

BIOGRAPHICAL SKETCH

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NAME Marie T. Banich	POSITION TITLE Professor, Dept. of Psychology & Neuroscience		
eRA COMMONS USER NAME Banich.Marie	Professor, Dept. of Psychiatry Director, Institute of Cognitive Science		
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as</i>			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Tufts University, Medford, MA.	B.A.	12/77	Psychology & Biology
Univ. of Chicago, Chicago, IL	Ph.D.	6/85	Behavioral Sciences

A. Positions and Honors

Professional Experience

- 1985-2000 Full/Associate/Assistant Professor, Department of Psychology, University of Illinois at Urbana-Champaign
- 1994 -2000 Co-Chair, Biological Intelligence Major Research Theme, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign
- 2000-present Full Professor, Department of Psychology, University of Colorado at Boulder; Department of Psychiatry, University of Colorado Health Sciences Center
- 2004- 2016 Director, Institute of Cognitive Science, University of Colorado at Boulder
- 2010- present Executive Director, Intermountain Neuroimaging Center, University of Colorado at Boulder
- 2010- 2014 President, International Society for Behavioural Neuroscience

Honors and Awards

- 1985 NIH Postdoctoral Fellowship (declined);
- 1989 Beckman Fellow, Center for Advanced Study, University of Illinois;
- 1991 Psi Chi Undergraduate Teaching Award, Univ. of Ill.
- 1994 Arnold O. Beckman Research Award, Univ. of Ill.
- 1996 University Scholar, Univ. of Ill.;
- 2002-2006: Member, MacArthur Foundation Network on Adolescent Development and Juvenile Justice
- 2005 Justine & Yves Sergent Prize (to a leading female researcher in Cognitive Neuroscience)
- 2005-2006: Emerging Leaders Program, University of Colorado
- 2007 (Feb – May): Fulbright Senior Scholar, (University of Verona, Italy)
- 2009 Fellow, Association for Psychological Science (for outstanding achievement in Psychological Science)
- 2013-2014 James McKeen Cattell Sabbatical Award

B. Publications (> 160, H-index > 50) *represents a student or post-doc for whom I was the primary or co-primary supervisor

Original Research & Reviews (last 10 years)

Reineberg, A. E., Gustavson, D. E., Benca, C., **Banich, M. T.**, & Friedman, N. P. (2018). The Relationship Between Resting State Network Connectivity and Individual Differences in Executive Functions. *Frontiers in Psychology*, 9, doi:[10.3389/fpsyg.2018.01600](https://doi.org/10.3389/fpsyg.2018.01600)

*Smith, L. L., **Banich, M. T.**, & Friedman, N. P. (2018). Individual differences in mixing costs relate to general executive functioning. *J Exp Psychol Learn Mem Cogn.* doi:[10.1037/xlm0000613](https://doi.org/10.1037/xlm0000613)

Luciana, M., Bjork, J. M., Nagel, B. J., Barch, D. M., Gonzalez, R., Nixon, S. J., & **Banich, M. T.** (2018). Adolescent neurocognitive development and impacts of substance use: Overview of the adolescent brain cognitive development (ABCD) baseline neurocognition battery. *Developmental Cognitive Neuroscience*, 32, 67-79. doi:[10.1016/j.dcn.2018.02.006](https://doi.org/10.1016/j.dcn.2018.02.006)

