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Scientific Areas of Integrated Review Groups (IRGs)

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Brain Disorders and Clinical Neuroscience IRG [BDCN]

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Anterior Eye Disease Study Section [AED]

Formerly VISA[\[AED Roster\]](#)

The Anterior Eye Disease [AED] Study Section reviews basic, applied, and clinical research applications to investigate the cornea, lens, conjunctiva, ciliary body, trabecular meshwork, and lacrimal glands. Applications reviewed by AED address anatomical, physiological, molecular and genetic aspects of the anterior eye related to normal and pathological processes. In addition, applications to study retinal ganglion cell function in association with glaucoma are reviewed by AED.

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Specific areas covered by AED:

- Disorders of the anterior segment of the eye, including the following: glaucoma; cataracts; dry eye; congenital and developmental abnormalities; inflammatory and infectious diseases; hereditary and degenerative diseases; and ocular manifestations of systemic diseases, tumors, injury, and trauma
- Experimental development and pathology of the eye
- Fundamental ophthalmic research, including: anatomy; physiology; genetics; cell biology, molecular biology; biochemistry; physical chemistry; immunochemistry
- Transport of ions and fluids through ocular membranes
- Development of normal and experimentally or pathologically altered eye tissues, excluding the retina/choroid
- Pathogenesis, prevention, and treatment of ocular infections
- Unique aspects of ocular immunology and inflammation
- Cell and tissue culture models, animal models, and clinical studies of the anterior eye

AED has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarttags" />BDCN IRG:

- Although components of the anterior eye share the neural crest as a common tissue of origin with some components of the nervous system, AED has limited shared interest with other study sections within BDCN.

AED has the following shared interests outside the BDCN IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** AED has shared interests with the BCMB IRG regarding studies that focus on the structure-function of lens proteins (e.g., crystallins), cell to cell communication via gap junction proteins (connexins), and ionic homeostasis of the cornea maintained by membrane transport proteins of the corneal epithelium and endothelium. The BCMB IRG may review studies focusing on protein sequencing, or the theoretical and computational aspects of protein chemistry. The AED Study Section focuses more on the functional consequences of protein structure related to lens or corneal clarity and preservation of visual acuity.
- **With the Biology of Development and Aging [BDA] IRG:** AED has shared interests with BDA regarding studies that focus on ocular (globe) or lens development. The BDA IRG may review studies focusing on the fundamental mechanisms of organogenesis, control of cell cycle, cell signaling and apoptosis, response to stress and tissue repair. Similar topics may be reviewed by AED when they involve the unique requirements associated with optical clarity in the eye.
- **With the Bioengineering Sciences and Technologies [BST] IRG:** Applications that focus on the design, development, and introduction of technology for gene and drug delivery in the eye could be assigned to the BST IRG, while applications focused on mechanisms and functional implications associated with gene and drug delivery into the tissues of the anterior eye may be assigned to AED.
- **With the Cell Biology [CB] IRG:** Studies of the retina/choroid are reviewed mainly by the CB IRG. However, studies focused on immunology, inflammation, and infections are more appropriate for AED, as are studies on glaucoma, when retinal ganglion cells are primarily involved.
- **With the Emerging Technologies and Training in Neurosciences IRG [ETTN]:** Studies reviewed by ETTN may focus on development of technologies for use in vision research. These may be small business studies or basic research. If a study is directed at development of a technology it is likely that ETTN is more appropriate for review, while if the focus of the study is the application of the technology for basic or clinical research, then AED would be more appropriate for review.
- **With the Genes, Genomes and Genetics [GGG] IRG:** AED has shared interests with the GGG IRG regarding studies dealing with the ocular diseases associated with complex genetic traits, for example glaucoma and various corneal dystrophies. The GGG IRG may review studies focusing on computational genetics, mechanisms for the regulation of gene expression and chromosome maintenance. The AED Study Section may review studies focusing on the regulation or patterns of gene expression that are fundamental for normal vision, or on the genetic mutations that underlie pathological processes leading to visual impairment (e.g., glaucoma, cataract, corneal dystrophies).
- **With Health of the Population [HOP] IRG:** HOP and AED share interest in the epidemiology of ocular disease. HOP reviews applications that focus on broader socio-environmental contexts in which health and health-related behavior are embedded and in which the interaction of these socio-environmental factors with the health and health-related behavior of individuals and populations are examined. AED may review applications which examine the epidemiology of diseases of the anterior eye.
- **With the Infectious Diseases and Microbiology [IDM] IRG:** IDM study sections reviews applications dealing with basic biology of microbes, multicellular parasites and their vectors, infections and diseases caused by these agents. AED shares an interest in these areas. When an application focuses on the infectious agent or general aspects of its infectious process, it is probably best suited to IDM. However, if the studies focus on aspects of the pathogenesis of the agent that are unique to ocular infections, then AED is more appropriate for review.
- **With the Immunology [IMM] IRG:** AED has shared interests with the IMM IRG regarding studies that focus on the immune system's role in host interactions with infectious agents, tumor cells and transplanted cells. The AED Study Section may review studies that involve the unique ocular responses to infectious or autoimmune processes that impact the cornea (keratitis), ocular conjunctiva (conjunctivitis), uvea (uveitis), ocular immune privilege or ocular glandular tissue (dry eye syndrome, blepharitis, Sjogren's syndrome).
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** The IFCN IRG reviews studies that emphasize the normal visual process or that involve techniques that are primarily used by visual physiologists or visual psychophysicists. In addition, eye movement studies, both clinical and theoretical, may be reviewed by IFCN as well as psychophysical studies of glaucoma. AED may be more appropriate if the focus is on the anatomical, physiological, molecular and genetic aspects of the anterior eye related to normal and pathological processes.
- **With the Oncological Sciences [ONC] IRG:** The ONC IRG reviews applications involving basic, translational, and clinical investigations that encompass cancer prevention, initiation, promotion, progression, diagnosis and treatment. AED has shared interest in these areas, reviewing applications that specifically deal with the aspects of tumors that are unique to their pathogenesis in the eye.

