VITA February 2023

Name: **Walter Schneider**

Address: LRDC 3420 Forbes Avenue

Phone: (412) 901-4176 (cell)

EMAIL: wws@pitt.edu

Date: February 2023

Educational History: B.A., Psychology (with honors), University of Illinois, 1971

Ph.D., Psychology, Indiana University, 1975

Post-Doc., Neurophysiology, University of California, Berkeley, CA, 1975-77

Title of Thesis: Selective attention, memory scanning, and visual search:

Three components of one process. Supervisor: Richard M. Shiffrin

Professional History:

1971‑1975 Research Assistant, Indiana University

1975‑1977 Miller Research Fellow, Miller Institute for Basic

Research in Science, University of California, Berkeley

1977‑1983 Assistant Professor, University of Illinois

1983‑1985 Associate Professor, University of Illinois

1985‑1988 Associate Professor, Department of Psychology &

Senior Scientist, Learning Research and Development

Center, University of Pittsburgh

1988‑ Professor, Department of Psychology, University of Pittsburgh

1995-2004 Co-Director, Education Program, Center for the Neural Basis of Cognition (CNBC)

2002-2004 Program Chair, Cognitive Program, University of Pittsburgh

2005-present     Professor of Psychiatry, secondary appointment

2011-present Professor of Neurosurgery & Radiology secondary appointment

2015-present Professor of Bioengineering secondary appointment

Honors:

Phi Beta Kappa

Two Psychological Review papers have been awarded the status of "Science Citation

Classics" (Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977)

President of Society for Computers in Psychology, 1986

Member of National Academy of Science Study Panel, 1985‑1988

EDUCOM/NCRIPTAL Higher Education Software Award winner of Best Social and Behavioral

Sciences award for Micro Experimental Laboratory programming system, 1988

American Association for the Advancement of Science Fellow, 1995

Fellow of the American Psychological Society, 1997

Top download paper in Cognitive Science (Schneider & Chein, 2003)

Editors' Choice award Methods and Modeling for 2010 from NeuroImage (Cole, Pathak, & Schneider 2009)

Fellowships and Scholarships:

Beckman Fellow, Center for Advanced Study, University of Illinois, 1981‑1982

Miller Research Fellow, Miller Institute for Basic Research in Science, 1975‑1977

Mathematical Psychology NIMH Training Fellowship, Indiana University, Years

Illinois State Scholar, 1968-197

Publications:

Schneider, W. & Scholz, K. W. (1973). Requirements for minicomputer operating systems for human experimentation and an implementation on a 4KPDP‑8 computer. Behavioral Research Methods and Instrumentation, 5, 173‑177.

Shiffrin, R. M. & Schneider, W. (1974). An expectancy model for memory search. Memory and Cognition, 2(4), 616‑628.

Schneider, W. & Shiffrin, R. M. (1977). Automatic and controlled information processing in vision. In D. LaBerge & S. J. Samuels (Eds.), Basic processes in reading: Perception and comprehension (pp. 127‑154). Hillsdale, NJ: Erlbaum.

Schneider, W. & Shiffrin, R. M. (1977). Controlled and automatic human information processing: I. Detection, search, and attention. Psychological Review, 84, 1‑66.

Shiffrin, R. M. & Schneider, W. (1977). Controlled and automatic human information processing: II: Perceptual learning, automatic attending, and a general theory. Psychological Review, 84, 127‑190.

Shiffrin, R. M. & Schneider, W. (1977). Toward a unitary model for selective attention, memory scanning, and visual search. In S. Dornic & P. M. A. Rabbitt (Eds.), Attention and performance VI (pp. 413‑439). New York: Academic Press.

Eberts, R. & Schneider, W. (1980). Computer assisted displays enabling internalization and reduction of operator workload in higher order systems, or, pushing the barrier of human control beyond second order systems. Proceedings of the Human Factors Society, 59‑62.

Fisk, A. D. & Schneider, W. (1981). Control and automatic processing during tasks requiring sustained attention: A new approach to vigilance. Human Factors, 23(6), 737‑750.

Huey, R. B., Schneider, W., Erie, G. L. & Stevenson, R. D. (1981). A field‑portable racetrack and timer for measuring acceleration and speed of small cursorial animals. Experientia, 37, 1356‑1357.

Schneider, W. (1981). Basic computer troubleshooting and preventive computer maintenance operation. Behavioral Research Methods and Instrumentation, 13(2), 153‑162.

Shiffrin, R. M., Dumais, S. T. & Schneider, W. (1981). Characteristics of automatism. In J. Long & A. Baddeley (Eds.), Attention and performance IX (pp. 223‑238). Hillsdale, NJ: Erlbaum.

Fisk, A. D. & Schneider, W. (1982). NEST: A program to verify proper RATFOR nesting structure. Behavior Research Methods and Instrumentation, 14, 552.

Fisk, A. D. & Schneider, W. (1982). Type of task practice and time‑sharing activities predict performance deficits due to alcohol ingestion. Proceedings of the Human Factors Society, 926‑930.

Fisk, A. D., Schneider, W. & Burkhard, J. C. (1982). SENSE: A program for calculating parametric (d') and nonparametric (A' and Ag) indexes of sensitivity. Behavioral Research Methods and Instrumentation, 14, 361.

Freeman, W. J. & Schneider, W. (1982). Changes in spatial patterns of rabbit olfactory EEG with conditioning to odors. Psychophysiology, 19(1), 44‑56.

Schneider, W. & Fisk, A. D. (1982). Degree of consistent training: Improvements in search performance and automatic process development. Perception & Psychophysics, 31(2), 160‑168.

Schneider, W. & Fisk, A. D. (1982). Concurrent automatic and controlled visual search: Can processing occur without resource cost? Journal of Experimental Psychology: Learning, Memory, and Cognition, 8(4), 261‑278.

Schneider, W., Vidulich, M. & Yeh, Y. (1982). Training spatial skills for air‑traffic control. Proceedings of the Human Factors Society, 10‑14.

Fisk, A. D., Derrick, W. L. & Schneider, W. (1983). The assessment of workload: Dual task methodology. Proceedings of the Human Factors Society, 229‑233.

Fisk, A. D. & Schneider, W. (1983). Category and word search: Generalizing search principles to complex processing. Journal of Experimental Psychology: Learning, Memory, and Cognition, 9(2), 177‑195.

Fisk, A. D., Scerbo, M. W. & Schneider, W. (1983). Issues in training skilled performance. Proceedings of the Human Factors Society, 392‑396.

Schneider, W. & Fisk, A. D. (1983). Attention theory and mechanisms for skilled performance. In R. A. Magill (Ed.), Memory and control of action, (pp. 119‑143). New York: North Holland.

Vidulich, M., Yeh, Y. & Schneider, W. (1983). Time‑compressed components for air‑intercept control skills. Proceedings of the Human Factors Society, 161‑164.

Ackerman, P. L., Schneider, W. & Wickens, C. D. (1984). Deciding the existence of a time‑sharing ability: A combined methodological and theoretical approach. Human Factors, 26(1), 71‑82.

Fisk, A. D. & Schneider, W. (1984). Consistent attending versus consistent responding in visual search: Task versus component consistency in automatic processing development. Bulletin of the Psychonomic Society, 22(4), 330‑332.

Fisk, A. D. & Schneider, W. (1984). Memory as a function of attention, level of processing, and automatization. Journal of Experimental Psychology: Learning, Memory, and Cognition, 10(2), 181‑197.

Schneider, W., Dumais, S. T. & Shiffrin, R. M. (1984). Automatic and control processing and attention. In: R. Parasuraman, R. Davies, & R. J. Beatty (Eds.), Varieties of attention (pp. 1‑27). New York: Academic Press.

Schneider, W. & Fisk, A. D. (1984). Automatic category search and its transfer. Journal of Experimental Psychology: Learning, Memory, and Cognition, 10(1), 1‑15.

Schneider, W. (1984). Practice, attention, and the processing system. Behavioral and Brain Sciences, 7(1), 80‑81.

Shiffrin, R. M. & Schneider, W. (1984). Automatic and controlled processing revisited. Psychological Review, 91(2), 269‑276.

Ackerman, P. L. & Schneider, W. (1985). Individual differences in automatic and controlled information processing. In R. F. Dillon (Ed.) Individual differences in cognition 2, 35‑66. New York: Academic Press.

Schneider, W. (1985). Toward a model of attention and the development of automatic processing. In: M. Posner & O. S. Marin (Eds.), Attention and Performance XI (pp. 475‑492). Hillsdale, NJ: Erlbaum.

Schneider, W. (1985). Training high performance skills: Fallacies and guidelines. Human Factors, 27(3), 285‑300.

Schneider, W. & Shiffrin, R. M. (1985). Categorization (restructuring) and automatization: Two separable factors. Psychological Review, 92(3), 424‑428.

Eberts, R. & Schneider, W. (1986). Effects of perceptual training of sequenced line movements. Perception & Psychophysics, 39(4), 236‑247.

Kramer, A., Schneider, W., Fisk, A., & Donchin, E. (1986). The effects of practice and task structure on components of the event‑related brain potential. Psychophysiology, 23(1), 33‑47.

Schneider, W., & Detweiler, M. (1986). Changes in performance in workload with training. Proceedings of the Human Factors Society, 2, 1128‑1132.

Detweiler, M. & Schneider, W. (1987). A connectionist/control architecture for working memory and workload: Why working memory is not 7 +/‑ 2. Proceedings of the Human Factors Society (pp.684‑688).

Fisk, A. D., Ackerman, P. L. & Schneider, W. (1987). Automatic and controlled processing theory and its applications to human factors problems. In: P. A. Hancock (Ed.). Human factors in psychology (pp. 159‑197). New York: North Holland.

Fisk, A. D., Derrick, W. L. & Schneider, W. (1987). Methodological assessment of dual task paradigms. Current Psychological Research and Reviews, 5, 313‑327.

Schneider, W. (1987). Connectionism: Is it a paradigm shift for psychology? Behavioral Research Methods, Instruments and Computers, 19(2), 73‑83.

Schneider, W. & Detweiler, M. (1987). A connectionist/control architecture for working memory. In G. H. Bower (Ed.), The psychology of learning and motivation, Volume 21 (pp. 54‑119). New York: Academic Press.

Druckman, D., Swets, J. A. & Committee on Techniques for the Enhancement of Human Performance (including Walter Schneider) (1988). Enhancing human performance: Issues, theories and techniques. Washington, DC: National Academy Press.

Schneider, W. (1988). Micro Experimental Laboratory: An integrated system for IBM PC compatibles. Behavior Research Methods, Instruments, & Computers, 20(2), 206‑217.

Schneider, W. (1988). Sensitivity analysis in connectionist modeling. Behavior Research Methods, Instruments, & Computers, 20(2), 282‑288.

Schneider, W. (1988). Structure and controlling subsymbolic processing. (Commentary/Smolensky: Proper treatment of connectionism). Behavioral and Brain Sciences, 11, 51-52.

Schneider, W. & Detweiler, M. (1988). The role of practice in dual‑task performance: Toward workload modeling in a connectionist/control architecture. Human Factors, 30(5), 539‑566.

Oliver, W. L. & Schneider, W. (1988). Using rules and task division to augment connectionist learning. Proceedings of the Tenth Annual Conference of the Cognitive Science Society (pp. 55‑61).

Carlson, R. A. & Schneider, W. (1989). Acquisition context and the use of causal rules. Memory & Cognition, 17(3), 240-248.

Carlson, R. A. & Schneider, W. (1989). Practice effects and composition: A reply to Anderson. Journal of Experimental Psychology: Learning, Memory, and Cognition, 15, 531-533.

Carlson, R. A., Sullivan, M. A. & Schneider, W. (1989). Component fluency in a problem‑solving context. Human Factors, 31(5), 489-502.

Carlson, R. A., Sullivan, M. A. & Schneider, W. (1989). Practice and working memory effects in building procedural skill. Journal of Experimental Psychology: Learning, Memory, and Cognition, 15(3), 517-526.

Desimone, R., Wessinger, M., Thomas, L. & Schneider, W. (1989). Effects of deactivation of lateral pulvinar or superior colliculus on the ability to selectively attend to a visual stimulus. Society for Neuroscience Abstracts, 15, 162.

Schneider, W. (1989). Computer viruses a tutorial: What they are, how they work, how they might get you, and how to control them in academic institutions. Behavior Research Methods, Instruments & Computers, 21(2), 334-340.

Schneider, W. (1989). Developing automatic component skills for high workload performance in air traffic control tasks. In Symposium on Air Traffic Control Training for Tomorrow's Technology, Sponsored by the Federal Aviation Administration, December 6-7, 1988, Oklahoma City, OK.

Schneider, W. (1989). Enhancing a standard experimental delivery system (MEL) for advanced psychological experimentation. Behavior Research Methods, Instruments & Computers, 21(2), 240-244.

Carlson, R. A., Khoo, B. H., Yaure, R. G. & Schneider, W. (1990). Acquisition of a problem-solving skill: Levels of organization and use of working memory. Journal of Experimental Psychology: General, 119, 193-214.

Carlson, R. A., Khoo, B. H., Yaure, R. G. & Schneider, W. (1990). Working memory and skill acquisition: Reply to Halpern. Journal of Experimental Psychology: General, 119, 333-334.

Desimone, R., Wessinger, M., Thomas, L. & Schneider, W. (1990). Attentional control of visual perception: Cortical and subcortical mechanisms. In Cold Spring Harbor Symposium on Quantitative Biology, Vol. LV. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory Press.

Regian, W. & Schneider, W. (1990). Assessment procedures for predicting and optimizing skill acquisition in extended training. In: N. Frederiksen, R. Glaser, A. Lesgold & M. Shafto (Eds). Diagnostic monitoring of skill and knowledge acquisition (pp. 297-323). Hillsdale, NJ: Erlbaum.

Schneider, W. (1990). Training models to estimate training costs for new systems. In J. I. Elkind &, S. K. Card, J. Hochberg & B. M. Huey (Eds.), Human performance models for computer-aided engineering (pp. 215-232). San Diego, CA: Academic Press.

Shedden, J. M. & Schneider, W. (1990). A connectionist model of attentional enhancement and signal buffering. in Proceedings of the Twelfth Annual Conference of the Cognitive Science Society (pp. 566-573). Hillsdale, NJ: Erlbaum.