- *Smolker, H. R., Friedman, N. P., Hewitt, J. K., & **Banich, M. T.** (2018). Neuroanatomical Correlates of the Unity and Diversity Model of Executive Function in Young Adults. *Frontiers in Human Neuroscience*, *12*, doi:[10.3389/fnhum.2018.00283](https://doi.org/10.3389/fnhum.2018.00283)
- Vargas, T., Snyder, H., **Banich, M.**, Newberry, R., Shankrnan, S. A., Strauss, G. P., & Mittal, V. A. (2018). Altered selection during language processing in individuals at high risk for psychosis. *Schizophrenia Research*, *202*, 303-309. doi:[10.1016/j.schres.2018.06.036](https://doi.org/10.1016/j.schres.2018.06.036)
- *Mackiewicz Seghete, K. L., DePrince, A. P., & **Banich, M. T.** (2018). Association Between Initial Age of Exposure to Childhood Abuse and Cognitive Control: Preliminary Evidence. *Journal of Traumatic Stress*, *31*(3), 437-447. doi:[10.1002/jts.22290](https://doi.org/10.1002/jts.22290)
- Casey, B. J., Cannonier, T., Conley, M. I., Cohen, A. O., Barch, D. M., Heitzeg, M. M., .. **Banich, M.T.** .. Dale, A. M. (2018). The Adolescent Brain Cognitive Development (ABCD) study: Imaging acquisition across 21 sites. *Developmental Cognitive Neuroscience*, *32*, 43-54. doi:[10.1016/j.dcn.2018.03.001](https://doi.org/10.1016/j.dcn.2018.03.001)
- Banich, M. T.** (2018). Emerging themes in cognitive control: Commentary on the special issue of Psychophysiology entitled "Dynamics of Cognitive Control: A View Across Methodologies". *Psychophysiology*, *55*(3), e13060. doi:[10.1111/psyp.13060](https://doi.org/10.1111/psyp.13060)
- Gould, J. R., *Reineberg, A. E., Cleland, B. T., Knoblauch, K. E., Clinton, G. K., **Banich, M. T.**, . . . Enoka, R. M. (2018). Adjustments in Torque Steadiness During Fatiguing Contractions Are Inversely Correlated With IQ in Persons With Multiple Sclerosis. *Frontiers in Physiology*, *9*, doi:[10.3389/fphys.2018.01404](https://doi.org/10.3389/fphys.2018.01404)
- Iacono, W. G., Heath, A. C., Hewitt, J. K., Neale, M. C., **Banich, M. T.**, Luciana, M. M., . . . Bjork, J. M. (2018). The utility of twins in developmental cognitive neuroscience research: How twins strengthen the ABCD research design. *Developmental Cognitive Neuroscience* *32*, 30-42. doi:[10.1016/j.dcn.2017.09.001](https://doi.org/10.1016/j.dcn.2017.09.001)
- *de la Vega, A., Yarkoni, T., Wager, T. D., & **Banich, M. T.** (2018). Large-scale Meta-analysis Suggests Low Regional Modularity in Lateral Frontal Cortex. *Cerebral Cortex*, *28*(10), 3414-3428. doi:[10.1093/cercor/bhx204](https://doi.org/10.1093/cercor/bhx204)
- Yamamoto, D.J., **Banich, M.T.**, Regner, M.F., Sakai, J.T. & Tanabe, J. (2017). Behavioral approach and orbitofrontal cortical activity during decision-making in substance dependence. *Drug and Alcohol Dependence*, *180*, 234-240. doi: 10.1016/j.drugalcdep.2017.08.024
- *Mackiewicz Seghete, K.L., *Kaiser, R.H., DePrince A.P. & **Banich, M.T.** (2017). General and emotion-specific alterations to cognitive control in women with a history of childhood abuse. *Neuroimage: Clinical*, *16*, 151-164. doi: 10.1016/j.nicl.2017.06.030
- Fogleman, N.D., Naaz, F., Knight, L.K., Stoica, T., Patton, S.C., Olson-Madden, J.H., Barnhart, M.C., Hostetter, T.A., Forster, J., Brenner, L.A., **Banich, M.T.**, *Depue, B.E. (2017). Reduced lateral prefrontal cortical volume is associated with performance on the modified Iowa Gambling Task: A surface based morphometric analysis of previously deployed veterans. *Psychiatry Research*, *267*, 1-8. doi: 10.1016/j.psychresns.2017.06.014
- Crowley, T.J., Dalwani, M.S., Sakai, J.T., Raymond, K.M., McWilliams, S.K., **Banich, M.T.**, Mikulich-Gilbertson, S.K. (2017). Children's brain activation during risky decision-making: A contributor to substance problems? *Drug and Alcohol Dependence*, *178*, 57-65. doi: 10.1016/j.drugalcdep.2017.02.028
- Sakai, J.T., Dalwani, M.S., Mikulich-Gilbertson, S.K., Raymond, K., McWilliams, S., Tanabe, J., Rojas, D., Regner, M., **Banich, M.T.**, & Crowley T.J. (2017). Imaging decision about whether to benefit self by harming others: Adolescents with conduct and substance problems, with or without callous-unemotionality, or developing typically. *Psychiatry Research*, *263*, 103-112. doi: 10.1016/j.psychresns.2017.03.004
- *Godinez, D.A., McRae, K., Andrews-Hanna, J.R., *Smolker, H., & **Banich, M.T.** (2016). Differences in frontal and limbic brain activation in a small sample of monozygotic twin pairs discordant for severe stressful life events. *Neurobiology of Stress*, *28*, 26-36.
- *Orr, J.M., *Paschall, C.J., & **Banich, M.T.** (2016). Recreational marijuana use impacts white matter integrity and subcortical (but not cortical) morphometry. *Neuroimage: Clinical*, *12*, 47-56.
- Burdwood, E.N., Infantolino, Z.P., Crocker, L.D. Spielberg, J.M., **Banich, M.T.**, Miller, G.A., & Heller, W. (2016). Resting-state functional connectivity differentiates anxious apprehension and anxious arousal. *Psychophysiology*, *53*, 1451-1459. doi: 10.1111/psyp.12696
- *de la Vega, A., Chang, L.J., **Banich, M.T.**, Wager, T.D., & Yarkoni, T. (2016). Large-Scale Meta-Analysis of Human Medial Frontal Cortex Reveals Tripartite Functional Organization. *Journal of Neuroscience*, *36*, 6553-6562. doi: 10.1523/JNEUROSCI.4402-15.2016.

