

# Department of Psychiatry

Website: <http://www.psychiatry.wustl.edu>

## Research Electives

### Psychiatry Research Electives

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences.

**Note to Students:** There are always a number of research projects in the Department of Psychiatry. For additional information, contact Dr. Rubin at 314-362-2462.

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#### Andrey Anokhin, PhD

Genetics of the Brain, Behavior and Psychopathology  
Central Institute for the Deaf (CID) Building  
660 S. Euclid Ave., Suite 1  
Phone: 314-286-2201  
[andrey@wustl.edu](mailto:andrey@wustl.edu)

This research elective is intended for students interested in cognitive neuroscience, biological psychiatry, and behavior genetics. Dr. Anokhin's laboratory investigates the links between genes, brain and behavior in order to better understand the complex etiology of mental disorders. Our major focus is on the externalizing spectrum of psychopathology characterized by deficits in inhibitory self-regulation and related psychopathologies, including ADHD, conduct disorder and addictive behaviors. We are particularly interested in the intermediate phenotypes (endophenotypes) mediating genetic risk for addiction, such as impulsivity, risk taking, and abnormal reward processing. In our laboratory-based studies with human volunteers, including twins, we investigate individual differences in brain activity using the recording of brain oscillations (event-related brain potentials) and functional magnetic resonance imaging (fMRI). For example, an ongoing longitudinal study of adolescent twins explores the developmental and genetic determinants of brain activity related to reward and punishment processing, inhibitory control of behavior, and risk taking to identify prospective predictors of substance abuse and associated behavioral problems. In another ongoing study, we examine twins who are discordant for adolescent marijuana use in order to identify the consequences of substance abuse for the brain, cognition and emotion and to distinguish them from preexisting risk factors. Interested students will be able to learn a variety of methods used in these studies, such as the recording and analysis of neural activity, including electroencephalogram (EEG) and event-related brain potentials (ERPs), MRI scanning, startle response, autonomic measures, the administration of neuropsychological and behavioral tests, and the statistical analysis of data. The format of this research elective may include the following: (1) directed reading; (2) participation in laboratory experiments involving human subjects; (3) analysis of existing data from various research projects; and (4) designing and

piloting new behavioral experiments. Qualifications include reliability and responsibility, the ability to commit a specified amount of time per week and to work a schedule that can be negotiated on an individual basis, and good computer skills.

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#### Deanna M. Barch, PhD

Cognitive and Affective Neuroscience of Schizophrenia and Depression  
4525 Scott Avenue, Suite 1153K  
Phone: 314-747-2160

Students may participate in the conduct of clinical studies of schizophrenia and depression. Involvement in clinical studies can include training and experience in interviewing psychiatric patients, or it may involve gaining experience in the techniques of assessing cognitive and emotional function using behavioral and brain imaging methods.

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#### Laura Jean Bierut, MD

Renard Building  
Phone: 314-362-2544

This research elective will focus on analyzing data from high-risk studies of smoking and other addictions. Students will have the opportunity to examine genetic and environmental factors that place some individuals at risk for developing nicotine, alcohol and other substance dependence and that protect others from the development of these disorders.

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#### Kevin J. Black, MD

4525 Scott Ave., Room 2205  
Phone: 314-362-5041  
[kevin@wustl.edu](mailto:kevin@wustl.edu)

Students will participate in ongoing studies of brain imaging, movement disorders or neuropsychiatric illnesses. Degree of participation will relate to the student's available research time, skills and interest. Visit the laboratory's webpage for examples of past research.

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#### Ginger E. Nicol, MD

Taylor Avenue Building, Suite 121  
Phone: 314-362-5154

We are part of the Healthy Mind Lab in the department of psychiatry, and our clinical research broadly focuses on increasing longevity and quality of life in children, adolescents, adults and older adults. Our specific projects focus primarily on obesity treatment and prevention, and they include clinical and genetic studies of psychotropic medications known to cause weight gain, like antipsychotic agents. We are interested in developing and testing medication-assisted psychotherapies with agents like ketamine and psilocybin for weight management and disordered eating. We also employ mobile health (mHealth) tools for collecting data and for delivering healthy lifestyle and behavioral weight loss treatments, and we use precision functional and molecular brain imaging techniques to study individual, brain-

based mechanisms of illness and treatment response. This elective offers the student a broad exposure to clinical research protocols, including protocols in adults and children. Students will have an opportunity to focus on a particular project of interest.

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