Detweiler, M. & Schneider, W. (1991). Modeling the acquisition of dual task skill in a connectionist/control architecture. In D. Damos (Ed.), Multiple-task performance: Selected Topics (pp. 69-99). London: Taylor & Francis.

Gupta, P. & Schneider, W. (1991). Attention, automaticity, and priority learning. In Proceedings of the Thirteenth Annual Conference of the Cognitive Science Society (pp.534-539). Hillsdale, NJ: Erlbaum.

Schneider, W. (1991). Equipment is cheap but the field must develop and support common software for psychological research. Behavior Research Methods, Instruments & Computers, 23(2), 114-116.

Schneider, W. & Oliver, W. L. (1991). An instructable connectionist/control architecture: Using rule-based instructions to accomplish connectionist learning in a human time scale. In K. Van Lehn (Ed.), Architectures for intelligence: The 22nd Carnegie Mellon symposium on cognition (pp.113-145). Hillsdale, NJ: Erlbaum.

Shedden, J. M. & Schneider, W. (1991). A connectionist simulation of attention and vector comparison: The need for serial processing in parallel hardware. In Proceedings of the Thirteenth Annual Conference of the cognitive Science Society (pp. 546-551). Hillsdale, NJ: Erlbaum.

St. James, J. & Schneider, W. (1991). Student MEL software support for instructors and teaching assistants in research methods course. Behavior Research Methods, Instruments & Computers, 23(2), 149-154.

Carlson, R. A., Lundy, D. H. & Schneider, W. (1992). Strategy guidance and memory aiding in learning a problem solving skill. Human Factors, 34, 129-145.

Schneider, W. & Graham, D. J. (1992). Introduction to connectionist modeling in education. Educational Psychologist, 27(4), 513-530.

Cohen, J. D., Noll, D. C. & Schneider, W. (1993). Functional magnetic resonance imaging: Overview and methods for psychological research. Behavior Research Methods, Instruments, & Computers 25(2), 101-113.

Noll, D. C., Meyer, C. H., Cohen, J. D. & Schneider, W. (1993). Spiral scan imaging of cortical activation. Journal of Magnetic Resonance Imaging, 3(P), 44-45.

Noll, D. C., Schneider, W. & Cohen, J. D. (1993). Artifacts in functional MRI using conventional scanning. In Proceedings of the Society of Magnetic Resonance in Medicine, 3, 1407. New York: Society of Magnetic Resonance in Medicine.

Schneider, W. (1993). Varieties of working memory as seen in biology and in connectionist/control architectures. Memory and Cognition, 21, 184-192.

Schneider, W., Noll, D. C., & Cohen, J. D. (1993). Functional topographic mapping of the cortical ribbon in human vision with conventional MRI scanners. Nature, 365, 150-153.

Schneider, W., Zuccolotto, A. & Tirone, S. T. (1993). Time stamping computer events to report .1ms accuracy events in the Micro Experimental Laboratory. Behavior, Research Methods, Instruments, & Computers, 25, 276-280.

Noll, D. C., & Schneider, W. (1994). Theory, Stimulation, and Compensation strategies for physiological motion artifacts in functional MRI. Proceedings of the IEEEE International Conference on Image Processing, 3, 40-44.

St. James, J., Schneider, W. & Rodgers, K.A. (1994). MEL LAB: Experiments in perception, cognition, social psychology and human factors. Pittsburgh, PA: Psychology Software Tools, Inc.

Schneider, W., Casey, B. J., Noll, D. (1994). Functional MRI mapping of stimulus rate effects across visual processing states. Human Brain Mapping, 1, 117-133.

Schneider, W., Pimm-Smith, M. & Worden, M. (1994). The neurobiology of attention and automaticity. Current Opinion in Neurobiology, 4, 177-182.

Baumann, S. B, Noll, D.C., Kondziolka, D.S., Schneider, W., Nichols, T.E., Mintun, M.A., LevineJ.D., Yonas, H., Orrison, W. & Sclabassi, R.J. (1995). Comparison of functional magnetic resonance imaging with positron emission tomography and magnetoencephalography to identify the motor cortex in a patient with an arteriovenous malformation. Journal of Image Guided Surgery, 1: 191-197.

Noll, D. C., Cohen, J. D., Meyer, C. H. & Schneider, W. (1995). Spiral K-space MRI of cortical activation. Journal of Magnetic Resonance Imaging, 5(1), 49-56. Recipient of the I. I. Rabi Award from the Society of Matneti Resonance, 1994.

Small, S. L., Noll, D. C., Perfetti, C. A., Xu, B. & Schneider, W. (1995). Using FMRI to determine the architecture of language processing in normal and impaired subjects (abstract). Neurology, 45(s4), A372.

Worden, M. & Schneider, W. (1995) Cognitive task design for FMRI. International Journal of Imaging Science & Technology, 6, 253-270.

Worden, M., Vincent, D. J., Schneider, W., & Shedden, J. (1995). Constraining high density ERP source analysis using functional MRI. In M. Witten & D.J. Vincent (Eds.) Series in mathematical biology and medicine, Vol. 5, Building a man in the machine: Computational medicine, public health, and biotechnology part II. World Scientific, Singapore.

Casey, B. J., Cohen, J. D., Noll, D., Schneider, W., Geidd, J. & Rapoport, J. L. (1996). Functional magnetic resonance imaging: Studies of cognition. In E. D. Bigler (Ed.), Handbook of Human Brain Function: Neuroimaging II, Clinical Applications. Plenum Press, (pp 299-329).

Small, S.L., Noll. D.C., Perfetti, C.A., Hlustik, P., Wellington, R. & Schneider, W. (1996). Localizing the lexicon for reading aloud: Replication of a PET study using fMRI. NeuroReport 1996; 7(4):961-965.

Schneider, W. & Pimm-Smith, M. (1997). Consciousness as a message aware control mechanism to modulate cognitive processing. Chapter in J. Cohen & J. Schooler (Eds.) Scientific Approaches to Consciousness: 25th Carnegie Symposium on Cognition, Erlbaum Assoc., Mahwah, NJ., pp. 65-80.

Schneider, W. (1999). Working memory in a multi-level hybrid connectionist control architecture (CAP2). in A. Miyake & P. Shah (Eds.) Models of working memory: Mechanisms of active maintenance and executive control, pp 340-374. Cambridge, UK: Cambridge University Press.

Schneider, W. (1999). Automaticity. The MIT Encyclopedia Of The Cognitive Sciences, The MIT Press, Cambridge MA., pp. 63-64.

Schneider, W., Ruth R., & Chein J. (2001). Using an fMRI task battery to rapidly produce functional markers. Neuroimage.

MacWhinney, B., St. James, J., Schunn, C., Li, P., & Schneider, W. (2001). STEP—A System for Teaching Experimental Psychology using E-Prime. Behavior Research Methods, Instruments, & Computers, 33 (2), 287-296.

Schneider, W., Eshman, A., & Zuccolotto, A. (2002). E-Prime: a User’s Guide. Pittsburgh: Psychology Software Tools, 278 pages.

Schneider, W., Eshman, A., & Zuccolotto, A. (2002) E-Prime: Reference Guide. Pittsburgh: Psychology Software Tools. 235 pages.

Fissell, K., Tseytlin, E., Cunningham, D., Carter, C. S., Schneider, W., & Cohen, J. D. (2003). Fiswidgets: A graphical computing environment for neuroimaging analysis. Neuroinformatics, Vol. 1, No. 1: 111-125.

St. James, J. D., Schneider, W. & Eschman A., (2003) Psychmate: Experiments for Teaching Psychology. Pittsburgh: Psychology Software Tools.

Chein, J. M. & Schneider, W. (2003). Designing Effective FMRI Experiments. J. Grafman & I. Robertson, eds. Handbook Of Neuropsychology, 9. Amsterdam: Elsevier Science B.V.

Schneider, W. & Chein, J. M., (2003). Controlled & Automatic Processing: From Mechanisms to Biology. Cognitive Science 27: 525–559.

Baumann, S., Neff, C., Fetzick, S., Stangl, G., Basler, L., Vereneck, R.,& Schneider, W. (2003). A Virtual Reality System for Neurobehavioral and Functional MRI Studies. Cyberpsychology & Behavior: 6: 3, 259-266.

Bolger, D. J.,Perfetti, C. A. , Schneider, W. A (2005) Cross-Cultural Effect On The Brain Revisited: Universal structure plus writing system variation. Human Brain Mapping. 25: 92-104.

Eschman. A., St James, J. Schneider, W., & Zuccolotto, A. (2005) Psychmate: Providing Psychology Majors The Tools To Do Real Experiments And Learn Empirical Methods. Behavioral Research Methods, 37, 301-311

Schneider, W. Bolger, , Eschman, A. , Neff, C. & Zuccolotto, A.P. (2005) Psychology Experiment Authoring Kit (PEAK) –Formal Usability Testing Of An Easy-To-Use Method For Creating Computerized Experiments, Behavioral Research Methods, 37, 312-323

St. James, J. D., Schneider, W. & Eschman A., (2005) Psychmate: Experiments for Teaching Psychology Version 2.0. Pittsburgh: Psychology Software Tools.

Chein & Schneider (2005) Neuroimaging studies of practice-related change: fMRI and meta-analytic evidence of a domain-general control network for learning. Cognitive brain research. 25 (3), 607-623.

Drobyshevsky, A. Baumann , S.B., Schneider, W. ( 2006) A Rapid fMRI Task Battery for Mapping of Visual, Motor, Cognitive and Emotional Function, Neuroimage. 31, 732-744

Goldberg, R.F., Perfetti, C.A., Schneider, W. (2006) Distinct and common cortical activations for multimodal semantic categories. Cognitive, Affective, and Behavioral Neuroscience. 6, 214-222.

Hill, N. M. & Schneider, W. (2006) Brain Changes in the Development of Expertise: Neurological Evidence on Skill-Based Adaptations in K. A. Ericsson, N. Charness, P. Feltovich, and R. Hoffman (Eds.) Cambridge Handbook of Expertise and Expert Performance. New York: Cambridge University pp 653-683.

Goldberg, R.F., Perfetti, C.A., Schneider, W (2006) Perceptual Knowledge Retrieval Activates Sensory Brain Regions. The Journal of Neuroscience 26(18):4917– 4921

Goldberg, R.F., Perfetti, C.A., J. A. Fiez, Schneider, W (2007) Selective retrieval of abstract semantic knowledge In left prefrontal cortex. The Journal of Neuroscience 2007 • 27(14):3790 –3798

Cole, M. W. & Schneider, W. (2007) The Cognitive Control Network: Integrated cortical regions with dissociable functions. NeuroImage. 37, 343-360.

Schneider, W., Cole, M., and Pathak, S. (2008). Reverse engineering the brain with a circuit diagram based on a segmented connectome and system dynamics. In Samsonovich, A. V. (Ed.). Biologically Inspired Cognitive Architectures: Papers from the AAAI Fall Symposium. AAAI Technical Report FS-08-04, pp. 169-173. Menlo Park, CA: AAAI Press. ISBN 978-1-57735-396-6.

Schneider, W. “Automaticity and Consciousness” in Banks, W. P. (Ed.). (2009). *Encyclopedia of consciousness* (Vol. 1). Academic Press.

Schneider, W., Pathak, S., Phillips, J.S., Cole, M.W. (2009) High Definition Fiber Tracking Exposes Circuit Diagram for Brain Showing Triarchic Representation, Domain General Control, and Metacognitive Sub-Systems. Association for the Advancement of Artificial Intelligence Biologically Inspired Cognitive Architectures. In Samsonovich, A. V., Noelle, D., and Mueller, S. (Eds.). Biologically Inspired Cognitive Architectures II: Papers from the AAAI Fall Symposium. AAAI Technical Report FS-19-01, Menlo Park, CA: AAAI Press.

Fernandez-Miranda, J. C., Engh, J. A., Pathak, S.K., Madhok, R., Boada, F., Schneider, W., Kassam, A. M. (2010) High-definition fiber tracking guidance for intraparenchymal endoscopic port surgery. J Neurosurg. 2010 Nov;113(5):990-9. doi: 10.3171/2009.10.JNS09933

Fernandez-Miranda, J.C., Pathak, S., and Schneider, W.  **(**2010) High-definition fiber tractography and language. Epub DOI: 10.3171/2009.10.JNS091460

Cole, M.W., Pathak, S., Schneider, W. (2010). Identifying the brain’s most globally connected regions, NeuroImage 49(4): 3132-3148.DOI: 10.1016/j.neuroimage.2009.11.001. Editors' Choice award Methods and Modeling for 2010 from NeuroImage

Cole M.W., Bagic A., Kass R., Schneider W. (2010). Prefrontal Dynamics Underlying Rapid Instructed Task Learning Reverse With Practice. Journal of Neuroscience 30(42): 14245–14254. doi:10.1523/JNEUROSCI.1662-10.2010

Verstynen TD, Jarbo K, Pathak S, Schneider W. (2011) In vivo mapping of microstructural somatotopies in the human corticospinal pathways. J Neurophysiol. vol 105, pp 336-346

Jarbo, K., Verstynen, T., Schneider, W. (2011). In vivo quantification of global connectivity in the human corpus callosum. NeuroImage 59(3): 1988-1996.

Cole, MW., Etzel, JA., Zacks, JM., Schneider, W., Braver, TS. (2011) “Rapid transfer of abstract rules to novel contexts in human lateral prefrontal cortex.” Front Hum Neurosci. 142. Epub 2011 Nov 21.

Shin SS, Verstynen T, Pathak S, Jarbo K, Hricik AJ, Maserati M, Beers SR, Puccio AM, Boada FE, Okonkwo DO, Schneider W. High-definition fiber tracking for assessment of neurological deficit in a case of traumatic brain injury: finding, visualizing, and interpreting small sites of damage J Neurosurg. 2012 May;116(5):1062-9. doi: 10.3171/2012.1.JNS111282.

Chein, J. Schneider, W. (2012). "The Brain’s Learning and Control Architecture." Current Directions in Psychological Science 21(2): 78-84.

Verstynen TD, Badre D, Jarbo K, Schneider W.(2012)Microstructural organizational patterns in the human corticostriatal system.J Neurophysiol. 2012 Jun;107(11):2984-95. Epub 2012 Feb 29.