Acute Neural Injury and Epilepsy [ANIE]

[\[ANIE Roster\]](#)

Acute Neural Injury and Epilepsy (ANIE)
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Formerly part of CND

The Acute Neural Injury and Epilepsy [ANIE] Study Section addresses the anatomical, cellular and functional basis of neural disease and injury across the life span. Emphasis is on the neural substrate, functional consequences [sensory/motor, behavioral, pathophysiological], rehabilitation, and the development of therapeutic strategies for acute neurological disorders, particularly stroke/ischemia, epilepsy, spinal cord injury and traumatic brain injury. This Study Section considers patient-oriented research and animal models.

Specific areas covered by ANIE:

- Anatomical, neuropathological, neuroimaging, electrophysiological, functional mapping, and autopsy studies to monitor the onset, progression and treatment of brain and spinal cord disease and injury; therapeutic approaches and clinical studies; cerebral blood flow and metabolism in the context of clinical neuroimaging.
- Functional and anatomical changes in sensory and motor systems associated with the initiation, progression, and treatment of neural injury.
- Changes in functional domains that are consequences of disease and injury; strategies for therapeutic intervention.
- Cellular, anatomical, and systems-based studies of changes in the neural substrate and function of brain and spinal cord in response to disease and injury.
- Recovery of function/rehabilitation; beneficial and compensatory changes in the neural substrate in response to clinical interventions; neurological and functional evaluation of neural prostheses, electrical/magnetic stimulation, behavioral and pharmacological interventions, and physical therapy.
- Evaluation of pharmacological, transplantational, surgical, electrophysiological, physical or behavioral interventions to reduce loss, enhance function, and facilitate recovery.

**ANIE has the following shared interests within the xml:namespace prefix = "st1" ns =
 "urn:schemas-microsoft-com:office:smarttags" />BDCN IRG:**

- **With Brain Injury and Neurovascular Pathologies [BINP]:** Studies focused on genetic, molecular and cellular basis of acute brain injury and related vascular pathologies are reviewed in BINP. ANIE would be more appropriate to review the clinical facets of the same.
- **With Clinical Neuroimmunology and Brain Tumors [CNBT]:** CNBT reviews studies focused on immune, inflammatory and vascular mechanisms, while ANIE reviews the anatomical and functional basis of neural disorders and injury, including functional imaging studies.
- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** Brain imaging studies that focus on specific neurotransmitter systems and receptors are reviewed in CNNT, while more general brain imaging studies of neuropathological pathways and brain dysfunction are reviewed in ANIE.
- **With Developmental Brain Disorders [DBD]:** DBD reviews studies of neurodevelopmental disorders, especially when the focus is on unique aspects of the developing nervous system. Neuroanatomical and functional disease processes that are common to children and adults may be reviewed in ANIE.
- **With Clinical Neuroscience and Neurodegeneration [CNN]:** CNN reviews studies focusing on chronic and neurodegenerative conditions. ANIE reviews studies that focus on acute nervous system injury and epilepsy. Cognitive impairment associated to acute injury may be reviewed in ANIE.