- *Reineberg, A.E., & **Banich, M.T.** (2016). Functional connectivity at rest is sensitive to individual differences in executive function: A network analysis. *Human Brain Mapping, 37*, 2959-75. doi: 10.1002/hbm.23219.
- Boulos, P.K., Dalwani, M.S., Tanabe, J., Mikulich-Gilbertson, S.K., **Banich, M.T.**, Crowley, T.J., Sakai, J.T. (2016). Brain Cortical Thickness Differences in Adolescent Females with Substance Use Disorders. *PLoS One, 11*(4):e0152983. doi: 10.1371/journal.pone.0152983.
- Panta, S.R., Wang, R., Fries, J., Kalyanam, R., Speer, N., **Banich, M.**, Kiehl, K., King, M., Milham, M., Wager, T.D., Turner, J.A., Plis, S.M., Calhoun, V.D. (2016). A Tool for Interactive Data Visualization: Application to Over 10,000 Brain Imaging and Phantom MRI Data Sets. *Frontiers in Neuroinformatics, 2016 Mar 15;10:9*. doi: 10.3389/fninf.2016.00009.
- Banich, M.T.** (2016). The future of CABN--A conceptual triad: Psychological theory, neurobiological approaches, computational methods. *Cognitive Affective and Behavioral Neuroscience, 16*, 1-2. doi: 10.3758/s13415-016-0401-z.
- *Depue, B. E., *Orr, J. M., *Smolker, H. R., Naaz, F., & **Banich, M. T.** (2016). The Organization of Right Prefrontal Networks Reveals Common Mechanisms of Inhibitory Regulation Across Cognitive, Emotional, and Motor Processes. *Cerebral Cortex, 26*, 1634-1646.
- Chumachenko, S.Y., Sakai, J.T., Dalwani, M.S., Mikulich-Gilbertson, S.K., Dunn, R., Tanabe, J., Young, S., McWilliams, S.K., **Banich, M.T.**, & Crowley, T.J. (2015). Brain cortical thickness in male adolescents with serious substance use and conduct problems. *American Journal of Drug and Alcohol Abuse, 41*, 414-424. doi: 10.3109/00952990.2015.1058389.
- Senholzi, K.B., *Depue, B.E., Correll, J., **Banich, M.T.**, & Ito, T.A. (2015) Brain activation underlying threat detection to targets of different races. *Social Neuroscience, 10*, 651-662.
- *Godinez, D. A., Willcutt, E.G., *Burgess, G.C., *Depue, B.E., *Andrews-Hanna, J.R., & **Banich, M.T.** (2015). Familial risk and ADHD-specific neural activity revealed by case-control, discordant twin design. *Psychiatry Research: Neuroimaging, 223*, 458-465.
- Spielberg, J. M., Miller, G. A., Heller, W., & **Banich, M. T.** (2015). Flexible brain network reconfiguration supporting inhibitory control. *Proceedings of the National Academy of Sciences of the United States of America*. doi:10.1073/pnas.1500048112
- Krmpotich, T., Mikulich-Gilbertson, S., Sakai, J., Thompson, L., **Banich, M. T.**, & Tanabe, J. (2015). Impaired Decision-Making, Higher Impulsivity, and Drug Severity in Substance Dependence and Pathological Gambling. *Journal of Addiction Medicine*. doi:10.1097/ADM.0000000000000129
- Banich, M. T.**, *Mackiewicz Seghete, K. L., *Depue, B. E., & *Burgess, G. C. (2015). Multiple modes of clearing one's mind of current thoughts: overlapping and distinct neural systems. *Neuropsychologia, 69*, 105-117. doi:10.1016/j.neuropsychologia.2015.01.039
- Banich, M. T.**, & *Depue, B. E. (2015). Recent advances in understanding neural systems that support inhibitory control. *Current Opinion in Behavioral Sciences, 1*, 17-22. doi:10.1016/j.cobeha.2014.07.006
- Crowley, T. J., Dalwani, M. S., Mikulich-Gilbertson, S. K., Young, S. E., Sakai, J. T., Raymond, K. M., McWilliams, S.K., Roark, M.J., & **Banich, M.T.** (2015). Adolescents' Neural Processing of Risky Decisions: Effects of Sex and Behavioral Disinhibition. *PLoS ONE, 10*(7), e0132322. doi:10.1371/journal.pone.0132322
- Dalwani, M. S., McMahon, M. A., Mikulich-Gilbertson, S. K., Young, S. E., Regner, M. F., Raymond, K. M., McWilliams, S.K., **Banich, M.T.**, Tanabe, J.L., Crowley, T.J., & Sakai, J.T. (2015). Female adolescents with severe substance and conduct problems have substantially less brain gray matter volume. *PLoS ONE, 10*(5), e0126368. doi:10.1371/journal.pone.0126368
- *Orr, J. M., *Smolker, H. R., & **Banich, M. T.** (2015). Organization of the Human Frontal Pole Revealed by Large-Scale DTI-Based Connectivity: Implications for Control of Behavior. *PLoS ONE, 10*(5), e0124797. doi:10.1371/journal.pone.0124797
- *Smolker, H. R., *Depue, B. E., *Reineberg, A. E., *Orr, J. M., & **Banich, M. T.** (2015). Individual differences in regional prefrontal gray matter morphometry and fractional anisotropy are associated with different constructs of executive function. *Brain Structure & Function, 220*(3), 1291-1306. doi:10.1007/s00429-014-0723-y
- *Kaiser, R. H., *Andrews-Hanna, J. R., Spielberg, J. M., Warren, S. L., Sutton, B. P., Miller, G. A., Heller, W., & **Banich, M.T.** (2015). Distracted and down: neural mechanisms of affective interference in subclinical depression. *Social Cognitive and Affective Neuroscience, 10*(5), 654-663. doi:10.1093/scan/nsu100
- *Reineberg, A.E., *Andrews-Hanna, J.R., *Depue, B.E., Friedman, N.P., & **Banich MT.** (2015). Resting-state networks predict individual differences in common and specific aspects of executive function.