Fernandez-Miranda, JC., Pathak, S., Engh, JA., Jarbo, K., Verstynen, T., Yeh, F., Mintz, A., Boada, FE., Schneider W., Friedlander, R. (2012). "High-Definition Fiber Tractography of the Human Brain: Neuroanatomical Validation and Neurosurgical Applications." Neurosurgery. 2012 Aug;71(2):430-53. doi: 10.1227/NEU.0b013e3182592faa.

Greenberg, AS., Verstynen, T., Chiu, YC., Yantis, S., Schneider, W., Behrmann, M. (2012). "Visuotopic Cortical Connectivity Underlying Attention Revealed With High Resolution Tractography." J Neurosci 32(8): 2773-2782.

Phillips, J., Greenberg, AS., Pyles, JA., Pathak, SK., Berhrmann, M., Schneider, W., Tarr, MJ. (in press). "Co-Analysis of Brain Structure and Function using fMRI and Diffusion-Weighted Imaging." J Vis Exp. 2012 Nov 8;(69). doi:pii: 4125. 10.3791/4125.

Yutzy, S., Schneider, W., & Boada, F. (ISMRM). "q-Space Trajectories for Faster q-Space Sampling.”

Pyles, JA., Verstynen, TD., Schneider, W., Tarr, MJ. (2013). “Explicating the face perception network with white matter connectivity.” PLoS One. 2013 Apr 22;8(4):e61611. doi: 10.1371/journal.pone.0061611

Price, R.B., Paul B., Schneider, W., Siegle, G.J. Neural correlates of three neurocognitive

intervention strategies: A preliminary step towards personalized treatment for

psychological disorders. Cognitive Therapy Research 2013 Aug 1;37(4):657-672.

Verstynen, T., Phillips, J., Braun, E, Workman, B., Schunn, C., Schneider, W. (2012) “Dynamic sensorimotor planning during long-term sequence learning: the role of variability, response chunking and planning errors.” PLoS One 7(10) [epub]

Tormenti, M., Krieger, D., Puccio, AM., McNeil, MR., Schneider, W., Okonkwo, DO. (2012). “Magnetoencephalographic virtual recording: a novel diagnostic tool for concussion.” Neurosurg Focus 33(6): E9: 1-7

Verstynen, T., Weinstein, A., Rofey, D., Schneider, W., Jakicic, J., Erickson, K. (2013). "Increased body mass index is associated with global decreases in white matter microstructural integrity." Psychosomatic Medicine 74(7): 682-90

Moss J, Schunn CD, Schneider W, McNamara DS (2013) The nature of mind wandering during reading varies with the cognitive control demands of the reading strategy. Brain Research 2013 Nov 20;1539:48-60 Price RB, Paul B, Schneider W, Siegle GJ. Neural Correlates of Three Neurocognitive Intervention Strategies: A Preliminary Step Towards Personalized Treatment for Psychological Disorders. Cognitive Therapy Research 2013 Aug 1;37(4):657-672.

Wang Y, Fernández-Miranda JC, Verstynen T, Pathak S, Schneider W, Yeh FC. .Rethinking the role of the middle longitudinal fascicle in language and auditory pathways Cereb Cortex. (2013) Oct;23(10):2347-56. doi: 10.1093/cercor/bhs225 (Cover)

Luo, W, Head, A, Schneider, W, Wang, J. 2014 e-Chimera: Rapid In-Situ Mobile Experimentation through Integrated Design, Test, and Deployment ACM Transactions ACM 1539-9087/2010/03-ART39

Krieger D., McNeil, M, Zhang,J, Puccio, A. Schneider, W, Xin Li,X,Okonkwo, DO (2014) Very high resolution neuroelectric brain imaging by referee consensus processing. Intl J Advd Comp Sci (4)1: 15-25. Jan 2014

Krieger D, McNeil M, Zhang J, Puccio, A., Schneider, W., Xin, L., Okonkwo, DO. (2014). Very high resolution neuroelectric brain imaging realized by referee consensus processing. International Journal of Advance Computer Science, 4 (1): pp14-24

Shin SS, Pathak S, Presson N, Bird W, Wagener L, Schneider W, Okonkwo DO, (2014) Detection of White Matter Injury in Concussion Using High-Definition Fiber Tractography· Niranjan A, Lunsford LD (eds): Concussion. Prog Neurol Surg. Basel, Karger, 2014, vol 28, pp 1–8 DOI: 10.1159/000358767

Richey, J. E., Phillips, J. S., Schunn, C. D., & Schneider, W. (2014). Is the Link from Working Memory to Analogy Causal? No Analogy Improvements following Working Memory Training Gains. PloS one, 9(9), e106616.

Guise, C., Fangueiro, R., Nóbrega, J. M., & Schneider, W. (2014). Study on fibrous materials for

brain phantoms.

Presson, N., Krishnaswamy, D., Wagener, L., Bird, W., Jarbo, K., Pathak, S., ... & Schneider, W.

(2015). Quantifying White Matter Structural Integrity With High-Definition Fiber Tracking in Traumatic Brain Injury. *Military medicine*, *180*(3S), 109-121.

Chmura, J., Presson, N., Benso, S., Puccio, A. M., Fissel, K., Hachey, R., ... & Schneider, W.

(2015). A High-Definition Fiber Tracking Report for Patients With Traumatic Brain Injury and Their Doctors. *Military medicine*, *180*(3S), 122-134.

Presson, N., Beers, S. R., Morrow, L., Wagener, L. M., Bird, W. A., Van Eman, G., ... &

Schneider, W.(2015). An exploratory analysis linking neuropsychological testing to quantification of tractography using High Definition Fiber Tracking (HDFT) in military TBI. *Brain imaging and behavior*, *9*(3), 484-499.

Faraji, A. H., Abhinav, K., Jarbo, K., Yeh, F. C., Shin, S. S., Pathak, S., Hirsch, B.E., Schneider,

W., Friedlander, R. M. (2015). Longitudinal evaluation of corticospinal tract in patients with resected brainstem cavernous malformations using high-definition fiber tractography and diffusion connectometry analysis: preliminary experience. *Journal of neurosurgery*, *123*(5), 1133-1144.

Guise, C., Fangueiro, R., Nóbrega, J. M., & Schneider, W. (2015). Study on fibrous materials for

brain phantoms. Innovation in Medicine and Healthcare 2014, 207, 163.

Shiffrin, Richard M., and Walter Schneider. "21 Attention and Automatism." Scientists Making a

Difference: One Hundred Eminent Behavioral and Brain Scientists Talk about Their Most

Important Contributions (2016): 104.

Guise, C., Fernandes, M. M., Nóbrega, J. M., Pathak, S., Schneider, W., & Fangueiro, R. (2016).

Hollow polypropylene yarns as a biomimetic brain phantom for the validation of High

Definition Fiber Tractography imaging. ACS Applied Materials & Interfaces, 8(44), 29960

29967.

Okonkwo, D., Presson, N., Minhas, D., Laymon, C., Lopresti, B., Mathis, C., Schneider, W. &

Mountz, J. (2016, July). Pet imaging of tau pathology using [18f] AV-1451 in chronic

TBI. In Journal of Neurotrauma (vol. 33, no. 13, pp. A92-a92). 140 Huguenot Street, 3rd Fl, New Rochelle, NY 10801 USA: Mary Ann Liebert, Inc.

Mill, R. D., Bagic, A., Bostan, A., Schneider, W., & Cole, M. W. (2017). Empirical validation ofdirected functional connectivity. NeuroImage. 146:275-287

Wilde, E. A., Provenzale, J. M., Taylor, B. A., Boss, M., Zuccolotto, A., Hachey, R., ... &

Schneider, W. (2018). Assessment of quantitative magnetic resonance imaging metrics in

the brain through the use of a novel phantom. Brain injury, 32(10), 1265-1275.

Mill, R. D., Bagic, A., Bostan, A., Schneider, W., & Cole, M. W. (2017). Empirical validation of directed functional connectivity. *NeuroImage*, *146*, 275-287.

Provenzale, J. M., Taylor, B. A., Wilde, E. A., Boss, M., & Schneider, W. (2018). Analysis of

variability of fractional anisotropy values at 3T using a novel diffusion tensor imaging

phantom. The neuroradiology journal, 31(6), 581-586.

Ware, A. L., Biekman, B., Hachey, R., MacLeod, M., Bird, W., Pathak, S., ... & Pomiecko, K. (2018). A Preliminary High-Definition Fiber Tracking Study of the Executive Control Network in Blast-InducedTraumatic Brain Injury. Journal of neurotrauma, 36(5), 686-701.

Kontos, A. P., Collins, M. W., Holland, C. L., Reeves, V. L., Edelman, K., Benso, S., ... & Okonkwo, D. (2018). Preliminary evidence for improvement in symptoms, cognitive, vestibular, and oculomotor outcomes following targeted intervention with chronic mTBI patients. Military medicine, 183(suppl\_1), 333-338.

Soose, R., Mesley, M., Puffer, R. C., Edelman, K., Puccio, A., Sharpless, J., ... & Kontos, A.

(2018, August). Improvement in sleep disturbances after targeted intervention in chronic

traumatic brain injury: a team-tbi study. In journal of neurotrauma (vol. 35, no. 16, pp.

A80-a80). 140 huguenot street, 3rd fl, new rochelle, ny 10801 usa: mary ann liebert, inc.

Mountz, J., Minhas, D., Laymon, C., Beers, S., Puccio, A., Edelman, K., ... & Mathis, C. (2018).

Comparison of [18F] AV-1451 PET with HDFT in chronic TBI subjects. Journal of

Nuclear Medicine, 59(supplement 1), 1643-1643.

Fan, Q., Nummenmaa, A., Wichtmann, B., Witzel, T., Mekkaoui, C., Schneider, W., Wald, L.L. and Huang, S.Y., 2018. A comprehensive diffusion MRI dataset acquired on the MGH Connectome scanner in a biomimetic brain phantom. *Data in brief*, *18*, pp.334-339.

Okonkwo DO, Puffer RC, Minhas DS, Beers SR, Edelman KL, Sharpless J, Laymon CM, Lopresti BJ, Benso S, Puccio AM, Pathak S, Ikonomovic MD, Mettenburg JM, Schneider W, Mathis CA, Mountz JM. 18F]FDG, [11C]PiB, and [18F]AV-1451 PET Imaging of Neurodegeneration in Two Subjects With a History of Repetitive Trauma and Cognitive Decline. Frontiers of Neurology Aug 2;10:831. doi: 10.3389/fneur.2019.00831 1-9

Ware AL, Biekman B, Hachey R, MacLeod M, Bird W, Pathak S, Clarke E, Borrasso A, Puccio AM, Glavin K, Pomiecko K, Moretti P, Beers SR, Levin HS, Schneider W, Okonkwo DO, Wilde EA. A Preliminary High-Definition Fiber Tracking Study of the Executive Control Network in Blast-Induced Traumatic Brain Injury.J Neurotrauma. 2019 Mar 1;36(5):686-701. doi: 10.1089/neu.2018.5725. Epub 2018 Oct 5.PMID: 30070176

Kristofer Pomiecko, Carson Sestili, Kate Fissell, Sudhir Pathak, David Okonkwo, and Walter Schneider. 3d con- volutional neural network segmentation of white matter tract masks from mr diffusion anisotropy maps. *2019 IEEE 16th International Symposium on Biomedical Imaging (ISBI 2019)*, pages 1–5, 2019

Ashley L Ware, Brian Biekman, Rebecca Hachey, Marianne MacLeod, William Bird, Sudhir Pathak, Emily Clarke, Allison Borrasso, Ava M Puccio, Kelly Glavin, et al. A preliminary high-definition fiber tracking study of the executive control network in blast-induced traumatic brain injury. *Journal of neurotrauma*, 36(5):686–701, 2019

Mesley, M. S., Edelman, K., Sharpless, J., Borrasso, A., Billigen, J. B., Puffer, R., ... & Soose, R.

(2019). Impact of Multi-Disciplinary Care and Clinical Coach Coordinators on Participant

Satisfaction and Retention in TBI Clinical Trials: A TEAM-TBI Study. Military medicine,

184(Supplement\_1), 155-159.

Ranjan RJ, Aditya Nigam A, Arnav Bhavsar A, Sudhir K Pathak SK Schneider W and Rathish K. Multi Shell D-MRI Reconstruction via Residual Learning utilizing Encoder-Decoder Network with Attention (MSR-Net) proceedings IEEE Engineering in Medicine and Biology Society ([EMBC 2020](https://embc.embs.org/2020/))

Galey, J. L., Eagle, S. R., Blaney, N. A., Holland, C. L., Bitzer, H. B., Schneider, W., Okonkwo, D. O., Mucha, A., Collins, M. W., & Kontos, A. P. (2020). Effect of Patient Compliance With Treatment Recommendations on Clinical Outcomes in Chronic mTBI: A TEAM-TBI Study. Military medicine, 185(7-8), e1229–e1234. https://doi.org/10.1093/milmed/usaa025

Pathak, S, Schneider,W, Wu,Y, Wilde, E, Zuccolotto, A, Huang, S , FanQ, Witzel T, Wald W, Fieremans, E, Komlosh, ME, Benjamini, D, Avram AV, and Basser PJ Diffusion ground truth quantification of axon scale phantom: Limits of diffusion MRI on 7T, 3T and Connectome 1.0. IMSRM 2021 Power Pitch 7433

Vishwesh Nath, Sudhir K Pathak, Kurt G Schilling, Walt Schneider, and Bennett A Landman. Deep learning estimation of multi-tissue constrained spherical deconvolution with limited single shell dw-mri. volume 11313, page 113130S. International Society for Optics and Photonics, 2021

Sandip Panesar, Vishwesh Nath, Sudhir Pathak, Walter Schneider, Bennett Landman, Michael Iv, Diana An- thony, Tatiana Jansen, Kumar Abhinav, and Juan Fernandez-Miranda. Deep learning improves pre-surgical white matter visualization in glioma patients. *medRxiv*, 2021

Costa, C., Nixon, B.T., Bhattacharjee, S., Graybill, B., Zeinalipour-Yazti, D., Schneider, W., Chrysanthis, P. (2021) A context, location and preference-aware system for safe pedestrian mobility. The 22nd IEEE International Conference on Mobile Data Management" (MDM '21), IEEE Press, Pages: , June 15 - June 18, 2021, Toronto, Canada, 2021 Best Industrial and Application paper

Nixon, BT, Bhattacharjee, S.Graybill, B, Costa, C, Pathak, S, Schneide r, W and. Chrysanthis, P. HealthDist: A Context, Location and Preference-Aware System for Safe Navigation. 22nd IEEE International Conference on Mobile Data Management. 250-253. 2021. DOI: 10.1109/MDM52706.2021.00050 – Best demonstration paper of the IEEE

Krieger, D., Shepard, P., Soose, R., Puccio, A., Beers, S., Schneider, W., Kontos, A. P., Collins, M. W., & Okonkwo, D. O. (2021). MEG-Derived Symptom-Sensitive Biomarkers with Long-Term Test-Retest Reliability. Diagnostics (Basel, Switzerland), 12(1), 84. https://doi.org/10.3390/diagnostics12010084

Krieger, D., Shepard, P., Soose, R., Puccio, A. M., Beers, S., Schneider, W., ... & Okonkwo, D. O. (2021). Symptom-Dependent Changes in MEG-Derived Neuroelectric Brain Activity in Traumatic Brain Injury Patients with Chronic Symptoms. *Medical Sciences*, *9*(2), 20.