ANIE has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies that focus primarily on behavior and behavioral approaches to neural injury and disease may be reviewed in the BBBP IRG. Studies that focus mainly on the anatomical and functional basis of the disorders could be reviewed in ANIE.
- **With the Biology of Development and Aging (BDA) IRG:** The BDA IRG has shared interests with ANIE in neurological diseases, their therapeutic approaches and clinical studies. Studies with a primary focus on specific neurological diseases could be reviewed in ANIE. Studies focused on multiple system manifestations of neurological diseases occurring specifically in aging human or animal subjects and that may require integrated experimental, genetic or observational approaches may be more appropriate for BDA.
- **With the Cardiovascular Sciences [CVS] IRG:** Studies dealing with cerebral circulation and hemodynamics may be assigned to the CVS IRG, while those focusing on cerebral blood flow and metabolism in the context of neuroimaging for analysis of brain and spinal cord disease or injury or the functional consequences of ischemia, hypoxia, stroke on brain or spinal cord function could be assigned to ANIE.
- **With the Emerging Technologies and Training in Neuroscience [ETTN] IRG:** Studies on brain disorders and treatment are shared interests with ETTN. If the focus is on basic genetic mechanisms associated with neural dysfunction or technological developments, assignment could be to ETTN. If the focus is a clinical study or a response to drugs in model systems, assignment could be to ANIE.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with ANIE with respect to diseases of the nervous system. When the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies and gene discovery using complex or novel technologies, the application may be reviewed in the GGG IRG. Studies that include genetics but focus primarily on the anatomical, functional and pathologic basis of the neural injury may be reviewed in ANIE.
- **With the Health of the Population (HOP) IRG:** HOP and ANIE have shared interests in neural injury and epilepsy, including stroke and TBI. Studies dealing with descriptive and analytic aspects of behavioral, environmental or genetic risk and/or protective factors in population-based or clinically-ascertained samples could be reviewed by the HOP IRG, while studies on the neural basis of these disorders in patients/small populations could be reviewed within ANIE.
- **With the Integrative, Functional, and Cognitive Neurosciences [IFCN] IRG:** Studies that focus primarily on understanding the neurobiological basis of sensory/motor processes may be reviewed in the IFCN IRG. Studies that focus on the sensory/motor consequences of neurological disorders or neural injury could be reviewed in ANIE.
- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** ANIE has shared interests within the MOSS IRG with respect to research on recovery and rehabilitation. While MOSS focuses broadly on physical therapy, physiology, and non-neuronal systems, ANIE has a particular focus on the neural basis of rehabilitation and recovery.
- **With the Molecular, Cellular, Developmental Neuroscience [MDCN] IRG:** MDCN and ANIE share a common interest in neurologic diseases. However, MDCN focuses largely on basic cellular and molecular processes whereas ANIE reviews studies related to the cellular, anatomical and functional aspects of these diseases within a clinical context.
- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** ANIE and the SBIB IRG review studies dealing with functional brain imaging; however, ANIE may review those studies using imaging as a tool to study neurological disorders or injury or their treatment. SBIB may review studies concerning the development and evaluation of imaging procedures. SBIB is appropriate for studies with focus on the development of imaging technology. However, if the proposed research is more oriented toward the application of imaging techniques for studying injury or their treatment, ANIE may be more appropriate to review the application.

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Brain Injury and Neurovascular Pathologies Study Section [BINP]

[\[BINP Roster\]](#)

The Brain Injury and Neurovascular Pathologies [BINP] Study Section addresses the genetic, molecular and cellular basis of acute brain injury across the life span. This includes studies of neuronal cell death, the blood brain barrier and related vascular pathologies. Relevant disorders include stroke, ischemia, hypoxia, traumatic brain injury and intracerebral

hemorrhage. This Study Section mainly reviews studies of animal models. To a lesser extent, the Study Section reviews patient-oriented research and in vitro systems.

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Specific areas covered by BINP:

- Development of potential therapeutics associated with molecular, cellular, and neurochemical changes in the brain following acute injury; analysis of autopsy material; therapeutic approaches to prevent or treat neuropathological damage, including identification of novel targets and pharmacological interventions.
- Animal and tissue culture models of acute brain injury and damage; generation of relevant transgenic models; models to evaluate treatments to limit or prevent cell injury and death after acute injury to the brain.
- Metabolic abnormalities after acute brain injury; neuron viability; oxidative and free radical metabolism; mitochondrial function; glial metabolism; secondary inflammation; interaction of environment, drugs, metabolites, genetics and age on cell dysfunction and neuropathology after vascular, hypoxic or ischemic injury.
- Abnormal protein and macromolecular metabolism and function; synthesis, assembly, processing, trafficking, structure/function, regulation, and degradation of proteins and other macromolecules implicated in acute brain injury.
- Mechanisms of cell degeneration following acute brain injury; neurotoxicity and mechanisms of cell death; the role of oxidative stress, free radicals, and regulation of intracellular calcium levels.
- Identification and expression of genes and proteins associated with acute injury to the nervous system.