- Neuroimage*, 104, 69-78. doi: 10.1016/j.neuroimage.2014.09.045. PMID: PMC4262251
- Woo, C.-W., Koban, L., Kross, E., Lindquist, M. A., **Banich, M. T.**, Ruzic, L., *Andrews-Hanna, J.R., & Wager, T.D. (2014). Separate neural representations for physical pain and social rejection. *Nature Communications*, 5, 5380. doi:10.1038/ncomms6380
- Banich, M.T.** & Munakata, Y. (2014). Modes of executive function and their coordination: introduction to the special section. *Neuropsychologia*, 62, 319-320.
- Spielberg, J.M., Miller, G.A., Warren, S.L., Sutton, B.P., **Banich, M.**, & Heller, W. (2014). Transdiagnostic dimensions of anxiety and depression moderate motivation-related brain networks during goal maintenance. *Depression & Anxiety*, 31, 805-813.
- *de la Vega, A., Brown, M.S., *Snyder, H.R., Singel, D., Munakata, Y., & **Banich, M.T.** (2014). Individual differences in the balance of GABA to glutamate in pFC predict the ability to select among competing options. *Journal of Cognitive Neuroscience*, 26, 2490-2502.
- *Snyder, H.R., **Banich, M.T.**, & Munakata Y. (2014). All competition is not alike: neural mechanisms for resolving underdetermined and prepotent competition. *Journal of Cognitive Neuroscience*, 26, 2608-2623.
- *Smolker, H.R., *Depue, B.E., *Reineberg, A.E., *Orr, J.M., & **Banich, M.T.** (in press). Individual differences in regional prefrontal grey matter morphometry and fractional anisotropy are associated with different constructs of executive function. *Brain Structure and Function*
- *Depue, B.E., Olson-Madden, J., Smolker, H.R., Rajamani, M., Brenner, L.A., & **Banich, M.T.** (2014) Reduced amygdala volume is associated with deficits in inhibitory control: A voxel and surface-based morphometric analysis of comorbid PTSD/mTBI. *Biomed Research International*, 2014:691505. doi: 10.1155/2014/691505.
- Yamamoto, D.J., Reynolds, J., Krmpotich, T., **Banich, M.T.**, Thompson, L. & Tanabe, J. (2014) Temporal profile of fronto-striatal-limbic activity during implicit decisions in drug dependence. *Drug and Alcohol Dependence*, 136, 108-114.
- Dalwani, M.S., Tregellas, J.R., *Andrews-Hanna, J.R., Mikulich-Gilbertson, S.K., Raymond, K.M., **Banich, M.T.**, Crowley, T.J., & Sakai, J.T. (2014). Default mode network activity in male adolescents with conduct and substance use disorder. *Drug and Alcohol Dependence*, 134, 242-250.
- *Orr, J.M., & **Banich, M.T.** (2014). The neural mechanisms underlying internally and externally guided task selection. *Neuroimage*, 84, 191-205.
- *Andrews-Hanna, J.R., *Kaiser, R.H., Turner, A.E.J., *Reineberg, A.E., *Godinez, D., Dimidjian, S. & **Banich, M.T.** (2013). A penny for your thoughts: dimensions of self-generated thought content and relationships with individual differences in emotional wellbeing. *Frontiers in Psychology: Perception Science*, doi: 10.3389/fpsyg.2013.00900
- *Depue, B.E., Ketz, N., Mollison, M.V., Nyhus, E., **Banich, M.T.**, & Curran, T. (2013). ERPs and neural oscillations during volitional suppression of memory retrieval. *Journal of Cognitive Neuroscience*, 25, 1624-1633.
- Tanabe, J., Reynolds, J., Krmpotich, T., Claus, E., Thompson, L.L., Du, Y.P., & **Banich, M.T.** (2013) Reduced neural tracking of prediction error in substance dependent individuals. *American Journal of Psychiatry*, 170, 1356-1363.
- Tanabe, J., York, P., Krmpotich, T., Miller, D., Dalwani, M., Sakai, J.T., Mikulich-Gilbertson, S.K., Thompson, L., Claus, E., **Banich, M.**, & Rojas, D.C. (2013) Insula and orbitofrontal cortical morphology in substance dependence is modulated by sex. *American Journal of Neuroradiology*, 34, 1150-1156.
- Perry, R.I., Krmpotich, T., Thompson, L.L., Mikulich-Gilbertson, S.K., **Banich, M.T.**, & Tanabe J. (2013). Sex modulates approach systems and impulsivity in substance dependence. *Drug and Alcohol Dependence*, 133, 222-227.
- Warren, S.L., Crocker, L.D., Spielberg, J.M., Engels, A.S., **Banich, M.T.**, Sutton, B.P., Miller, G.A., & Heller, W. (2013). Cortical organization of inhibition-related functions and modulation by psychopathology. *Frontiers in Human Neuroscience*, 2013 Jun 13;7:271. doi: 10.3389/fnhum.2013.00271.
- *Stollstorff, M., Munakata, Y., Jensen, A.P., Guild, R.M., *Smolker, H.R., Devaney, J.M., & **Banich, M.T.** (2013). Individual differences in emotion-cognition interactions: emotional valence interacts with serotonin transporter genotype to influence brain systems involved in emotional reactivity and cognitive control. *Frontiers in Human Neuroscience*, Jul 4;7:327. doi 10.3389/fnhum.2013.00327.
- Banich, M.T.**, *De La Vega, A., *Andrews-Hanna, J.R., * Mackiewicz-Seghete, K., Du, Y., and Claus, E.D. (2013). Developmental trends and individual differences in brain systems involved in intertemporal