Eagle, S. R., Kontos, A. P., Collins, M. W., Mucha, A., Holland, C. L., Edelman, K., Benso, S., Schneider, W., Soose, R., & Okonkwo, D. O. (2021). Targeted Intervention Improves Symptoms and Impairments in Patients With Mild Traumatic Brain Injury With Chronic Symptom: A Prospective, Multiple Interventional Research Trial. Journal of special operations medicine : a peer reviewed journal for SOF medical professionals, 21(2), 61–66. https://doi.org/10.55460/AEY2-8NRI

Huang, S. Y., Witzel, T., Keil, B., Scholz, A., Davids, M., Dietz, P., Rummert, E., Ramb, R., Kirsch, J. E., Yendiki, A., Fan, Q., Tian, Q., Ramos-Llordén, G., Lee, H. H., Nummenmaa, A., Bilgic, B., Setsompop, K., Wang, F., Avram, A. V., Komlosh, M., … Rosen, B. R. (2021). Connectome 2.0: Developing the next-generation ultra-high gradient strength human MRI scanner for bridging studies of the micro-, meso- and macro-connectome. NeuroImage, 243, 118530.https://doi.org/10.1016/j.neuroimage.2021.118530

Nixon, B., Bhattacharjee, S., Graybill, B., Costa, C., Pathak, S., Schneider, W., Chrysanthis, P.

HealthDist: A Context, Location and Preference-Aware System for Safe Navigation, "The 22nd IEEE International Conference on Mobile Data Management" (MDM '21), IEEE Press, Pages: , June 15 - June 18, 2021, Toronto, Canada, 2021.

Tollefson S, Eagle SR, Puccio AM, Agoston DV, Collins MW, Kontos AP, Schneider W, Okonkwo DO. Pre-Intervention Blood Hyperphosphorylated Tau and Ubiquitin C-Terminal Hydrolase-L1 Concentrations are Associated with Magnitude of Symptom Improvement following Targeted Intervention in Patients with Chronic Traumatic Brain Injury. Poster presentation at Military Health Science Research Symposium. September 2022.

Eagle SR, Tollefson S, Puccio A, Agoston DV, Collins M, Kontos A, Schneider W, Okonkwo DO. Ubiquitin C-Terminal Hydrolase-L1 and von Willebrand Factor as Potential Predictive Blood Biomarkers for Patients with Psychological Issues from Chronic Traumatic Brain Injury. Poster presentation at Military Health Science Research Symposium. September 2022.

Schneider, W., Pathak, S., Pomiecko, K., Okonkwo, D., Fissell, C., Dzikiy, J., Zuccolotto, A., Wilde, E. MRI brain health monitoring enabling normative diagnostics through phantom calibrated MRI.,Poster Presentation at Military Health Research Symposium, August 2022

Schneider, W., Pathak, S., Wu, Y., Watson, A., Zhao, Y., Zor, F., Kulahci, Y., Gorantla, V. Fasciculus Axonal Connective Tissue Multiscale Imaging Connectome (FACTMIC) Mapping of Porcine and Human Optic Nerve for Accurate Connectome Mapping and Optic Nerve Tissue Health at Viable Cost. Poster Presentation at Military Health Research Symposium, August 2022

Sudhir Pathak, Yijen Wu, Vijay Gorantla, Fatih Zor, Yalcin Kulahci, Alan Watson, Yongxin Zhao, Walter Schneider. Fasciculus Axonal Connective Tissue (FACT) Mapping of Porcine Optic Nerve for Accurate Connectome Mapping at Viable Cost. Poster Presentation at ISMRM Conference, London, England May 2022.

Jha, R. R., Pathak, S. K., Nath, V., Schneider, W., Kumar, B. V. R., Bhavsar, A., & Nigam, A. (2022). VRfRNet:Volumetric ROI fODF reconstruction network for estimation of multi-tissue constrained spherical deconvolution with only single shell dMRI. Magnetic resonance imaging, 90, 1–16.<https://doi.org/10.1016/j.mri.2022.03.004>

Patryk Filipiak P, Timothy Shepherd, T1, Basler L., Zuccolotto A, Placantonakis DC, Schneider, W , E Boada FE, Baete SH (2022) Stepwise Stochastic Dictionary Adaptation Improves Microstructure Reconstruction with Orientation Distribution Function Fingerprinting CDMRI Workshop (2022) doi: 10.1007/978-3-031-21206-2\_8.

Schneider, W. Wu, Y, Alan Watson, A Kedziora, K , Pathak,S., ZhaoY. , Gorantla, Y. , Anders, A. , Polman, R. , Sheffle, K. (2023) Fasciculus Axonal Connective Tissue Multiscale Imaging (FACTMI) - Connectome Mapping of Optic Nerve with 16 µm MRI at 14T and 0.1 µm histology. ISMRM Power Pitch June 2023

Shiffrin, S, Logan, G. Schneider (2023) Advancing Theorizing About Fast-And-Slow Thinking Commentary on Wim De Neys target article for Behavioral and Brain Sciences.

***Special Report HDFT University of Pittsburgh Neurosurgery News Winter 2012***

Juan C. Fernandez-Miranda, Sudhir Pathak, Walter Schneider High-Definition Fiber Tractography: Unraveling the connections of the human brain University of Pittsburgh Neurosurgery News Winter 2012

Samuel Shin; David Okonkwo; Walter Schneider, PhD; Timothy Verstynen Using high resolution white matter mapping to detect traumatic brain injury University of Pittsburgh Neurosurgery News Winter 2012

Johnathan Engh, Sudhir Pathak, Juan C. Fernandez-Miranda, HDFT, endoscopic port surgery synergistic in management of deep brain tumors University of Pittsburgh Neurosurgery News Winter 2012

Arlan Mintz; Johnathan Engh; Sudhir Pathak Intra-operative use of HDFT with image-guidance valuable in awake craniotomy for tumor resection University of Pittsburgh Neurosurgery News Winter 2012 (use method from lab)

Robert M. Friedlander, MD; Juan C. Fernandez- Miranda, MD; Amir Faraji HDFT provides key edge in presurgical planning of brainstem cavernomas University of Pittsburgh Neurosurgery News Winter 2012 (use method from lab)

Research Grants and Contracts Awarded Note: all funds awarded to University of Pittsburgh unless indicated otherwise; Walter Schneider as Principal Investigator, except as noted.

**Active Grants and Contracts**

VA (PI Lisa Wilde & Walter Schneider) $5,218,247 Pittsburgh subcontract $900,000**. 5/1/21-4/30/22. CHIPS: Clinical Health Imaging Portability Standards for VA MRI** (likely to be continued 2 additional years)

DOD (PI Lt Col Adam Willis & Walter Schneider) $750,000 Pittsburgh subcontract $300,000. **Fascicular tracking in porcine nervous system after blast exposure with high definition fiber tracking and diffusion tensor imaging,**

VRP (PI Walter Schneider) (in contracting proposed start date 9/1/2020 to 8/31/2022) $760,000. DoD **High Definition Axonal and Connective Tissue Imaging (HD-ACTI)**

**in Porcine and Human Models of Traumatic Optic Nerve Injury**

VA (Lisa Wilde & Walter Schneider Co-PIs)$534,040 total, Pitt $294,223 3/1/2020-2/28/2021  **VA Quantitative Quality Assurance (VA-QQA) MRI for Brain Health**

1905R01 (Schneider) 06/30/19 – 06/30/24 DSF Charitable Foundation $1,000,000 direct cost match  to VA funding. **Veterans Administration Magnetic Resonance Imaging Calibration and Performance Enhancement (VA MRI CALIPER)**

RFA-EB-17-004 (PI Huang, Schneider local PI) 09/21/18 – 08/31/23 NIH U01EB026996 $3,500,000, $703,029 Pitt Funding **Connectome 2.0: Developing the Next Generation Human MRI Scanner for Bridging Studies of the Micro-m Meso- and Macro-connectome**

NIH SBIR (PI Anthony Zuccolotto PST, Schneider Chief Scientist, Pathak lead) 3/6/19 9/5/21 19-Mar Sudhir Pathak **$1489,978, $503,756 Pitt.  Advancing and calibrating MRI brain Connectome anisotropic diffusion imaging with Taxon brain network diffusion phantoms.**

NFL (Okonkwo, Schneider lead MRI Imaging) 04/01/18 - 03/31/22 National Football League $6,070,384. **Prevalence of Brain Health Versus Neurodegeneration in Professional Football Retirees**

**Completed Grants and Contracts**

4100077085 (Okonkwo, Schneider lead MRI Imaging) 01/01/17 - 12/31/21Commonwealth of PA; DOH $4,000,000 **Biomarkers and Drug Discovery Pipeline of TBI-Related  Neurodegeneration**

DSF Foundation Pittsburgh High Definition Fiber Tracking (HDFT) Traumatic Brain Injury (TBI) Transformative Advancement Plan 12/15/13 – 09/30/16 $1,800,000 PI Walter Schneider; Co-PI David Okonkwo.

US Army Medical Materials Command Targeted Evaluation, Action, & Monitoring of Traumatic Brain Injury (TEAM-TBI) $4,272,445 4/25/2014-4/24/2019 PI David Okonkwo Co-PI Walter Schneider with area co-PIs Anthony Kontos, Mickey Collins, Thomas DeGraba, NICoE, John Malone, Naval Medical Center San Diego (NMCSD)

CDMRP (Army) TBI Biological Diagnosis via High Definition Tractography Asymmetry Screening PI Walter Schneider, Co-PI David Okonkwo 9/30/2012-9/30/2019 $2,403,144

US Army Medical Materials Command High Definition Fiber Tracking Biological Diagnosis of TBI Providing Actionable Clinical Report of Quantified Damage 9/30/2012-9/30/2019 $4,610,072 PI David Okonkwo Co-PI Walter Schneider

CDMRP In Vivo Neuroimaging Biomarker Panel for Chronic Traumatic Encephalopathy David Okonkwo PI, co- PIs: Walter Schneider, James Mountz 9/30/2013 to 9/30/2016 $634,148

Naval Health Research Center. Transforming Research and Clinical Knowledge in TBI (TRACK-TBI) – High Definition Fiber Tracking Neuroimaging, Biospecimen and Data Informatics Repositories. 07/01/2014 to 06/30/2019 $4,569,679 PI: Okonkwo, CO-PI: George Manley UCSF, Walter Schneider, Ava Puccio

Navy Medicine Advanced Longitudinal Diffusion Imaging for TBI Diagnosis of Military Personnel - $3,615,078 PI Walter Schneider Co-PI David Okonkwo 6/1015-6/2019

CENC Study 39: Diffusion Tensor Imaging Standardization using Novel MR Diffusion Phantoms P.I. Elisabeth Wilde (Baylor) Co-P.I. James Provenzale (Duke) Pitt portion about $150,000 1/1/2015-12/30/2015

NFL/GE Head Health Initiative Challenge. Efficacy of high definition fiber-tracking (HDFT) to identify impairment, track recovery, and inform safe return to play following concussion. 06/01/2014-05/30/2015. $300,000. PI- Anthony P. Kontos; Co-Pis- Michael W. Collins, Walter Schneider; Co-Investigators- David Okonkwo, Vikas Agarwal

ONR/DURIP: Massive Computing Capabilities to Qualitatively Advance DoD Cognitive Applications that Use Brain Imaging PI Marcel Just, Co-Pi Walter Schneider, John Anderson, Tom Mitchell 3/1/2011-12/28/2012 (estimated) $852,494 (pitt part ~$150,000).

CASL/Army Brain Fitness Training for Foreign Language Learning Growth. PI Walter Schneider with Natasha Tokowicz 2/28,/2011, 12/31/2011$300,000

DARPA: Biologically Accelerated Learning Technology (BALT) Phase II. PI: Walter Schneider, Chris Schunn, Natasha Tokowicz, & Ted Hubbert. 5/1/2009 – - 8/30/2011. $2,172,530 total cost

DARPA: Training Induced Brain Fiber Growth PI: Walter Schneider. 1/1/2010-- 8/30/2011 $500,000

DARPA: Biologically Accelerated Learning Technology (BALT). PI: Walter Schneider, Chris Schunn, Kurt Van Lehn, and Natasha Tokowicz. 4/1/2007 – 6/30/2012. $1,168,781 total cost

DARPA; Assessing Brain Executive and Affect Circuits and Training Interventions Increase Capacity and Stress Tolerance. PI: Walter Schneider; Co-PI: Greg Siegle. 1/1/09 - 4/30/2010. $275,000

DARPA(funded through ONR) grant N00014-05-1-0881 grant Mapping Brain Architecture and Processes Supporting Experience Based Cognition PI Walter Schneider, Co Pi’s Greg Siegle, Mark Wheeler, Kwan-Jin Jung. University of Pittsburgh; Sub Contractors Rainer Goebel & Elia Formisano Maastricht University Netherlands; Tom Landauer & Peter Foltz Pearson Knowledge Technologies Daniel Levin Vanderbilt University 08; 10/1/05 – 9/30/07 $1,096,329

Office of Navy Research ONR, No. 010360. Cognitive, biological, and computational analyses of automaticity in complex cognition. PI: Marcel Just; Co-PI: Walter Schneider.$4,833,321, 06/01/01 - 05/30/06. (Carnegie Mellon University).

