Member, Search Committee for the Head of the Department of Psychology, 1995
Member, Miller Committee, Center for Advanced Study, 1991 – 1994
Member, Equal Employment Opportunity Committee, College of Liberal Arts and Sciences, 1994 – 1995

Member, Program Advisory Committee, The Beckman Institute 1994 – 1997
Advisory Board, Program on Women, Information Technology and Scholarship, Center for Advanced Study, 1991 – 1994
Member, Institutional Review Board for the Protection of Human Subjects, 1991 – 1994
Member, Search Committee for the Director of the Beckman Institute, 1992 – 1993

Selected Invited Talks and Presentations:

Keynote Speaker, The Association for Research in Memory, Attention, Decision-making, Imaging, Language, Learning and Organization (ARMADILLO). Texas A&M, College Station, TX, Oct. 18, 2024.
Stop thinking about it!: Cognitive and neural mechanisms of the removal and inhibition of information in memory.

Invited Talk, Collaborative Research Centre (CRC): Volition and Cognitive Control, Technical University of Dresden, May 7, 2024
Controlling One's Thoughts: Neural Systems and Individual Differences

Developmental Affective Neuroscience Symposium, University of Pittsburgh, (Nov. 10, 2023)
Associations of Brain Morphology with Individual Differences in Emotional Processing and Experience related to Internalizing Psychopathology in Youth.

Chaucer Club, University of Cambridge, UK (April 27, 2023)
Neural mechanisms and individual differences in the removal of information from working memory

30th Annual Meeting of the Cognitive Neuroscience Society (March 26, 2023) Symposium Organizer and Presenter
"Stop Thinking about It!": Cognitive and Neural Mechanisms of the Removal and Inhibition of Information in Memory.

Presentation to the Advisory Board of the Social, Behavioral, and Economic Sciences Directorate, National Science Foundation, Washington, D.C. (December 17, 2022)
Functional Neuroimaging: Opportunities and Challenges

Beckman Institute; University of Illinois at Urbana-Champaign, (April 4, 2022)
Neural bases of mental control: Insights from neuroimaging and beyond

Ohio State University, Center for Cognitive and Behavioral Brain Imaging (December 9, 2021)
"Stop thinking about it"! Neural and Cognitive Mechanisms for Actively Removing Information from Working Memory

Society for Research in Psychopathology, Invited Address (September 25, 2021)
Cognitive Control over Internal Thought and its Relevance to Psychopathology

Northwestern University, Department of Psychology (April 9, 2021)
"Stop thinking about it"! Neural and Cognitive Mechanisms for Actively Removing Information from Working Memory

International Neuropsychological Symposium, Vietri sul Mare, Italy (June 29, 2019)
Inhibitory Control over Information in Working Memory

University of Texas Dallas, Dean's Colloquium Series, School of Behavioral & Brain Sciences (March 8th, 2019)
Clearing the Contents of Working Memory

CU Boulder, Presentation to Alumni Board of Advisors, (July 19, 2018)
The Teen Brain

CU Director's Club Summer Conference, Vail Colorado (June 15, 2018)
The Teen Brain: What every Parent (and Teenager) Needs to Know

Denver University, Dept. of Psychology (April 20, 2018)

The Development of Executive Abilities: Perspectives from behavioral & neuroimaging studies

Sylvius Lecture, University of Leiden, Leiden, Netherlands (March 26, 2018)

Individual differences in Anatomical and Functional Aspects of Brain Connectivity that Influence Components of Executive Function

Dresden Technical University, Dresden Germany; Dresden Spring School (March 20, 2018)

The Development of Executive Abilities: Perspectives from Behavior and Neuroimaging

University of Texas Austin, Dept. of Psychology (March 2, 2018)

Individual Differences in Anatomical and Functional Aspects of Brain Connectivity that Influence Components of Executive Function

Texas A&M, Department of Psychology (March 1, 2018)

Inhibitory Control as a Critical Component of Executive Function? Conceptual Formulations and Neurobiological Mechanisms

CU Next, Los Angeles, California (Feb 24, 2018)

Understanding the Teen Brain

G. Stanley Hall Keynote Lecture, New England Psychological Association, William James College, Newton, MA (Oct. 21, 2017)

Brain and Mind: Core Concepts and Emerging Ideas in Cognitive Neuroscience

University of Verona, Verona, Italy, Department of Neuroscience, Biomedicine and Movement (October 5, 2017)

Cognitive Control over Perceptual and Working Memory Representations of Visual Information

University of Padova, Padova Italy, Master Course in Cognitive Neuroscience and Clinical Neuropsychology, Neuroscience Center (October 3, 2017)

Individual Differences in the Neural Substrates that Support Factors underlying Executive Function

University of Padova, Padova, Italy, Master Course in Cognitive Neuroscience and Clinical Neuropsychology, Department of General Psychology (October 2, 2017)

The Development of Executive Abilities: Perspectives from Behavior and Neuroimaging

International Conference "Cognitive Neuroscience of Executive Function" University of Padova , Padova Italy (Sept. 29, 2017)

Inhibitory Control as a Critical Component of Executive Function? Conceptual Formulations and Neurobiological Mechanisms

Starkey Duncan Memorial Distinguished Alumni Lecture, University of Chicago, Department of Psychology, (Oct. 6, 2016)

Talking to each Other: How Connectivity between Brain Regions influences Processing Capacity and Cognitive Control

Distinguished Speaker, Tufts University Annual Psychology/Biology Lecture (Feb. 22, 2013)

Neural Systems involved in Executive Function and Cognitive Control: Translational Research