- choice during adolescence. *Psychology of Addictive Behaviors*, 27, 416-430.
- Krmpotich, T.D., Tregellas, J.R., Thompson, L.L., **Banich, M.T.**, Klenk, A.M., Tanabe, J.L. (2013). Resting-state activity in the left executive control network is associated with behavioral approach and is increased in substance dependence. *Drug and Alcohol Dependence*, 129, 1-7.
- Dal Molin, A., Marzi, C.A., **Banich, M.T.**, & Girelli, M. (2013). Interhemispheric transfer of spatial and semantic information: Electrophysiological evidence. *Psychophysiology*, 50, 377-387.
- *Whitmer, A., & **Banich, M.T.** (2012) Brain activity related to task set inhibition: an fMRI study. *Cognitive, Affective and Behavioral Neuroscience*, 12, 661-670.
- Warren, S.L., Crocker, L.D., Spielberg, J.M., Engels, A.S., **Banich, M.T.**, Sutton, B.P., Miller, G.A., Heller, W. (2013). Cortical organization of inhibition-related functions and modulation by psychopathology. *Frontiers in Human Neuroscience*, 7, 271. doi: 10.3389/fnhum.2013.00271.
- Crocker, L.D., Heller, W., Spielberg, J.M., Warren, S.L., Bredemeier, K., Sutton, B.P., **Banich, M.T.**, & Miller, G.A. (2012) Neural mechanisms in attentional control differentiate trait and state negative affect. *Frontiers in Emotion Science*, 3, 298.
- Spielberg J.M., Miller, G.A., Warren, S.L., Engels, A.S., Crocker, L.D., **Banich, M.T.**, Sutton, B.P., Heller W. (2012) A brain network instantiating approach and avoidance motivation. *Psychophysiology*, 49, 1200-1214.
- *Henderson, R.K., *Snyder, H.R., Gupta, T., & **Banich, M.T.** (2012) When does stress help or harm? The effects of stress controllability and subjective stress response on Stroop performance. *Frontiers in Psychology*, 3:179, doi: 10.3389/fpsyg.2012.00179.
- *Whitmer, A.J., & Banich, M.T. (2012) Repetitive thought and reversal learning deficits. *Cognitive Therapy and Research*, 36, 714-721.
- Chatham, C.H., Claus, E.D., Kim, A., Curran, T., **Banich, M.T.**, & Munakata, Y. (2012). Cognitive control reflects context monitoring, not motoric stopping, in response inhibition. *PLoS One*, 7(2):e31546. Epub 2012 Feb 27.
- Thompson, L.L., Claus, E.D., Mikulich-Gilbertson, S.K., **Banich, M.T.**, Crowley, T., Krmpotich, T., Miller, D., & Tanabe, J. (2011). Negative reinforcement learning is affected in substance dependence. *Drug and Alcohol Dependence*, 123, 84-90.
- Munakata, Y., Herd, S.A., Chatham, C.H., *Depue, B.E., **Banich, M.T.** & O'Reilly, R.C. (2011). A unified framework for inhibitory control. *Trends in Cognitive Science*, 15, 453-459.
- *Depue B.E., & **Banich, M.T.** (2011). Increased inhibition and enhancement of memory retrieval are associated with reduced hippocampal volume. *Hippocampus*, 22, 651-655.
- *Snyder, H.R., **Banich, M.T.**, & Munakata, Y. (2011) Choosing Our Words: Retrieval and Selection Processes Recruit Shared Neural Substrates in Left Ventrolateral Prefrontal Cortex. *Journal of Cognitive Neuroscience*, 23, 3470-3482.
- *Andrews-Hanna J.R., *Mackiewicz Seghete K.L., *Claus, E.D., *Burgess, G.C., *Ruzic, L., & **Banich, M.T.** (2011). Cognitive control in adolescence: neural underpinnings and relation to self-report behaviors. *PLoS One*, 6(6):e21598
- Dalwani, M., Sakai, J.T., Mikulich-Gilbertson, S.K., Tanabe, J., Raymond, K., McWilliams, S.K., Thompson, L.L., **Banich, M.T.**, & Crowley, T.J. (2011). Reduced cortical gray matter volume in male adolescents with substance and conduct problems. *Drug and Alcohol Dependence*, 118, 295-305.
- Silton, R.L., Heller, W., Engels, A.S., Towers, D.N., Spielberg, J.M., Edgar, J.C., Sass, S.M., Stewart, J.L., Sutton, B.P., **Banich, M.T.**, & Miller, G.A. (2011). Depression and anxious apprehension distinguish frontocingulate cortical activity during top-down attentional control. *Journal of Abnormal Psychology*, 120, 272-85.
- Spielberg, J.M., Miller, G.A., Engels, A.S., Herrington, J.D., Sutton, B.P., **Banich, M.T.**, & Heller, W. (2011). Trait approach and avoidance motivation: Lateralized neural activity associated with executive function. *Neuroimage*, 54, 661-670.
- Gee, D.G., Biswal, B.B., Kelly, C., Stark, D.E., Margulies, D.S., Shehzad, Z., Uddin, L.Q., Klein, D.F., **Banich, M.T.**, Castellanos, F.X., & Milham, M.P. (2011). Low frequency fluctuations reveal integrated and segregated processing among the cerebral hemispheres. *Neuroimage*, 54, 517-527.
- *Depue, B.E., *Burgess, G.C., Willcutt, E.G., *Ruzic, L., & **Banich, M.T.** (2010). Inhibitory control of memory retrieval and motor processing associated with the right lateral prefrontal cortex: Evidence from deficits in individuals with ADHD. *Neuropsychologia*, 48, 3909-3917.
- Crowley, T.J., Dalwani, M.S., Mikulich-Gilbertson, S.K., Du, Y.P., Lejuez, C.W., Raymond, K.M. & **Banich,**