Department of Health and Human Services PHS,No. Par-99-138. Usability and interoperability of neuroimaging software. PI: Jonathan Cohen ;Co-Pis: Walter Schneider, Cameron Carter. 7/1/00-6/30/05; $1,542,510. (Yale University).

NSF: The Cerebellum and Language. PI Julie A. Fiez with Co-I Walter Schneider. 9/1/2011-8/31/2014 $593,228 (total cost)

Department of Health & Human Services PHS. Graduate education in the neural basis of cognition. PI James McClelland; Co-PIs: Peter Strick, David Touretzky, Walter Schneider. 7/1/00 - 6/30/05; $772,108. (Carnegie Mellon University.

National Science Foundation, #DUE-9952631. Laboratory for undergraduate instruction and research in psychology. PI: Carey Ryan; Co-PI: Walter Schneider; 5/1/00 - 4/30/02; $29,712. ~~(University of Pittsburgh).~~

National Science Foundation, IGERT #9987588. Innovative cross-disciplinary training in neuroscience and computation, PI: David Touretzky, Co-PI: Walter Schneider. 6/1/00 -5/31/05; $1,800,000. (Carnegie Mellon University).

National Science Foundation, KDI Proposal No. 58512-55-00. Computational models and coordinated neuroimaging of learning and cognitive function. PI: Walter Schneider; Co-PI: Jay McClelland. 10/1/98-9/30/01; $1,200,000.

James S. McDonnell Foundation, JSMF Grant No. 97-29. Brain activations and learning to read: an fMRI investigation. PI: Walter Schneider; Co-PIs: Isabel Beck, Charles Perfetti, B.J. Casey. 7/1/97-6/30/00; $105,000.

James S. McDonnell Foundation. Brain imaging and cognitive analyses of language processing. PI: Bruce McCandliss; Co-PI: Walter Schneider. 12/15/96 - 2/14/99; $105,000.

National Science Foundation, (REU) – DBI–9605167. Neural basis of cognition undergraduate summer research program, 4/15/97-9/30/00; $173,746.

National Science Foundation, BIR-9413228. Research training group in neural processing in cognition. PI: Walter Schneider; Co-PIs: Bard Ermentrout, Jay McClelland, and Daniel Simons. 9/1/97-6/30/01; $899,933.

National Science Foundation, BIR-9014347: Research training group in neural processing in cognition. PI: Walter Schneider; Co-PIs: Bard Ermentrout, Jay McClelland, and Dan Simons. 9/15/90-8/30/00; $1,356,210.

National Institute of Mental Health, NIMH 5R01-DC03378-02: Functional neuroanatomy of normal and impaired language. PI: Steven Small, University of Maryland. 9/29/96-8/31/01, $1,784,029 (Walter Schneider: subproposal).

National Institutes of Health, HS 32395-02. Mapping human attention & memory control with fMRI. 2/6/96- 1/31/01; $937,167.

Office of Naval Research. Brain imaging of human skill acquisition and workload processing. 7/1/95-6/30/98; $529,957.

Office of Naval Research, SBIR. Turn-key system for fMRI. 1/1/96-12/30/97; $697,853.

National Science Foundation, SBIR BMI-9405202. A graphical experiment specification interface: A reasoning support system and generator for behavioral research. 9/1/94 - 8/31/97; $299,220.

Army Research Institute. Skill acquisition, transfer, and retention for high workload performance. 10/1/92-4/30/96; $327,000.

Office of Naval Research. Tracking the biology of dynamic cognitive processing in working memory and skill acquisition. 6/1/92-6/30/95; $406,038.

Grant in Office of Naval Research. Laboratory for localizing dynamic cognitive processing. 5/1/91-4/30/92; $94,474.

McDonnell-Pew Foundation. Neurophysiological basis of shifting attention. 5/1/91-4/30/92; $59,702.

Office of Naval Research. U. S. Participation in Conference on Hybrid Models of Cognition, 5/1/91-9/30/91; $10,500.

Army Research Institute, MDA-903-89-K-0174; Developing declarative knowledge and automatic components for performing high workload tasks. 9/30/89-9/30/92; $477,366.

Office of Naval Research. Brain communication theory, attention and automaticity. 6/87‑5/90; $329,995.

Army Research Institute. Quick development microcomputer system: Training automatic component skills for electronic troubleshooting. 8/1/86‑7/30/89; $470,776.

Department of the Navy. Developing automatic component skills for air intercept control. 7/1/86‑6/31/87; $80,068.

Office of Naval Research: Workshop. Theory on attention and arousal. With Norman M. Weinberger, University of California, Irvine, 1/1/86‑12/30/86; $37,468.

Defense Advanced Research Projects Agency (DARPA). Microprocessor training for developing automatic component skills in dynamic environments. 6/1/84‑5/30/86; $145,030.

Office of Naval Research. Microprocessor‑based trainee selection and skill training for high workload environments. 10/1/83‑12/30/86; $432,241.

National Institute of Mental Health. Automatic/control processing in heterarchies. 6/1/81‑6/1/84; $157,460.

Office of Naval Research. Individual differences and training of automatic/control heterarchial processing. 10/1/80‑9/30/83; $205,789.

National Institute of Mental Health. Automatic/control processing nature and development. 1/1/78‑12/30/80; $82,879.

Office of Naval Research. Individual differences in automatic and controlled human information processing. 10/1/77‑9/30/80; $86,470.

University of Illinois Research Board. Automatic and controlled processing. 1977‑1978; $5,400.

National Institute of Mental Health, Small Grants Program. Two types of perception in search and attention. 9/15/75‑8/31/76; $4,950.

Research grants as member of research team:

ONR/DURIP: Massive Computing Capabilities to Qualitatively Advance DoD Cognitive Applications that Use Brain Imaging. PI Marcel Just, Co-Pi Walter Schneider, John Anderson, Tom Mitchell 1/1/2012-12/28/2013 (estimated) $852,494 (Pitt part ~$150,000) no indirect as it is equipment only.

Office of Navy Research, ONR No. 010360. Cognitive, biological, and computational analyses of automaticity in complex cognition. PI: Marcel Just; Co-PI: Walter Schneider . 06/01/01 – 06/30/07; $4,833,321. (Carnegie Mellon University).

Department of Health & Human Services, PHS. Usability and interoperability of neuroimaging software. PI: Jonathan Cohen; Co-PIs Cameron Carter, Walter Schneider. 7/1/00 - 6/30/05; $1,542,510.

National Science Foundation, Large Scale Equipment Grant . Acquisition of a 3 Tesla MRI scanner for brain imaging. PI: Marcel Just; Co-PI: Walter Schneider 9/1/00-6/1/02; $1,893,000. (University of Pittsburgh/Carnegie-Mellon Consortium).

Department of Health and Human Services, PHS. Graduate education in the neural basis of cognition. PI: James McClelland; Co-PIs: Peter Strick, David Touretzky, Walter Schneider. 7/1/00 - 6/30/05; $772,108. (Carnegie Mellon University).

National Science Foundation, #DUE-9952631: Laboratory for undergraduate instruction and research in psychology. PI: Carey Ryan; Co-PI: Walter Schneider. 5/1/00 - 4/30/02; $29,712.

National Science Foundation,

IGERT #9987588. Innovative cross-disciplinary training in neuroscience and computation, PI: David Touretzky; Co-PI: Walter Schneider. 6/1/00 -5/31/05; $1,800,000. (Carnegie Mellon University).

James S. McDonnell Foundation, 98-3 CSEP EDU 02. Enhancing early literacy through tutors and computers. PI: Isabel Beck; Co-PIs: Bruce McCandliss and Walter Schneider. 6/1/98-5/31/02; $598,509.

National Science Foundation, LIS 9720348. Intervention strategies that promote learning: Their basis and use in enhancing literacy. PI: James McClelland. Co-PI with Carnegie Mellon University,. 10/1/97-5/31/01; $950,000.

University of Pittsburgh, Office of Child Development Seed Grant. Attentional dysfunction in children with Attention Deficit Disorder. 2/89‑9/89, $4,780 (Co‑PIs: William Pelham & Walter Schneider).

Office of Naval Research. Learning, teaching, and discovery in artificial intelligence and psychology. ( project leader awarded to Carnegie Mellon University; PI's A. Newell, H. Simon, & K. Van Lehn). 9/86‑8/91, $11,575,043.

National Science Foundation. An advanced scientific computer for simulating massively‑parallel models of high‑level cognitive processes. (Project leader awarded to Carnegie Mellon University; PI: J. McClelland). 8/86‑7/87, $300,000

**Conference Presentations Since 2000**

Schneider, W. and Zuccolotto, A. (2000, March). E-Prime: Hands-on tutorial for implementing your research designs. Computers in Psychology Conference (CIP), University of York, York, UK.

Schneider, W. and Fissell, K. (2000, March). Computerized methods for human brain mapping with fMRI. Computers in Psychology Conference (CIP), University of York, York, UK.

Schneider, W. (2000, March). Workshop: E-Prime. Computers in Psychology Conference (CIP), University of York, York, UK.

Vaughn, G., and Schneider, W. (2000, April). Event related functional MRI of the components of visual search. Cognitive Neuroscience Society, San Francisco, CA.

Schneider, W. (2000, May). Functional imaging of the modules of human learning. Fourth International Conference on Cognitive and Neural Systems, Boston University, Boston, MA.

Chein, J. and Schneider, W. (2000, June). An fMRI investigation of a common learning network: A test with verbal and nonverbal paired associates (poster #6851). Human Brain Mapping Conference. San Antonio, TX.

McCandliss, B.D., Bolger, D.J., and Schneider, W. (2000, November). Habituating visual features versus cognitive codes: An event-related fMRI study of abstract word representations in extrastriate cortex. (Abstract #464.5). Society for Neuroscience 30th Annual Meeting. New Orleans, LA.

Chein, J. and Schneider, W. (2001, March). Corresponding learning-related changes in brain activity associated with verbal and nonverbal versions of a paired-associate task (abstract #120B). Cognitive Neuroscience Society Meeting, New York, NY.

Wheeler, L., Chein, J., & Schneider, W. (2001, March). Functional magnetic resonance imaging of the role of feedback in learning (abstract #6C). Cognitive Neuroscience Society Meeting, New York, NY.

Schneider, W., Zuccolotto, A., & Cernicky, B. (2001, Nov.). Using package files to extend and upgrade experiment generators such as E-Prime. Presented at the 13th Annual Meeting of the Society for Computers in Psychology, New Orleans, LA.

Wheeler, L., Chein, J., & Schneider, W. (2001, March). Functional magnetic resonance imaging of the role of feedback in learning (abstract #6C). Cognitive Neuroscience Society Meeting, New York, NY.

Schneider, W., Zuccolotto, A., & Cernicky, B. (2001, November). Using package files to extend and upgrade experiment generators such as E-Prime. Presented at the 13th Annual Meeting of the Society for Computers in Psychology, New Orleans, LA.

Schneider, W. (2001, 2002 March). Integrated functional brain imaging workshop. (This involved about 10 hours of lectures and creation of a CD for distribution. The conference involved about 50 participants around the world.) University of Pittsburgh, Pittsburgh, PA.

Wheeler, E.Z, Chein, J.M., & Schneider, W. (2001 November). Feedback integration in learning: An event-related neuroimaging study. Society for Neuroscience , Los Angles, CA.

Wheeler, E.Z., Aizenstein, H., Schneider, W., Carter, C., & McClelland, J. (2002 April). Auditory sentence context modulates visual cortex activity during word recognition: An fMRI study. Cognitive Neuroscience Society, San Francisco, CA.

Schneider, W. & Chein, J. (2002, November). Automaticity and Domain-General Learning in Cortical Networks. Presented at the 43rd Annual Meeting of the Psychonomic Society, Kansas City, MO.

Drobyshevsky, A., Baumann, S., Ruth, R., Chein, J., & Schneider, W. (2002, June).  Normative data from an FMRI cognitive task battery. Published in special issue of Neuroimage (Neuro Image for the 8th Annual Human Brain Mapping Conference, Sendai, Japan.

Chein, J. & Schneider, W. (2003, April). An fMRI investigation of the role of domain-general cognitive resources in the transition from controlled to automatic processing. Cognitive Neuroscience Society, New York, NY.

Goldberg, R. F., Perfetti, C. A., & Schneider, W. (2003, April). What's 'Alive' in Semantic Knowledge?  Poster presented at the Cognitive Neuroscience Society, New York, NY.

Schneider, W., Chein, J., McHugo, M. (2003 November) CAP: A model of automatic/controlled processing in the brain. Presented at the 44th Annual Meeting of the Psychonomics Society, Vancouver, BC, Canada

Goldberg, R. F., Perfetti, C. A., & Schneider, W. (2004, April). Are abstract properties represented by the left inferior prefrontal cortex? Poster presented at the Cognitive Neuroscience Society, San Francisco, CA.

Hill, N. M. & Schneider, W. (2004, April). Learning to dual-task: An fMRI study of practice related changes in neural activity. Poster presented at the Cognitive Neuroscience Society, San Francisco, CA.

Goldberg, R.F. & Schneider, W. (2004 October). Controlled processing of semantic representations: Modality-specific and domain-general contributions. Poster presented at the Society for Neuroscience meeting, San Diego, CA.

Goldberg, R.F., Perfetti, C.A., Fiez, J.A., & Schneider, W. (2004, April). The role of left inferior prefrontal cortex in semantic processing: Are abstract properties represented? Poster presented at the Cognitive Neuroscience Society, San Francisco, CA.

Schneider, W, Hill, N, Chein, J, McHugo, M, Cole, M. (2004, Minneapolis, MN) Differentiating the control network of the human brain: Modules supporting attention, decision making, learning, and skilled performance. Psychonomics

Schneider, W., Boldger, DJ, Eschman, & Zuccolotto, A. (2004, November) ExpSpreadSheet – An Easy-to-Learn Method for Creating Complete Computerized Experiments Society for Computers in Psychology Minneapolis, MN

St. James, J, Eschman, A, Zuccolotto, A., Schneider, W., (2004, November) PsychMate: Providing Psychology Majors the Tools to do Real Experiments and Learn Empirical Methods. Society for Computers in Psychology Minneapolis, MN

Cole M.W., Schneider W. (2005, November). Less Working Memory, More Control: Greater BOLD Response to Overcoming Prepotency in Prefrontal and Parietal Cortices. Talk presented at Society for Neuroscience, Washington, D.C.