BINP has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarttags" />BDCN IRG:

- **With Clinical Neuroscience and Disease [ANIE]:** Both CNN and BINP review studies that deal with brain injury. ANIE reviews studies on the anatomical and functional basis of injury, while BINP reviews studies of acute brain injury at the cellular and molecular level.
- **With Cell Death in Neurodegeneration [CDIN]:** CDIN and BINP review studies which focus on the genetic, molecular, and cellular basis of neurodegeneration. BINP focuses on acute brain injury and disorders related to ischemic or hypoxic neuronal cell death, the blood brain barrier, and related vascular pathologies, while CDIN reviews studies of chronic brain disorders in which neurodegeneration is a primary component of the pathological process.
- **With Clinical Neuroimmunology and Brain Tumors [CNBT]:** BINP and CNBT review studies that deal with inflammatory processes in the brain. While CNBT reviews studies of neural disorders and injury that focus on immune, inflammatory and vascular mechanisms related to pathophysiological processes such as multiple sclerosis, BINP may be more appropriate for studies where inflammation is secondary to a pathophysiological process associated with acute injury.
- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** CNNT and BINP review studies that propose to investigate abnormalities in neurotransmitter systems. CNNT reviews studies that focus on the neurotransmitter function, neurotrophins, regeneration and stem cell or gene therapy for the replacement for specific neurotrophic or neurotransmitter systems, while BINP evaluates studies of the ischemic or hypoxic cell death mechanisms that may be related to these same systems.
- **With Developmental Brain Disorders [DBD]:** DBD and BINP share interest in molecular and cellular processes of brain function and development. DBD reviews studies of neurodevelopmental disorders, especially when the focus is on unique aspects of the developing nervous system. BINP would be more appropriate for review of those studies in which the molecular and cellular processes to be studied are associated with acute brain injury that are common to both children and adults.

BINP has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG and the Risk, Prevention and Health Behavior [RPHB] IRGs:** Studies with a primary focus on behavior and behavioral approaches, including outcomes, prevention and coping, could be reviewed in the BBBP or RPHB IRGs. Research that uses behavioral methods as indices of neurological recovery and experimental models of neurological disorders related to acute brain injury may be reviewed in BINP.
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a focus on multiple system manifestations of age-related neurological diseases such as Alzheimer's disease could be reviewed within the BDA IRG, while studies with a primary focus on mechanisms and outcomes of neurological disorders related to acute brain injury

could be reviewed in BINP.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Studies that focus on the design, development, and introduction of technology for gene and drug delivery in the nervous system could be assigned to the BST IRG, while studies focused on the mechanisms and functional implications associated with gene and drug delivery into the central nervous system may be assigned to BINP.
- **With the Cell Biology [CB] IRG:** Studies focusing on basic cell processes or an emerging cell biology approach may be assigned to the CB IRG, while studies on the same processes within the context of neurological disorders related to acute brain injury may be assigned to BINP.
- **With the Cardiovascular Sciences [CVS] IRG:** Studies dealing with cerebral circulation and hemodynamics primarily affecting the cardiovascular system may be assigned to the CVS IRG, while those focusing on cerebral blood flow and the cellular and molecular consequences of ischemia, hypoxia and stroke on brain may be assigned to BINP.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with BINP with respect to an interest in neurological disorders related to acute brain injury. However, when the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the application could be assigned to the GGG IRG. BINP may be more appropriate for studies within the context of mechanisms and outcomes following acute brain injury.
- **With the Health of the Population [HOP] IRG:** HOP IRG may review studies dealing with acute brain injury, but with the focus on descriptive and analytical epidemiologic aspects of these neurologic disorders, while studies that focus primarily on cellular and molecular aspects of acute brain injury may be reviewed in BINP.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** The IFCN IRG generally reviews studies dealing with normal aspects of brain function, while BINP reviews studies dealing with injury and resultant alterations of that normal function. For example, IFCN and BINP share common interests in the blood-brain barrier, however, if the focus of the studies is to elucidate the role of the blood-brain barrier as it relates to normal physiologic processes, then the application may be assigned to IFCN, but if the studies deal with the results of acute injury to the blood brain barrier, the application will go to BINP. Furthermore, IFCN reviews studies focused on assessment of cognitive function in a physiological context while BINP may use the same approaches to study cognitive decline and recovery in the context of brain injury.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG reviews studies on the basic cellular and molecular mechanisms of diseases of the nervous system. If the context is basic neuroscience, then MDCN may be a more appropriate locus for review. If the primary focus is on neurological disorders related to acute brain injury and their pathophysiology, then BINP may be more appropriate.