- M.T.** (2010). Risky decisions and their consequences: Neural processing by boys with antisocial substance disorder. *PLoS ONE* 5(9): e12835. doi:10.1371/journal.pone.0012835
- *Snyder, H.R., Hutchison, N., Nyhus, E., Curran, T., **Banich, M.T.**, O'Reilly, R.C., & Munakata, Y. (2010). Neural inhibition enables selection during language processing. *Proceeding of the National Academy of Sciences USA*, 107, 16483-16488.
- *Whitmer, A.J., & Banich, M.T. (2010) Trait rumination and inhibitory deficits in long-term memory, *Cognition & Emotion*, 24, 168-179.
- *Depue, B.E., *Burgess, G.C., Bidwell, L.C., Willcutt, E.G., & **Banich, M.T.** (2010). Behavioral performance predicts grey matter reductions in the right inferior frontal gyrus in young adults with combined type ADHD. *Psychiatry Research: Neuroimaging*, 182, 231-237.
- *Depue, B.E., *Burgess, G.C., Willcutt, E.G., Bidwell, L.C., *Ruzic, L. & **Banich, M.T.** (2010). Symptom-correlated brain regions in young adults with combined type ADHD: Their organization, variability, and relation to behavioral performance. *Psychiatry Research: Neuroimaging*, 182, 86-102.
- Banich, M.T.** (2010). Brain imaging of the neural systems affected in adults with attention-deficit/hyperactivity disorder. *Expert Reviews in Neurotherapeutics*, 10, 1523-1527.
- *Burgess, G.C., *Depue, B.E., *Ruzic, L., Willcutt, E.G., Du, Y.P. & **Banich, M.T.** (2010). Attentional Control Activation Relates to Working Memory in Attention-Deficit/Hyperactivity Disorder. *Biological Psychiatry*, 67, 632-640.
- Herrington, J.D., Heller, W., Mohanty, A., Engels, A.S., **Banich, M.T.**, Webb, A.G. & Miller, G.A. (2010) Localization of asymmetric brain function in emotion and depression. *Psychophysiology*, 47, 442-454.
- Silton, R.L., Heller, W., Towers, D.N., Engels, A.S., Spielberg, J.M., Edgar, J.C., Sass, S.M., Stewart, J.L., Sutton, B.P., **Banich, M.T.**, & Miller, G.A. (2010). The time course of activity in dorsolateral prefrontal cortex and anterior cingulate cortex during top-down attentional control. *Neuroimage*, 50, 1292-1302.
- Engels, A., Heller, W., Spielberg, J.M., Warren, S.L., Sutton, B.P., **Banich, M.T.**, Miller, G.A. (2010). Co-occurring anxiety influences patterns of brain activity in depression. *Cognitive, Affective, and Behavioral Neuroscience*, 10, 141-156.
- Cauffman, E., Shulman, E., *Claus, E., **Banich, M.**, Graham, S., Woolard, J. & Steinberg, L. (2010). Age differences in affective decision making. *Developmental Psychology*, 46, 193-207
- *Whitmer, A. J. & **Banich, M.T.** (2010). Trait rumination and inhibitory deficits in long-term memory. *Cognition & Emotion*, 24, 168-179.
- Steinberg, L., Cauffman, E., Woolard, J., Graham, S., & **Banich, M.T.** (2009). Are adolescents less mature than adults? Minor's access to abortion, the juvenile death penalty, and the alleged APA "Flip-Flop". *American Psychologist*, 64, 583-594.
- Steinberg, L., Cauffman, E., Woolard, J., Graham, S. & **Banich, M.T.** (2009). Reconciling the Complexity of Human Development With the Reality of Legal Policy: Reply to Fischer, Stein, and Heikkinen, *American Psychologist*, 64, 601-604.
- Banich, M.T.**, *Burgess, G.C., *Depue, B.E., *Ruzic, L., Bidwell, L.C., Hitt-Laustsen, S., Du, Y.P., & Willcutt, E.G. (2009). The neural basis of sustained and transient attentional control in young adults with ADHD. *Neuropsychologia*, 47, 3095-3014.
- Banich, M.T.** (2009). Executive Function: The search for an integrated account. *Current Directions in Psychological Science*, 18, 89-94.
- Banich, M.T.**, *Mackiewicz, K.L., *Depue B.E., *Whitmer, A., Miller, G.A., & Heller, W. (2009). Cognitive Control Mechanisms, Emotion, and Memory: A neural perspective with implications for psychopathology. *Neuroscience and Biobehavioral Reviews*, 33, 613-630.
- Steinberg, L., Graham, S., O'Brien, L., Woolard, J., Cauffman, E. & **Banich, M.** (2009). Age differences in future orientation and delay discounting. *Child Development*, 80, 28-44.
- *Scalf, P.E., **Banich, M.T.**, & Erickson, A.B. (2009). Interhemispheric interaction expands attentional capacity in an auditory selective attention task. *Experimental Brain Research*, 194, 317-322.
- *Hutchinson, A.D., Mathias, J.L., *Jacobson, B.L., *Ruzic, L., *Bond, A.N. & **Banich, M.T.** (2009). Relationship between intelligence and the size and composition of the corpus callosum. *Experimental Brain Research*, 192, 455-464.
- Tanabe, J., Tregellas, J.R., Thompson, L., Dalwani, M., Owens, E., Crowley, T., & **Banich, M.T.** (2009). Medial orbitofrontal cortex gray matter is reduced in abstinent substance dependent individuals. *Biological Psychiatry*, 65, 160-164.