Hill, N.M., & Schneider, W. (2005, June). Changes in neural activation related to dual-task practice: Evidence for a domain general learning network. Poster presented the annual meeting for Organization for Human Brain Mapping, Toronto, Canada.

Schneider, W, Hill, N, & Cole, M., (2005, Toronto, Canada) Native and supported mode processing in attentional control network. Psychonomics

Schneider, W. (2005, Toronto, Canada) Three common misconceptions causing bad timing for most experimenters and how to correct for them. Society for Computers in Psychology

2005 Grant related presentations

ONR MURI Review (May, 2005, Pittsburgh) Mapping the automatic parallel computation with domain general control

ONR/DARPA Review (September 2005 DC) Biologically Informed Training

DARPA Project kickoff meeting (November 2005, San Diego). Mapping Brain Architectures and Processes Supporting Experience Based Cognition

Cole, M. W. & Schneider, W. (2006, March) Response conflict, stimulus-response processing, and task switching involve different components of a fronto-parietal network Cognitive Neuroscience Society

Schneider, W. Formisano, E., Goebel, R., Goldberg, R., Haxby, J., Hasson, U. Mitchell,T. Nichols, T., Siegle, G. (2006, June) Workshop - Competition: Inferring Experience Based Cognition from fMRI. Workshop for Organization for Human Brain Imaging Florence, Italy

Wheeler,M. Robert Goldberg, & Walter Schneider, The Representation Of Semantic and Experiential Knowledge In Multiple Cortical Areas And Medial Temporal Lobes (Psychonomics November 2007, Huston TX).

Cole, M. W, & Schneider W. Dissociation of anterior cingulate, dorsolateral prefrontal, and premotor cortex during a visual search task reveals specialized roles within a commonly activated fronto-parietal network. (OHBM June 2006 Florence, Italy)

Schneider, W. The Cognitive Neuroscience of Controlled & Automatic Processing (ONR Contractors Washington DC 2006 May).

Schneider, W. Mapping Brain Architectures and Processes Supporting Experience Based Cognition. DARPA Contractors meeting (August 2006, San Francisco, May, 2006 Boston, January 2006 Washington DC**).** Several talks including progress report, review of fMRI technology, virtual worlds and fMRI, DTI mapping of connective topology)

Schneider, W. The control and representation systems of the human brain providing cognitive synergy Key note presentation International Conference of Cognitive Modeling.Ann Arbor July 2007

2006 Grant related presentations

DARPA Project Planning review (January 2006, DC) – Magic and biology of human cognition

DAPRA Project Scenario Review (May 2006 Boston) Mapping the Chipset of the Brain

ONR MURI project review (May 2006, DC). Mapping the automatic parallel computation with domain general control

Schneider, W., Siegle, G., McHugo, M., Gemmer, L., Jones, D., Fissell, K., Koerbel, L., Suzuki, I., Jung, K., Goldberg, R., Wheeler, M., Cole, M., Hill, N. (June, 2006). [2006 Pittsburgh Brain Activity Interpretation Competition: Inferring experienced based cognition from fMRI data](http://www.mwcole.com/posters/HBM%202006%20EBC.pdf). Poster presented at Human Brain Mapping. Florence, Italy

Schneider, W. (May, 2006). The cognitive neuroscience of controlled & automatic processing. ONR Contractors Meeting. Washington, DC.

Schneider, W. Mapping brain architectures and processes supporting experience based cognition. DARPA Contractors meeting (August 2006, San Francisco, May, 2006 Boston, January 2006 Washington DC). Several talks including progress reports & reviews of project

Wheeler, M., Goldberg, R., Schneider, W. (2006, November) The representation of semantic and experiential knowledge in multiple cortical areas and medial temporal lobes. Psychonomics Society. Houston, TX).

Cole, M. & Schneider, W. (May 2007). [The cognitive control network: Integrated cortical regions with dissociable functions](http://www.mwcole.com/pubs/Cole,%20Schneider%202007%20-%20The%20Cognitive%20Control%20Network.pdf). NeuroImage. doi: [10.1016/j.neuroimage.2007.03.071](http://dx.doi.org/10.1016/j.neuroimage.2007.03.071)

Cole M., & Schneider, W. (June, 2007). Abstract decision making is mediated by the cognitive control network via ACC/pre-SMA to DLPFC connectivity. Poster to be presented at Human Brain Mapping. Chicago, IL.

[Schneider, W. Representation And Control Areas Of Human Cortex (Includes Introduction slides) Symposium Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/OHBM2007/Index.htm)

[Cole, M. W. & Walter Schneider Abstract Decision Making Is Mediated by the Cognitive Control Network via ACC Organization of Human Brain Mapping June 2007 Chicago, ILpre-SMA to DLPFC Connectivity Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Cole%20HBM%202007%20-%20v3a%20copy.pdf)

[Schneider, W. Greg Siegle, Maureen McHugo, & the EBC group 2007 Pittsburgh Brain Activity Competition (PBAIC): Interpreting subject-driven actions and sensory experience in a rigorously characterized virtual world Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Schneider%20ohbm%202007%20VR%20dynamic%20tracking%20Poster%20159%20Final.ppt)

[Pathak, S. Catherine Fissell, Kwan Jin Jung & Walter Schneider Diffusion Weighted MRI, Comparison Study of Reconstruction and Fiber Tracking Algorithms, and related tools Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Sudhir%20OHBM%202007%20Poster.ppt)

[Schneider,W Tom Yothers, Kyle Brauch, Lena Gemmer Cathrine Fissell, Maureen McHugo & Greg Siegle Dynamic VR exploration based fMRI with automatic visual object coding and brain activity mapping Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Schneider%20ohbm%202007%20VR%20dynamic%20tracking%20Poster%20159%20Final.ppt)

[Anita Barber, Andrea Ponting &Walter Schneider Task Switching Within and Between Semantic Representations: Retrieval Demands Depend on Decision Overlap Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/OHBM2007BarberPoster56x42.ppt)

[Kwan-Jin Jung, Sudhir Pathak & Walter Schneider Further Reliable Detection of Fiber Connection through Anterior and Posterior Commissure in Diffusion Tensor Imaging Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Jung-OHBM2007-DTI.ppt)

[Giancarlo Valente, Federico De Martino, Walt Schneider, Rainer Goebel & Elia Formisano Comparison of methods for fMRI brain reading: a study on generalization and interpretability.](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/Valente1%20Comparisionl.pdf) Organization of Human Brain Mapping June 2007 Chicago, IL

[Kwan-Jin Jung, & Walter Schneider Is the BOLD sensitivity reduced at a short TR in fMRI? A theoretical study Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/OHBM2007_Th271_Jung_TR.pdf)

[Kyung Hwa, Lee Walter Schneider, Maureen, McHugo, Philippe Goldin & Greg Siegle The neural structures associated with emotional valence and arousal induced by emotional movies Organization of Human Brain Mapping June 2007 Chicago, IL](http://schneider.lrdc.pitt.edu/SchneiderPublications/2007%20OHBM/LEEKH_HBMposter_2007_final_rev_061807.pdf)

Schneider, W. Carnegie Mellon University Cognitive Modeling course (October 2007) [Identifying the anatomy that supports the synergy of symbolic and connectionist computation](file:///D:/walts%27s%20Documents/%23%20Pitt/DEPT/Department%20Annual%20Reports/2010/Talk/07%20Walter%20Schneider%20CMU%20%20Dual%20Brain%20Systems%20function%20and%20anatomy.ppt)

Schneider, W. (July, 2007) [The Cognitive Control And Representation Systems Of The Human Brain: Producing the synergy of symbolic and connectionist processing](file:///D:/walts%27s%20Documents/%23%20Pitt/DEPT/Department%20Annual%20Reports/2010/Conferences/ICCM2007/Walter%20Schneider%20ICCM%2007%20Dual%20Brain%20Systems.ppt). International Conference of Cognitive Modeling Ann Arbor Michigan Keynote Address

Schneider, W. Carnegie Mellon University Cognitive Modeling course (October 2007) [Identifying the anatomy that supports the synergy of symbolic and connectionist computation](file:///D:/walts%27s%20Documents/%23%20Pitt/DEPT/Department%20Annual%20Reports/2010/Talk/07%20Walter%20Schneider%20CMU%20%20Dual%20Brain%20Systems%20function%20and%20anatomy.ppt)

Schneider, W. Regional Conference on MRI (September, 2007) Ann Arbor MI [Mapping Brain System Specialization and Connective Topology with fMRI and DSI](file:///D:/walts%27s%20Documents/%23%20Pitt/DEPT/Department%20Annual%20Reports/2010/Talk/Walter%20Schneider%20Michigan%20Talk%2001.ppt)

Schneider W. Cole, M, Goldberg R, Pathak, S. (November, 2007) [The Control And Representation Systems Of The Human Brain And Cognition](file:///D:/walts%27s%20Documents/%23%20Pitt/DEPT/Department%20Annual%20Reports/2010/Talk/Walter%20Schneider%20Psychonomics%2007%20Dual%20Brain%20Systems%201.0.ppt) Psychonomics Long Beach CA.

Schneider, W. Reverse Engineering of the Human Brain Workshop on Neuromorphic Computing Science Technology Expert Partnership, (April 2008) Washington DC

Cole M.W., Martins B., Schneider W. (April, 2008). [The Neural Basis of Rapid Instructed Task Learning](http://www.mwcole.com/posters/CNS2008RITLStudy.pdf). Poster presented at Cognitive Neuroscience Society, San Francisco, CA.

Pathak S., Martins B., Cole M.W., Schneider W. (April, 2008). [Anatomical and Functional Segmentation of the Cognitive Control Network: Supporting a preliminary cognitive control network connectome](http://www.mwcole.com/posters/CNS2008ResConn.pdf). Poster presented at Cognitive Neuroscience Society, San Francisco, CA.

Cole M.W., Pathak S., Schneider W. (April, 2008). [Medial Frontal Cortex Directs Attention along Multiple Pathways to Resolve Perceptual Decision Difficulty](http://www.mwcole.com/posters/CNS2008DCTStudy.pdf). Poster presented at Cognitive Neuroscience Society, San Francisco, CA.

Fernando Boada, Schneider, W2, Pathak, S; Martin B.; Davis, D.; & Bleichner, A.1 (2008) Integration of Diffusion Weighted Imaging and fMRI to identify differential fiber loss in pre-surgical planning. [SMRM Workshop on Frontiers of Magnetic Resonance:  From Tumor Cell to Cancer Patient](http://www.ismrm.org/workshops/Cancer_08/index.htm) Nice France (see <http://www.ismrm.org/workshops/Cancer_08/program.htm>)

Cole M.W., Bagic A., Kass R., Schneider W. (October, 2009). Rapid Task Learning as a Window into the Neural Basis of Executive Control. Poster presented at Society for Neuroscience, Chicago, IL.

Cole M.W., Schneider W. (June, 2009). From Symbols to Rules to Complex Behaviors: The Neural Basis of Rapid Instructed Task Learning. Poster presented at Human Brain Mapping, San Francisco, CA.

Cole M.W., Pathak S., Schneider W. (June, 2009). Identifying the Brain’s Most Globally Interactive Regions. Poster presented at Human Brain Mapping, San Francisco, CA

Schunn, C, Moss, J, Huppert, T, Schneider, W. (June, 2009)Real-time NIRS feedback may help improve self-explanation learning strategy use. Nanosymposium, Society for Neuroscience, Chicago, IL.

Pathak, S. Bruna Martins, B. , Schneider, W, Fernandez-Miranda, J. (June, 2009)White Matter Damage Assessment in Neurosurgical Planning Poster presented at Human Brain Mapping, San Francisco, CA

Verstynen, T, Jarbo, K, Pathak, S, Phillips, J. Schneider, W. Characterizing the topography of corticospinal pathways with high definition fiber tractography (June 2010) Poster presented at Human Brain Mapping, Barcelona Spain

Schneider, W. Mapping the Human Connectome Pittsburgh Brain Connectivity Competition 2009 (June 2009) Organization for Human Brain Mapping. San Francisco, CA. (see web link to presentations <http://pbc.lrdc.pitt.edu/?q=2009a-conference>)

Schneider W. Mapping the Human Brain Connectome for Actionable Reverse Engineering for Brain Treatment and Sensemaking. (July 2009) Intelligence Advanced Research Projects Activity (IARPA) conference Washington, D.C.

Fernandez-Miranda, J.C., Pathak, S., Engh, J., Kassam, A., Boada, F., Schneider, W. (presented by Schneider) (August 2009) High-Definition Fiber Tracking for Presurgical Planning in Minimally Invasive Endoscopic Brain Surgery. International Brain Mapping & Intraoperative Surgical Planning Society Boston MA.

Schneider, W., Pathak, S., Phillips, J.S., Cole, M.W. (November, 2009) High Definition Fiber Tracking Exposes Circuit Diagram for Brain Showing Triarchic Representation, Domain General Control, and Metacognitive Subsystems. Association for the Advancement of Artificial Intelligence Biologically Inspired Cognitive Architectures. Washington, D.C.

Schneider, W. (December 2009) 2009 IEEE ICDM PBC Brain Connectivity Challenge Symposium (presentation and chair). Institute of Electrical and Electronics Engineers International Conference on Data Mining. Miami, FL.

Schneider, W., Schunn, C., Pickering, M., Huppert, T., Tokowicz, N. (August 2009) Biologically Accelerated Learning Technology. DARPA Contractors Meeting.

Schneider, W. (September 2009) Brain Training Technology for US Army. Briefing of General Joe Martz, Fort Monroe, VA.

Schneider, W. (December 2009) Schneider Connectome DARPA Briefing of Amy Kruse & Tom Nugent, DARPA, Pittsburgh, PA.

Schneider, W. & Patak, S., Yeh, F. (September 2009) Mapping brain circuits with High Definition Fiber Tracking (HDFT) Data mining fiber tracts to identify the cables and chipset of the human brain. Data Mining Group, CMU, Pittsburgh, PA.

Schneider, W. & Patak, S. (December 2009) Roadmap for mapping the human Connectome. Intel Research, Pittsburgh, PA

Schneider, W., Pathak, S., Fernandez-Miranda, J., Bleicher, A., Davis, D., Boada, F, (September 2009) Mapping brain circuits with High Definition Fiber Tracking (HDFT) for medical imaging in Neurosurgery and TBI plus Human Connectome. Radiology Seminar Series.