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Cell Death in Neurodegeneration Study Section [CDIN]

Formerly BDCN-3

[\[CDIN Roster\]](#)

The Cell Death in Neurodegeneration [CDIN] Study Section addresses the genetic, molecular, and cellular basis of chronic neural disorders across the life span. This includes studies of neuronal cell death and protein and macromolecular function in neurodegenerative disease. Relevant disorders include neurodegenerative diseases such as Alzheimer's, Parkinson's, Huntington's disease, and ALS, spinal cord injury, dystonia/ataxia, and neuropathies. This Study Section mainly reviews studies of animal models. To a lesser extent, the Study Section reviews patient-oriented research and in vitro systems.

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Specific areas covered by CDIN:

- Pathology and clinical interventions; molecular, cellular, and neurochemical changes in human brain associated with neurodegeneration; analysis of autopsy material; experimental therapeutic approaches and clinical trials to prevent or treat neuropathological damage, including gene therapy and tissue and cell transplantation.
- Tissue culture and animal models of neurodegeneration or trauma; generation of relevant transgenic models; development of models to evaluate treatments to limit or prevent cell injury and death.
- Metabolic abnormalities in degeneration; neuron viability; oxidative and free radical metabolism; mitochondrial function; glial cell metabolism; secondary inflammation; interaction of genetics, environment, drugs, metabolites, and age on cell dysfunction and neuropathology.
- Abnormal protein and macromolecular metabolism and function; synthesis, assembly, processing, trafficking, structure/function, regulation, and

degradation of proteins and other macromolecules implicated in neurodegenerative diseases.

- Mechanisms of cell degeneration; neurotoxicity and mechanisms of cell death in neurodegenerative diseases; the role of intracellular calcium, glutamate excitotoxicity, metals, oxidative stress and free radicals, amyloid and paired helical filaments.
- Genetic basis of neurodegeneration, including identification and expression of genes, genomic screening, and linkage analysis.

CDIN has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarttags" />BDCN IRG:

- **With Clinical Neuroimmunology and Brain Tumors [CNBT]:** CNBT and CDIN review studies of neuropathological processes related to inflammation. Studies reviewed by CNBT have as their focus neural disorders and injury for which immune and inflammatory mechanisms are principal components. CDIN may be more appropriate for studies where inflammation is secondary to pathophysiological processes underlying neurodegeneration.
- **With Clinical Neuroscience and Neurodegeneration [CNN]:** Both CNN and CDIN review studies that deal with chronic neurodegeneration. CNN reviews studies on the anatomical and functional basis of neurodegenerative disorders, while CDIN reviews studies of chronic neurodegeneration at the cellular and molecular level.
- **With Brain Injury and Neurovascular Pathologies [BINP]:** CDIN and BINP review studies which focus on the genetic, molecular, and cellular basis of neurodegeneration. CDIN reviews studies that study chronic brain disorders in which neurodegeneration is a primary component of the pathological process, while BINP focuses on acute brain injury and disorders related to ischemic or hypoxic neuronal cell death, the blood brain barrier, and related vascular pathologies.
- **With Developmental Brain Disorders [DBD]:** DBD and CDIN review studies proposing studies of neurodegenerative processes. DBD reviews neurodevelopmental disorders, including those that have a neurodegeneration component, especially when the focus is on unique aspects of the developing nervous system. CDIN reviews studies that deal with molecular and cellular processes associated with aspects of neurodegeneration that are common to children and adults.
- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** CNNT reviews studies that focus primarily on abnormalities in specific neurotransmitter systems, neurotrophins, regeneration and stem cell or gene therapy for the replacement for specific neurotrophic or neurotransmitter systems, while CDIN reviews studies of the specific cell death mechanisms that are related to these same systems.