- Stark, D.E., Margulies, D.S., Shehzad, Z.E., Reiss, P., Kelly, A.M., Uddin, L.Q., Gee, D.G., Roy, A.K., **Banich, M.T.**, Castellanos, F.X., & Milham, M.P. (2008). Regional variation in interhemispheric coordination of intrinsic hemodynamic fluctuations. *Journal of Neuroscience*, *28*, 13754-13764.
- Steinberg, L., Albert, D., Cauffman, E., **Banich, M.**, Graham, S., Woolard, J. (2008). Age differences in sensation seeking and impulsivity as indexed by behavior and self-report: Evidence for a dual systems model. *Developmental Psychology*, *44*, 1764-1778.
- *Hutchinson, A.D., Mathias J.L. & **Banich, M.T.** (2008). Corpus callosum morphology in children and adolescents with Attention Deficit Hyperactivity Disorder: a meta-analytic review. *Neuropsychology*, *22*, 341-349.
- Filbey, F.M., *Claus, E., Audette, A.R., Niculescu, M., **Banich, M.T.**, Tanabe, J, Du, Y.P., & Hutchinson, K.E. (2008). Exposure to the taste of alcohol elicits activation of the mesocorticolimbic neurocircuitry. *Neuropsychopharmacology*, *33*, 1391-1401.
- Banich, M.T.**, Crowley, T.J., Thompson, L.L., *Jacobson, B.L., *Liu, X., Raymond, K.M., & *Claus, E.D. (2007). Brain activation during the Stroop task in adolescents with severe substance and conduct problems: A pilot study. *Drug and Alcohol Dependence*, *90*, 175-182.
- *Depue, B. Curran, T. & **Banich, M.T.** (2007). Prefrontal regions orchestrate suppression of emotional memories via a two-phase process. *Science*, *317*, 215-219.
- *Whitmer, A. & **Banich, M.T.** (2007). Inhibition versus switching deficits in different forms of rumination. *Psychological Science*, *18*, 546-553.
- Yoshizaki, K., *Weissman, D.H., & **Banich, M.T.** (2007). A hemispheric division of labor aids mental rotation. *Neuropsychology*, *21*, 326-336.
- *Scalf, P.E., **Banich, M.T.**, Kramer, A.F., Narechania, K., & Simon, C.L. (2007). Double take: Parallel processing by the cerebral hemispheres reduces the attentional blink. *Journal of Experimental Psychology: Human Perception and Performance*, *33*, 298-329.
- Tanabe, J., Thompson, L., *Claus, E., Dalwani, M., Hutchison, K., & **Banich, M.T.** (2007). Prefrontal cortex activity is reduced in gambling and non-gambling substance users during decision making. *Human Brain Mapping*, *28*, 1276-1286.
- Engels, A.S., Heller, W., Mohanty, A., Herrington, J.D., **Banich, M.T.**, Webb, A.G., & Miller, G.A. (2007). Specificity of regional brain activity in anxiety types during emotion processing. *Psychophysiology*, *44*, 352-363.
- Mohanty, A., Engels, A.S., Herrington, J.D., Heller, W., Ringo Ho, M-H.R., **Banich, M.T.**, Webb, A.G., Warren, S.L., & Miller, G.A. (2007). Differential engagement of anterior cingulate cortex subdivisions for cognitive and emotional function. *Psychophysiology*, *44*, 343-351.
- Lopez, M. Kosson, D.S., *Weissman, D.H., & **Banich, M.T.** (2007). Interhemispheric integration in psychopathic offenders. *Neuropsychology*, *21*, 82-93.
- *Lui, X., **Banich, M.T.**, Jacobson, B.L., & Tanabe, J.L. (2006). Response and non-response related aspects of attentional selection as ascertained by fMRI. *Cerebral Cortex*, *16*, 827-834.
- *Depue, B. E. **Banich, M.T.**, & Curran, T. (2006) Suppression of emotional and non-emotional content in memory: Effects of repetition on cognitive control. *Psychological Science*, *17*, 441-447.
- Herd, S.A., **Banich, M.T.**, & O'Reilly, R.C. (2006). Neural mechanisms of cognitive control: An integrative model of Stroop task performance and fMRI data, *Journal of Cognitive Neuroscience*, *18*, 22-32.
- *Spencer, K.M. & **Banich, M.T.** (2005). Hemispheric biases and the control of visuospatial attention: an ERP study. *Biomedical Central Neuroscience*, *6*, 51.
- *Milham, M.P. & **Banich, M.T.** (2005). Anterior cingulate cortex: An fMRI analysis of conflict specificity & functional differentiation. *Human Brain Mapping*, *25*, 328-335.
- Mohanty, A. Herrington, J.D., Koven, N.S., Fisher, J.E., Wenzel, E.A., Webb, A.G., Heller, W., **Banich, M.T.**, & Miller, G.A. (2005) Neural mechanisms of affective interference in schizotypy. *Journal of Abnormal Psychology*, *114*, 16-27.
- Herrington, J.D., Mohanty, A., Koven, N.S., Fisher, J.E., Stewart, J.L., **Banich, M.T.**, Webb, A.G., Miller, G.A., & Heller, W. (2005) Emotion-modulated performance and activity in left dorsolateral prefrontal cortex. *Emotion*, *5*, 200-207.