Schneider, W., Patak, S., Phillips, J. (November 2009) Adventures in Research at LRDC Mapping Brain Architecture Actionable Neuroscience for Learning and Support. LRDC Senior Scientists Meeting.

Schneider, W. Brain Fitness Training with High Intensity Interval Training. (March 2010) Sustainment Decision Superiority Army TRADOC meeting

Bleicher, Andrew, Sudhir K. Pathak, Walter W. Schneider, , Mark R. Lovell, 4, John Norwig, and Joseph C. Maroon, Documenting white matter damage in sports related mild traumatic brain injury with diffusion and high definition fiber tracking (March 2010) American Society of Functional Neuroradiology.

Schneider, W. Brain Fitness Training Summary Duplicating the Army’s Physical Fitness Training Success   
in Brain Fitness Training (May 2010) Defense Language Institute Change of Commander Proceedings.

Schneider, W. High Definition Fiber Tracking in Neurosurgery & Traumatic Brain Injury: A Transforming Technology for Brain Imaging and Treatment of Brain Disorders (May 2010) GE MRI imaging R&D special presentation.

Schneider, W. Mapping the Human Connectome with High Definition Fiber Tracking: Statistical Challenges of a new data domain. (May 2010) Fifth International Workshop Statistical Analysis of Neuronal Data (SAND5)

Schneider, W. Mapping the Human Brain and Building Brain Fitness for Building Intelligence and Foreign Language Learning (May 2010) Invited address University of Maryland Center for Advance d Study of Language

Verstynen, T, Jarbo, K, Pathak, S, Phillips, J. Schneider, W. Characterizing the topography of corticospinal pathways with high definition fiber tractography (June 2010) Poster presented at Human Brain Mapping, Barcelona Spain.

Schneider, W. Quantifying Brain Connectivity, Strengthening Brain Fitness, Increasing Intelligence & Learning (July, 2010) Invited presentation General Dynamics.

Schneider, W. Commentary Brandeis Memory Meeting Need for Actionable Science (November 2010).

Phillips, J, Pathak, S, Verstynenn, T, W. Schneider (presented by Schneider). High-definition fiber tracking of human cortical eye fields Society of Neuroscience (Nov, 2010) Society for Neuroscience presentation

Schneider, W, S. Pathak, J. Fernandez-Miranda, D. Okonkwo, K. Jarbo, J. Engh, A. Mintz, F. Boada (Nov, 2010). Society for Neuroscience presentation

Pathak,S, Fang-Chen, Y, Schneider, W. HD fiber tracking: Non-invasive quantification of fiber tract volume Society for Neuroscience presentation

Schneider, W.& Pathak, S. High definition fiber tracking in neurosurgery & traumatic brain injury (Dec. 2010) NIH invited presentation to neuroimaging group.

Schneider, W. Sudhir Pathak , Timothy Verstynen, Jeff Phillips (U.Pittsburgh),   
 Juan Fernandez-Miranda (UPMC), Frank Yeh (CMU High Definition Fiber Tracking in Visual System to Quantify Human Connectivity and Aid Neurosurgery to Preserve Vision Multi-modal Neuroimaging Training Program (MNTP) (July 2010)

Schneider, W. Pittsburgh High Definition Fiber Tracking for Quantitative Mapping of cortical networks (Jan 2011) CNBC Neuroimaging Workshop)

Schneider, W. Non-invasive High Definition Fiber Tracking (HDFT) Mapping Human Brain Connectivity Applications to Neurosurgery and Traumatic Brain Injury. (March 2011). UPMC Radiology Department Seminar series

Schneider, W. A Forty Year Journey of Moving Psychology Forward: Chapter 5 – Mapping Brain Connectivity for Basic Science and Clinical Applications (April 2011) Keynote address Westminster University Eastern PA Undergraduate Psychology Conference.

Walter Schneider, Fernando Boada , J. Fernandez-Miranda, David Okonkwo. “Clinically Useful High Definition Fiber Tracking for TBI & Neurosurgery.” Quebec, Canada. June 28, 2011.

Sudhir Pathak, Timothy Verstynen, Kevin Jarbo, Walter Schneider, Juan Fernandez-Miranda. “High Definition Fiber Tracking (HDFT) in Neurosurgery & Traumatic Brain Injury” Cognitive Neuroscience Society, San Francisco. April 3, 2012

Kevin G. Jarbo, Timothy Verstynen & Walter Schneider. “High definition fiber tractography of the corpus callosum fiber pathways” Cognitive Neuroscience Society, San Francisco. April 3, 2011

Timothy Verstynen, Kevin Jarbo, Jeff Phillips, Sudhir Pathak & Walter Schneider. “High definition fiber tracking of corticostriatal projection subfields in vivo.” Cognitive Neuroscience Society, San Francisco. April 3, 2011

Walter Schneider, Jason Chein, Jingtao Wang & Randy Engle. “Replicating the Military Fitness Training in Brain Fitness Training.” ONR Contractors meeting, Washington, DC. June 2, 2011

Walter Schneider, Timothy Verstyne, Sudhir Pathak, Kate Fissell, Juan Fernandez-Miranda, Kevin Jarbo. “Quality High Definition Fiber Tracking Metrics To Interpret and Optimize Connectome Mapping Accuracy in Basic and Clinical Research.” Society for Neuroscience, Washington, DC. Nov 14, 2011

Sudhir Pathak & Walter Schneider. “Directional Axonal Volume: Novel metric to define connectivity in Human Brain.” Society for Neuroscience, Washington, DC. Nov 14, 2011

Walter Schneider. “Replicating the Military Fitness Training in Brain Fitness Training.” Army Command Briefing, Pittsburgh, PA. June 13, 2011

DoD Briefings on Traumatic Brain Injury DARPA November 2011; ONR November2011; CDMRP Nov & Dec 2011 , DVBIC April 4 2012

Walter Schneider. *A Forty Year Journey of Moving Psychology Forward: Chapter 5 – Mapping Brain Connectivity for Basic Science and Clinical Applications.* Keynote address, Westminster University Eastern PA Undergraduate Psychology Conference. April 2011.

Walter Schneider. *Replicating the Military Fitness Training in Brain Fitness Training*. Center for the Advanced Study of Learning Working Memory Conference, Washington, DC. August 2011.

Walter Schneider. *Clinically Actionable Fiber Tracking in Neurosurgery & Traumatic Brain Injury: MRI Tract Visualizations with Quality Exceeding Microdissection.* Neuroscience for Neurosurgeons (RUNN) conferences, Woods Hole conference, November 4 2011.

Walter Schneider. *High Definition Fiber Tracking (HDFT): Mapping Human Brain’s Anatomical Circuits and Track Growth Programs With Applications to Genetic Wiring Disorders, Neurosurgery and Traumatic Brain Injury*; colloquium, Boston Children’s Hospital. November 2011.

Walter Schneider, Natasha Tokowicz, Jingtao Wang. *Replicating the Military Fitness Training in Brain Fitness Training.* Defense Language Institute Foreign Language Center Training Workshop, Monterey, CA. Dec 20, 2011.

Walter Schneider, David Okonkwo, Juan Fernandez-Miranda, Robert Friedlander, Fernando Boada. *High Definition Fiber Tracking (HDFT): Mapping Human Brain Anatomical Circuits With Applications to Traumatic Brain Injury and Neurosurgery*. Walter Reed, Bethesda, MD. Dec 5, 2011.

Walter Schneider. *High Definition Fiber Tracking (HDFT): Mapping Human Brain’s Anatomical Circuits and Track Growth Programs With Applications to Genetic Wiring Disorders, Neurosurgery and Traumatic Brain Injury.* Paul Allen Institute, Seattle, Washington. July 21, 2012.

Walter Schneider, David Okonkwo, Juan Fernandez-Miranda, Robert Friedlander, Fernando Boada. *High Definition Fiber Tracking (HDFT): Mapping Human Brain Anatomical Circuits With Applications to Traumatic Brain Injury.* Management of the Neurotrauma Patient, Pittsburgh, PA. April 1, 2012.

Walter Schneider. *Attention Control Brain Dynamics and Anatomical Connective Circuitry*,*A Festschrift for Richard M Shiffrin*. Bloomington, IN. May 7 2012.

Walter Schneider, David Okonkwo. *Detecting Visualizing & Quantifying TBI Damages with High Definition Fiber Tracking*. Society for Brain Mapping and Therapeutics, Toronto, CA. June 2, 2012.

Walter Schneider & David Okonkwo Quantifying TBI White Matter Damage in Individual Patients with High Definition Fiber Tracking Military Health System Research Symposium (MHSRS) Aug 13 2013, Fort Lauderdale FL

DoD Briefings on Traumatic Brain Injury ONR June 2012/2013; CDMRP Jan, March, April 2012 , DVBIC April 4 2012

Walter Schneider. *High Definition Fiber Tracking (HDFT): Mapping Human Brain’s Anatomical Circuits and Track Growth Programs With Applications to Genetic Wiring Disorders, Neurosurgery and Traumatic Brain Injury.* Paul Allen Institute, Seattle, Washington. July 21, 2012.

Walter Schneider. *Clinically Actionable Fiber Tracking in Neurosurgery & Traumatic Brain Injury: MRI Tract Visualizations with Quality Exceeding Microdissection.* Neuroscience for Neurosurgeons (RUNN) conferences, Woods Hole conference, November 2013.

Walter Schneider, David Okonkwo. *Detecting Visualizing & Quantifying TBI Damages with High Definition Fiber Tracking*. Society for Brain Mapping and Therapeutics, Toronto, CA. June 2, 2012.

Walter Schneider. High Definition Fiber Tracking (HDFT): Mapping Human Brain Anatomical Circuits With Applications to Traumatic Brain Injury Management of the Neurotrauma Patient Resident Forum Pittsburgh April 15 2012.

Walter Schneider. Appling Quantitative Methods to Map Brain Systems of Attention Control and Anatomical Connective Circuitry for Basic Research and Clinical Assessment. Shiffrin Festschrift Symposium 05/09/12

Walter Schneider & David Okonkwo Quantifying TBI White Matter Damage in Individual Patients with High Definition Fiber Tracking Society for Brain Mapping Therapeutics Toronto June 3, 2012

Walter Schneider & Jason Chein Replicating the Military Fitness Training in   
Brain Fitness Training Alexandria VA June 4

Walter Schneider. Congress of Neurological Surgeons Oct 9,2012 Chicago IL Speaker for Special Course II - Functional Neuroimaging: Where Do We Go from Here?

Walter Schneider. Quantifying TBI White Matter Damage in Individual Patients with High Definition Fiber Tracking (HDFT) New York University Oct 23, 2012 NYC

Walter Schneider. High Definition Fiber Tracking (HDFT) - Providing Non-Invasive Personalized Brain Circuit Diagrams & Tract Integrity Reports In Traumatic Brain Injury, Neurosurgery, Autism & Basic Research McGovern Institute MIT, Oct. 31, 2012. Boston

Walter Schneider. High Definition Fiber Tracking (HDFT) an MRI Biomarker for Brain Anatomical Connection Disorders in TBI, Neurosurgery & Autism Jan 24, 2013 Philadelphia PA

Sudhir Pathak & Walter Schneider High Definition Fiber Tracking – A Pipeline of Computational Methods To Map White Matter Tracts and Support Clinically Viable Tract Analysis Nationl Institute of Health March 19, 2013.

Walter Schneider Medical Grand Rounds Talks HDFT in Clinical Applications - Children’s Hospital Pittsburgh Autism Center (Jan 2), UPMC Concussion Clinic (May 2), UPMC Rehabilitation Clinic (Panther Rounds seminar on April 17)

Walter Schneider HDFT creating accurate personalized circuit diagrams. Symposium High

Definition Fiber Tracking, Mapping Brain Tracts and Brain Trauma and Surgical Procedures Society for Brain Mapping & Therapeutics May 13 Baltimore

Okonkwo, D., Schneider, W. HDFT in TBI Seeing and Quantifying TBI. Symposium High

Definition Fiber Tracking, Mapping Brain Tracts and Brain Trauma and Surgical Procedures Society for Brain Mapping & Therapeutics May 13 Baltimore

Schneider W., Okonkwo D., Presson, N., Jarbo, K., Benso, S., Borrasso, A, Beers, S., Morrow,

L., Pathak, S. High Definition Fiber Tracking of Blast mTBI – Making the Invisible

Wounds of War Visible with Patient-Targeted Treatment. Military Health Science Research Symposium. August 12, 2013 Fort Lauderdale FL

Schneider W. Okonkwo, Jarbo, K; Wagner, L; Bird, W, Presson, Baum,

E, Chmura, J; Pathak, S Training and Support Programs to Learn, Implement, and Support

HDFT TBI Analysis and How to Join the Group of Intake Sites. Military Health Science

Research Symposium. August 12, 2013 Fort Lauderdale FL

Pathak, S., Schneider, W; Krishnaswamy, D; Fissell, K; Chmura1, J; Okonkwo, D. Technical

Methods of How HDFT Analysis Provides Interpretable Quantification and Visualization of TBI Anatomical Brain Military Health Science Research Symposium. August 12, 2013 Fort Lauderdale FL

Okonkwo, D. Schneider, W., Presson, N., Chmura, J., Pathak, S. Puccio, A.; High Definition

Fiber Tracking TBI Patient Clinical Report – visualizing TBI. Military Health Science

Research Symposium. August 12, 2013 Fort Lauderdale FL

Schneider, W., Okonkwo, D., Presson, N., Puccio, A.; Bird, W., Pathak, S. 2. 5 day workshop

on HDFT based TBI analysis at Baylor Medical Center with 18 attendees.

Schneider, W., Okonkwo, D., Presson, N., Beers, S., Morrow, L., Borasso, A., Piccio, S.,

Quantifying White Matter Structural Integrity with High Definition Fiber Tracking in Traumatic Brain Injury Symposium International Neurotrauma Society Budapest Hungary

Schneider, W., Okonkwo, D., Presson, N., Chmura, J., Borasso, S., Piccio, A. Quantifying An

iPad Case Report Viewer for High-Definition Fiber Tracking for TBI Patients and Their Clinicians. International Neurotrauma Society Budapest Hungary

Schneider, W., Okonkwo, D., Presson, N., Chmura, J. TEAM-TBI Mobile environment.

Cognitive Rehabilitation Meeting TEAM-TBI April 2, 2104.