CDIN has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] and the Risk, Prevention and Health Behavior [RPHB] IRGs:** Studies with a primary focus on behavior and behavioral approaches, including outcomes, prevention and coping, could be reviewed in the BBBP or RPHB IRGs. Studies reviewed in CDIN may use these same behavioral methods as indices of neurological recovery and experimental models of neurodegenerative disorders, but the methods are not the focus of the studies reviewed in CDIN.
- **With the Biology of Development and Aging [BDA] IRG:** BDA and CDIN share interest in certain age-related neurological diseases, for example, Alzheimer's disease. Studies with a focus on multiple system manifestations of age-related neurological diseases could be reviewed within the BDA IRG, while cellular and molecular changes associated with these diseases could be reviewed in CDIN.
- **With the Bioengineering Sciences and Technologies [BST] IRG:** Studies that focus on the design, development, and introduction of technology for gene and drug delivery in the nervous system could be assigned to the BST IRG, while studies focused on the mechanisms and functional outcomes associated with that drug or gene delivery into the central nervous system for treatment of chronic neurodegenerative diseases may be assigned to CDIN.
- **With the Cell Biology [CB] IRG:** Studies focusing on basic cell processes including cell death or an emerging cell biology approach to explore cellular death processes may be assigned to the CB IRG, while studies on the cellular mechanism of neurodegenerative disorders may be assigned to CDIN.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with CDIN with respect to an interest in neurodegenerative disorders. When the focus of the proposed studies is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the application could be assigned to the GGG IRG. CDIN may be more appropriate for studies within the context of mechanisms and outcomes related to neurodegeneration.
- **With the Health of the Population [HOP] IRG:** HOP reviews studies dealing with descriptive and analytical epidemiologic aspects of a broad range of neurologic disorders, including those reviewed by CDIN. However, CDIN reviews studies that focus primarily on basic cellular and molecular mechanisms of these disorders.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** The IFCN IRG generally reviews normal aspects of brain function, while the study sections within review research relating to abnormal and pathological states. Studies that focus primarily on neurodegenerative disorders are more appropriate within CDIN. For example, IFCN and CDIN share common interests in the motor system. If the focus of a study is to elucidate specific neural substrates of motor function, then the application may be assigned to IFCN. Studies that focus primarily on the cellular and molecular pathophysiology of motor disorders related to neurodegeneration may be more appropriate for CDIN.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG reviews studies on the basic cellular and molecular mechanisms of diseases of the nervous system. For example, MDCN and CDIN have shared interests in the analysis of cloned gene products involved in cell death. If the context is basic neuroscience, then MDCN may be a more appropriate locus for review. If the primary focus is on neurodegenerative disorders and their pathophysiology, then CDIN may be more appropriate.

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Clinical Neuroimmunology and Brain Tumors Study Section [CNBT]

Formerly BDCN-4

The Clinical Neuroimmunology and Brain Tumors [CNBT] Study Section addresses central and peripheral nervous system disorders, including neuromuscular disorders, and injury across the life span where the focus is on infections, immune or inflammatory mechanisms. The scope of investigations ranges from in vitro and animal models to human studies and patient-oriented research. Examples of relevant disorders include: multiple sclerosis, myasthenia gravis, infectious diseases of the nervous system, spinal cord and brain injury, inflammatory neuropathies and myopathies, stroke, multi-infarct dementia, prion disease, subarachnoid hemorrhage, and nervous system tumors.

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Specific areas covered by CNBT:

- Immunological processes involved in neural disease or injury; inflammatory neuropathies and autoimmune disorders; experimental models; immunological responses that affect neural function, including neuroimmune cross-reactivity; cytokine and chemokine production and action
- Infectious diseases specific to the nervous system or which produce prominent neurological symptoms [parasitic, fungal, bacterial, viral [but not HIV], prion]; viral neurotropism
- Role of inflammatory processes in neural disease or injury; post-ischemic or post-traumatic inflammatory processes; reactive microglia and astrocytes; healing and regenerative processes
- Vascular processes of primary or secondary involvement in neural disorders, including stroke and trauma, vasculitis, edema, and vascular malformations; cerebral blood flow and metabolic state, especially in the context of dementia, epilepsy, diabetes, or brain tumors; vascular effects of drugs or other exogenous agents We propose to delete this area, since the vascular processes are now covered primarily by BINP
- Role of the blood-brain barrier in the etiology and progression of neural disease; traumatic brain injury; delivery of therapeutic agents, such as pharmacological compounds, viral gene therapy, and cell transplantation
- Brain ventricles and cerebrospinal fluid, including production, metabolism, circulation and regulation of CSF; screening of CSF for diagnostic purposes; intracranial pressure and ventricular space; hydrocephalus and shunts
- Detection, diagnosis, etiology, mechanism, and treatment of neuroblastomas, gliomas, and tumors of the cerebral vasculature

CNBT has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarttags" />BDCN IRG:

- **With Clinical Neuroscience and Neurodegeneration [CNN]:** CNN reviews studies on the anatomical and functional basis of chronic neurodegenerative disorders and injury, while CNBT reviews studies focused on immune or inflammatory mechanisms of the same disorders.
- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** CNBT may examine studies on how immune or inflammatory mechanisms alter neurotransmitter function, but if the focus of the application is on the neurotransmitter, the application is more likely to be reviewed in CNNT.
- **With Cell Death in Neurodegeneration [CDIN]:** CDIN and CNBT share interest in the contribution of inflammation to neurological disorders. CDIN may review studies where inflammation is secondary to some other cellular pathophysiology, as in ischemia, however, if inflammatory processes are the principal focus of the studies, CNBT may be more appropriate for review.
- **With Clinical Neuroscience and Disease [ANIE]:** ANIE reviews studies on the anatomical and functional basis of injury and epilepsy, while CNBT reviews studies that may focus on inflammation or immunology components of these same neural disorders.
- **With Developmental Brain Disorders [DBD]:** DBD and CNBT may review studies dealing with infectious agents or inflammation. DBD would be more appropriate for studies involving the particular vulnerability of the fetal, neonatal, or pediatric brain to infectious agents and inflammation, while CNBT would review studies generally dealing with pathogenic processes of infectious agents or inflammatory processes.
- **With Neural Basis of Psychopathology, Addictions and Sleep Disorders [NPAS]:** NPAS has particular expertise to review studies of addictive, behavioral, cognitive and emotional disorders; while CNBT reviews studies focused on immune or inflammatory mechanisms that might be associated with the same disorders.

CNBT has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies where the primary focus is on behavior and behavioral approaches may be reviewed in the BBBP IRG. Studies that focus mainly on the immune, inflammatory, or vascular mechanisms of the neural disorder or injury may be reviewed in CNBT.
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a focus on multiple system manifestations of age-related neurological diseases such as Alzheimer's disease could be reviewed within the BDA IRG, while the role of neural inflammatory processes in these diseases could be reviewed in CDIN.
- **With the Cell Biology [CB] IRG:** Studies focusing on basic cell processes or an emerging cell biologic approach may be assigned to the CB IRG, while studies that focus mainly on the cell biology of immune or inflammatory mechanisms of the neural disorder or injury may be reviewed in CNBT.
- **With Emerging Technologies and Training in Neurosciences [ETTN]:** Studies on brain disorders and treatment are a shared interest. ETTN may review studies that deal with development of new technologies for diagnosis or treatment of infections or inflammatory processes in the nervous system, while CNBT would be appropriate for review of studies proposing to apply these new technologies for diagnosis or treatment.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with CNBT with respect to diseases of the nervous system. When the focus of proposed research is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the GGG IRG may be more appropriate. For example, studies focusing on basic strategies for development of viral gene therapy systems may be reviewed by GGG, while CNBT may be more appropriate when studies focus on the results of such gene therapy on the immune or inflammatory mechanisms of the nervous system.
- **With the Health of the Population [HOP] IRG:** Studies dealing with descriptive and analytical epidemiologic aspects of various neurologic disorders including those resulting from immune or infectious diseases, stroke and epilepsy may be reviewed within the HOP IRG, while studies that

focus primarily mainly on the immune or inflammatory mechanisms of the neural disorder or injury may be reviewed in CNBT.

- **With the Infectious Diseases and Microbiology [IDM] IRG:** Studies that focus on infective agents such as parasite, bacteria, fungi, viruses and prions would likely be assigned to the IDM IRG, while those focusing on the neurological manifestations of parasitic, bacterial, fungal, viral or prion diseases of the nervous system could be assigned to CNBT.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** In general, BDCN study sections review studies relating to abnormal and pathological states, while the IFCN IRG reviews normal aspects of brain function. While IFCN may review studies that elucidate specific neural substrates of motor, sensory or cognitive function, CNBT may review studies with a primary focus on the immune or inflammatory mechanisms of the neural disorder or injury.
- **With the Immunology [IMM] IRG:** IMM and CNBT share interest in basic and clinical studies of neuroimmune reactions. The IMM IRG may be more appropriate for studies with a primary focus on cellular immunology or antigen processing, but CNBT may review studies that have a primary focus on the interplay between the immune system and the nervous system, neuromuscular interactions, or neural function. For example, studies on the contribution of the immune system to such neurological diseases as myasthenia gravis and multiple sclerosis may be reviewed in CNBT.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG reviews studies on the basic cellular and molecular mechanisms of diseases of the nervous system, however studies that focus on the immune or inflammatory mechanisms of the specific neural disorder or injury may be reviewed in CNBT.
- **With the Oncological Sciences [ONC] IRG:** Studies that address general aspects of cancer mechanisms may be reviewed in ONC, but studies focused on neuropathology, neurophysiology, functional outcome, and other nervous system consequences resulting from tumor activity may be reviewed in CNBT.