Book Chapters

- Banich, M.T.** (2008). Hemispheric specialization and cognition. *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). Interaction between the hemispheres and its implications for the processing capacity of the brain. In *Brain Asymmetry*, Davidson, R. and Hugdahl, K. (Eds.), 2nd edition, 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.

Books

- Banich, M.T.** & Compton, R. (2018). *Cognitive Neuroscience, 4th edition*. Cambridge: Cambridge University Press..
- Banich, M.T.** & Compton, R. (2011). *Cognitive Neuroscience, 3rd edition*. Belmont, Ca: Wadsworth.
- Banich, M.T.** & Caccamise, D. (Eds.) (2010). *Generalization of Knowledge: Multidisciplinary Perspectives*. London: Psychology Press
- Banich, M.T.** (2004). *Cognitive Neuroscience and Neuropsychology, 2nd edition*. Boston: Houghton-Mifflin.
- Banich, M.T.** & Mack, M. (Eds.) (2003) *Mind, Brain, and Language: Multidisciplinary Perspectives*. Mahwah, N.J.: Lawrence Erlbaum, Associates.
- Banich, M.T.** (1997). *Neuropsychology: The neural bases of mental function*. Boston: Houghton-Mifflin.

C. Ongoing Research Support

RO1 MH063207-10A1 (Hewitt) 12/1/2013-11/30/2018

Neural Substrates of Executive Function: An fMRI Twin Study

This study examines the neural correlates of genetic individual differences in three executive functions (prepotent response inhibition, working memory updating, and set shifting). A sample of 600 twins in their mid-twenties will be scanned using functional magnetic resonance imaging while they perform three executive function tasks, and both structural and functional neural measures will be correlated with executive function performance assessed at two prior time periods, as well as longitudinally collected measures of psychopathology such as depression and attention problems.

Role: Co-Investigator

R37 AG013038-19 (Seals) 4/01/2014-03/31/2019

Nitrite Supplementation for Improving Physiological Function in Older Adults

This study will determine if daily oral supplementation with a compound that increases sodium nitrite in the body improves vascular, motor and cognitive function in older adults. Further this project seeks to provide insight into the biological reasons by which supplementation with sodium nitrite, improve physiological function in older adults.

Role: Co-Investigator

1R01MH105501 (Banich MPI) 6/01/2015-5/31/2020

Prefrontal Mechanisms of Selection: Disrupted in Internalizing Psychopathology?

The goal of this grant is to use a multi-level approach (neurotransmitters levels, regional brain activation, behavioral performance, symptom levels) to understand brain processes involved in cognitive control, how they develop during adolescence, and how they may be affected by depression or anxiety.

U01 DA041120A (Banich MPI) 9/30/2015-5/31/2020

ABCD-USA Consortium: Twin Research Project

The focus of this project is to use neuroimaging and behavioral examination of twin pairs as a way to understand how genetic and environmental factors influence the effects of drugs on the adolescent brain.

1R21MH108848-01A1 (Banich MPI) 06/20/2015-03/31/2019

Clearing the Contents of Working Memory: Mechanisms and Representations

The goal of this project is to apply machine learning techniques to understand the neural mechanisms by which information is cleared from working memory and the way in which representations of such information are altered by these clearing processes.

P50 HD027802 (Center P.I., Willcutt; Project PI., Banich) 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

The goal of this high-risk/high-reward project is to investigate, using a new and novel theoretical perspective, the neural underpinnings of learning disability. In this project we posit that each of the three major processes that may underlie learning disability as proposed by our center – slowed processing speed, domain specific deficits (separately in reading and in math), and executive dysfunction - can each be linked to specific underlying neural processes.