Schneider W., Pathak, S., Okonkwo D. , Fernandez-Miranda J. Fiber Tracking Based on

Diffusion MRI: Challenging Present and Potentially Transformative. Future. National

Academy of Science Institute of Medicine August 22, 2013 Washington DC Developing

Standards for Diffusion Magnetic Resonance Imaging (dMRI) A Meeting of Experts

Schneider. W & Chein J. Replicating the Military Fitness Training in

Brain Fitness Training Office of Naval Research Project Review June 10, 2013 Washington

DC.

Schneider, W. High Definition Fiber Tracking (HDFT) to See Anatomical TBI Brain Damage &

Enable Targeted Treatment & Rehabilitation. Invited Talk Radiology Department Navy

Medical Center San Diego September 11, 2013

Schneider, W. High Definition Fiber Tracking (HDFT) an MRI Biomarker for Brain Anatomical

Connection Disorders in TBI, Neurosurgery & Autism Invited talk Radiology Dept. Loma

Linda University Medical Center. September 13, 2013. Loma Linda CA

Schneider, W., Pathak, S., Okonkwo, D., Fernandez-Maranda, J. High Definition Fiber Tracking,

Mapping Brain Tracts and Brain Trauma and Surgical Procedures John Hopkins KIRBY

Institute June 12, 2013 Baltimore MD

Schneider, W. Current Progress in MRI-BasedConnectivity Neuroscience for Neurosurgeons

(RUNN) conferences, Woods Hole conference, November October 31.2013.

Schneider, W. & Okonkwo, D. Visualizing and Quantifying TBI Anatomical Tract Loss with

High Definition Fiber Tracking Diffusion Imaging Baylor Medical Center November 13

Houston TX

Schneider, W. Making Brain Anatomical, Transmitter and Functional Networks Wounds Visible

and Targeting Repair DARPA Subnets Briefing Nov 22, 2014 Washington DC

Schneider, W. TEAM-TBI Pittsburgh & NICoE Mqy 3, 2013 National Intrepid Center for

Excellence of TBI May 3, Bethesda MD.

Schneider, W. & Okonkwo D. High Definition Fiber Tracking Imaging of TBI Army Conference

on Brain Imaging January 30, 2014 Fort Fredrick MD

Schneider, W. Fiber Tracking Based on Diffusion MRI: Challenging Present and Potentially

Transformative Future American College of Radiology Workshop of advancing diffusion

imaging February 21, 2014 Washington DC.

Schneider, W., & Okonkwo, D.. Neuroanatomical substrates of TBI outcomes. Invited Plenary

session International Neurotrauma Society Budapest Hungary

Schneider, W., Pathak, S., Okonkwo, D., Fernandez-Maranda, J. High Definition Fiber Tracking

(HDFT) an MRI Biomarker for Brain Anatomical Connection Disorders in TBI,

Neurosurgery & Autism Research Round Table Colloquium Department of Communication

Science and Disorders Feb 12, 2014 Pittsburgh PA

Schneider, W., Pathak, S., Okonkwo, D., Fernandez-Maranda, J. High Definition Fiber Tracking,

Mapping Brain Tracts and Brain Trauma and Surgical Procedures Stanford Psychology

Neuroimaging Program April 9, 2014 Palo Alto CA Baltimore MD

Schneider, W., Pathak, S., Okonkwo, D., Fernandez-Maranda, J. High Definition Fiber Tracking,

Mapping Brain Tracts and Brain Trauma and Surgical Procedures Center for Functional

MRI (CFMRI), UC San Diego March 15, 2013 UCSD San Diego CA.

Schneider, W., Okonkwo, D.O., Chmura, J., Presson, N., Benso, S., Puccio, A.M. An iPad case

report viewer for high-definition fiber tracking for TBI patients and their clinician. (2014)

International Neurotrauma Society Budapest, Hungary.

Okonkwo, D.O., Schneider, W., Presson, N., Beers, S., Marrow, L., Borasso, A., Puccio, A.M.

Quantifying white matter injury in traumatic brain injury with high definition fiber tracking.

(2014) Neurotrauma, San Francisco, California.

Schneider, W., Okonkwo, D.O., Presson, N., Bird, W., Wagener, L., Krishnaswamy, D., Hachey,

R., Fissell, K., Pathak, S., Beers, S., Morrow, L., Puccio, A., Benso, S. TBI: Diagnosis of

White Matter Damage with High Definition Fiber Tracking in Patients with Chronic TBI

(2014) Medical Health Scientific Research Symposium Fort Lauderdale FL

Okonkwo, D.O., Schneider, W., Pathak, S., Jarbo, K., Presson, N., Puccio, A., Benso, S., Borrasso,

A., Beers, S., Morrow, L. High Definition Fiber Tracking TBI Patient Clinical Report –

visualizing TBI (2014) Medical Health Scientific Research Symposium, Fort Lauderdale FL.

Schneider, W., Pathak, S., Kim, T., Fissell, C., Hachey, R., Krishnaswamy, D., Bird, W., Presson,

N., Wagener, L. (2014) Fast Optimized Multishell Imaging for High Definition Fiber Tracking

of White Matter Tracts. Pittsburgh MR Imaging Community Retreat

Pathak, S.K., Fissell, K., Krishnaswamy, D., Aggarwal, S., Hachey, R., Schneider, W. Diffusion

reconstruction by combining Spherical Harmonics and Generalized Q-Sampling

Imaging. ISMRM June 2015

Presson, N., Beers, S.R. Morrow, L., Wagener, L., Bird, W., Van Eman, G., Penderville, J.,

Benso, S., Puccio, A., Okonkwo, D.O., Schneider, S. Quantitative White Matter Analysis

with High Definition Fiber Tracking (HDFT) Predicts Neuropsychological Test

Performance in Chronic TBI. Neurotrauma Jun 28, 2015

Presson, N., Minhas, D., Mountz, J., Fissell, C., Laymon, C., Price, J., Puccio, A., Schneider, W.

Okonkwo, D.O. PET Imaging with Pittsburgh Compound B of Amyloid Deposition in

White Matter in Chronic TBI: An Exploratory Analysis Neurotrauma Jun 28, 2015

Schneider, W., Boss, M., Wilde, E., Provenzale, J., Pathak, S., Zuccolotto, A., Evangelou, I.,

York, G., Taylor, B., & Okonkwo, D. A Novel Universal Phantom and Diffusion Tensor

Imaging Standardization to Provide Cross-Vendor and Site-Calibrated Quantification of

TBI. Medical Health Sciences Research Symposium August 16, 2015

Presson, N., Beers, S.R., Morrow, L., Bird, W., Van Eman, G., Tang, R., Monsour, M., Benso,

S., Puccio, A., Okonkwo, D., & Schneider, W. Neuropsychological Test Scores

Consistently Relate to Quantitative MR Diffusion Imaging Metrics in High B-Value

Multishell Imaging. Medical Health Sciences Research Symposium August 16, 2015

Schneider, W., Boss, M., Wilde, E., Provenzale, J., Pathak, S., Zuccolotto, A., Evangelou, I.,

York, G., Taylor, B., & Okonkwo, D. A Novel Universal Phantom and Diffusion Tensor

Imaging Standardization to Provide Cross-Vendor and Site-Calibrated Quantification of

TBI. Medical Health Sciences Research Symposium August 16, 2015 VA Traumatic

Brain InjuryState-of-the-Art Conference Washington DC

Schneider, W., & Okonkwo, D.O. Clinical MRI TBI Challenge and Opportunity. International

Traumatic Brain Injury Research Network (IBIRN) organizational meeting Oct 14, 2015

Duke University.

Schneider, W., Wilde, E., Boss, M., Provenzale, J., Evangelou, I. CENC Study 39: Diffusion

Tensor Imaging Standardization using Novel MR Diffusion Phantoms

Tools for Calibration and Advancement Clinical TBI Imaging Fort Lauderdale Aug 15,

2016

Tollefson S, Eagle SR, Puccio AM, Agoston DV, Collins MW, Kontos AP, Schneider W, Okonkwo DO. Pre-Intervention Blood Hyperphosphorylated Tau and Ubiquitin C-Terminal Hydrolase-L1 Concentrations are Associated with Magnitude of Symptom Improvement following Targeted Intervention in Patients with Chronic Traumatic Brain Injury. Poster presentation at Military Health Science Research Symposium. September 2022.

Eagle SR, Tollefson S, Puccio A, Agoston DV, Collins M, Kontos A, Schneider W, Okonkwo DO. Ubiquitin C-Terminal Hydrolase-L1 and von Willebrand Factor as Potential Predictive Blood Biomarkers for Patients with Psychological Issues from Chronic Traumatic Brain Injury. Poster presentation at Military Health Science Research Symposium. September 2022.

Schneider, W., Pathak, S., Pomiecko, K., Okonkwo, D., Fissell, C., Dzikiy, J., Zuccolotto, A., Wilde, E.

MRI brain health monitoring enabling normative diagnostics through phantom calibrated MRI.,

Poster Presentation at Military Health Research Symposium, Sept 2022

Schneider, W., Pathak, S., Wu, Y., Watson, A., Zhao, Y., Zor, F., Kulahci, Y., Gorantla, V. Fasciculus

Axonal Connective Tissue Multiscale Imaging Connectome (FACTMIC) Mapping of Porcine and

Human Optic Nerve for Accurate Connectome Mapping and Optic Nerve Tissue Health at Viable

Cost. Poster Presentation at Military Health Research Symposium, Sept 2022

Sudhir Pathak, Yijen Wu, Vijay Gorantla, Fatih Zor, Yalcin Kulahci, Alan Watson, Yongxin Zhao,

Walter Schneider. Fasciculus Axonal Connective Tissue (FACT) Mapping of Porcine Optic Nerve for

Accurate Connectome Mapping at Viable Cost. Poster Presentation at ISMRM Conference, London,

England May 2022.

**Technical Reports:**

Schneider, W., & Fisk, A. D. (1980). Independence of foveal retinal locus and visual detection paradigm (Tech. Rep. No. 8001). Champaign: University of Illinois, Human Attention Research Laboratory. Also in JSAS, 1981, 11.

Schneider, W., & Fisk, A. D. (1980). Dual automatic and control processing, can it be done without cost? (Tech. Rep. No. 8002). Champaign: University of Illinois, Human Attention Research Laboratory. Also in JSAS, 1981, 11.

Eberts, R., & Schneider, W. (1980). The automatic and control processing of temporal and spatial patterns(Tech. Rep. No. 8003). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., & Fisk, A. D. (1980). Visual search improves with detection searches and declines with non‑detection search (Tech. Rep. No. 8004). Champaign: University of Illinois, Human Attention Research Laboratory. Also in JSAS, 1981, 11.

Schneider, W., & Fisk, A. D. (1980). Degree of consistent training and the development of automatic processing (Tech. Rep. No. 8005). Champaign: University of Illinois, Human Attention Research Laboratory. Also in JSAS, 1981, 11.

Fisk, A. D., & Schneider, W. (1980). Controlled and automatic processing during tasks requiring sustained attention (Tech. Rep. No. 8006). Champaign: University of Illinois, Human Attention Research Laboratory. Also in JSAS, 1981, 11.

Fisk, A. D., & Schneider, W. (1980). On the learning of distractors during controlled and automatic processing (Tech. Rep. No. 8007). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., & Eberts, R. (1980). Automatic processing and the unitization of two features (Tech. Rep. No. 8008). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W. (1982). Automatic/controlled processing concepts and their implications for the training of skills (Tech. Rep. No. HARL‑ONR‑8101). Champaign: University of Illinois, Human Attention Research Laboratory.

Ackerman, P. L., Schneider, W., & Wickens, C. D. (1982). Individual differences and time‑sharing ability: A critical review and analysis (Tech. Rep. No. HARL‑ONR‑8102). Champaign: University of Illinois, Human Attention Research Laboratory.

Fisk, A. D., & Schneider, W. (1982). Category and word search: Generalizing search principles to complex processing (Tech. Rep. No. HARL‑ONR‑8103). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., Dumais, S. T., & Shiffrin, R. M. (1982). Automatic/control processing and attention (Tech. Rep. No. HARL‑ONR‑8104). Champaign: University of Illinois, Human Attention Research Laboratory.

Fisk, A. D., Derrick, W. L., & Schneider, W. (1982). The use of dual task paradigms in memory research: A methodological assessment and an evaluation of effort as a measure of levels of processing (Tech. Rep. NO. HARL‑ONR‑8105). Champaign: University of Illinois, Human Attention Research Laboratory.

Fisk, A. D., & Schneider, W. (1982). Task versus component consistency in the development of automatic processes: Consistent attending versus consistent responding (Tech. Rep. No. HARL‑ONR‑8106). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., & Fisk, A. D. (1982). Attention theory and mechanisms for skilled performance (Tech. Rep. No. HARL‑ONR‑8201). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., & Fisk, A. D. (1982). Automatic category search and its transfer: Automatic process semantic filtering (Tech. Rep. No. HARL‑ONR‑8202). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W., & Fisk, A. D. (1982). Processing with and without long‑term memory modification: Attention, level of processing, and word frequency (Tech. Rep. No. HARL‑ONR‑8203). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W. (1984). Training high performance skills: Fallacies and guidelines (Final Report No. HARL‑ONR‑8301). Champaign: University of Illinois, Human Attention Research Laboratory.

Ackerman, P. A., & Schneider, W. (1984). Individual differences in automatic and controlled information processing (Tech. Rep. No. HARL‑ONR‑8401). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W. (1984). Toward a model of attention and the development of automatic processing (Tech. Rep. No. HARL‑ONR‑8402). Champaign: University of Illinois, Human Attention Research Laboratory.

Schneider, W. (1986). Building automatic component skills for air intercept control (Contract No. DAAL03‑86‑D‑001). Department of Defense Research Roundtable.

Schneider, W. & Regian, W. (1989). Developing automatic component skills for air intercept control (LRDC Tech. Rep.). Pittsburgh: University of Pittsburgh, Learning Research and Development Center.

Levine, J. M. & Schneider, W. (1989). Feedback effects in computer-based skill learning (LRDC Tech. Rep.). Pittsburgh: University of Pittsburgh, Learning Research and Development Center.

Schneider, W. (1992). Developing automatic components for complex tasks (LRDC Tech. Rep.). Pittsburgh: University of Pittsburgh, Learning Research and Development Center.