[TOP](#)

Clinical Neuroscience and Neurodegeneration Study Section [CNN]

Clinical Neuroscience and Neurodegeneration Study Section [CNN]xml:namespace prefix = "o" ns = "urn:schemas-microsoft-com:office:office" />

Formerly part of CND

The Clinical Neuroscience and Neurodegeneration [CNN] Study Section addresses the anatomical, cellular and functional basis of neural disease across the life span. Emphasis is on the neural substrate, functional consequences [cognitive, sensory/motor, behavioral, pathophysiological] and the development of therapeutic strategies for chronic/neurodegenerative disorders, particularly Alzheimer's disease and other dementias, Parkinson's disease, ALS, dystonia/ataxia, and neuropathies. This Study Section considers patient-oriented research and animal models.

Specific areas covered by CNN:

- Anatomical, neuropathological, neuroimaging, electrophysiological, functional mapping, and autopsy studies to monitor the onset, progression and treatment of brain disorders; therapeutic approaches and clinical studies in the context of clinical neuroimaging
- Functional and anatomical changes in sensory and motor systems associated with the initiation, progression, and treatment of neural disorders
- Changes in learning, memory, language, attention, behavior, and other functional domains that are consequences of disease; strategies for therapeutic intervention
- Cellular, anatomical, and systems-based studies of changes in the neural substrate and function of brain in response to disease
- Evaluation of pharmacological, transplantational, surgical, physical or behavioral interventions to reduce loss, enhance function, and facilitate recovery

CNN has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarts" />BDCN IRG:

- **With Cell Death in Neurodegeneration [CDIN]:** CDIN reviews studies of the molecular and cellular basis of neural disorders. CNN reviews studies that focus on the neuroanatomical substrate and functional consequences. CDIN may be more appropriate for studies of gene, cell and tissue transplantation, especially if the focus is on molecular and cellular mechanisms.
- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** Brain imaging studies that focus on specific neurotransmitter systems and receptors should be reviewed in CNNT, while more general brain imaging studies of

neuropathological pathways and brain dysfunction should be reviewed in CNN.

- **With Developmental Brain Disorders [DBD]:** DBD reviews studies of neurodevelopmental disorders, especially when the focus is on unique aspects of the developing nervous system. Neuroanatomical and functional disease processes that are in common between children and adults may be reviewed in CNN.
- **With Neural Basis of Psychopathology, Addictions and Sleep Disorders [NPAS]:** Although CNN may review studies on dementias, NPAS has particular expertise to review studies of psychiatric co-morbidities associated with dementia.
- **With Acute Neural Injury and Epilepsy [ANIE]:** ANIE reviews studies that focus on acute nervous system injury and epilepsy. CNN reviews studies that focus on chronic and neurodegenerative conditions. Chronic sequelae or secondary neurodegeneration resulting from acute insults may be reviewed in CNN.

CNN has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies that focus primarily on behavior and behavioral approaches to neural diseases may be reviewed in the BBBP IRG. Studies that focus mainly on the anatomical and functional basis of the neural disorder could be reviewed in CNN.
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a focus on multiple system manifestations of age-related neurological diseases may be reviewed within BDA, while functional and neuroanatomical changes associated with specific diseases could be reviewed in CNN.
- **With the Emerging Technologies and Training in Neuroscience [ETTN] IRG:** Studies on brain disorders and treatment are shared interests. If the focus is basic molecular neurogenetics associated with neural dysfunction or technological developments, assignment could be to ETTN. If the focus is a clinical study or a response to drugs in model systems, assignment could be to CNN.
- **With the Health of the Population (HOP) IRG:** HOP and CNN share interest in neurodegenerative conditions. Studies dealing with descriptive and analytic epidemiologic aspects of various neurological conditions or with a focus on behavioral, environmental or genetic risk and/or protective factors in population-based or clinically-ascertained samples could be reviewed by the HOP IRG, while studies on the neural basis of these disorders in patients/small populations could be reviewed within CNN.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** IFCN and CNN share common interests in understanding the neurobiological basis of cognitive or sensory/motor function. When the focus is to elucidate specific normal cognitive processes or the neural substrates of sensory/motor function, then studies may be assigned to IFCN. Studies that focus largely on neurological disorders and their treatment may be reviewed within CNN.
- **With the Genes, Genomes and Genetics [GGG] IRG:** GGG has shared interests with CNN with respect to an interest in diseases of the nervous system. However, when the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies and gene discovery using complex or novel technologies, the application may be reviewed in the GGG IRG. Studies that have a genetic component but focus primarily on the anatomical, functional and pathologic basis of the neural disorder may be reviewed in CNN.
- **With the Molecular, Cellular, Developmental Neuroscience [MDCN] IRG:** MDCN and CNN share a common interest in neurologic diseases. However, MDCN focuses largely on basic cellular and molecular processes whereas, CNN reviews studies related to the cellular, anatomical and functional aspects these diseases within a clinical context.
- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** CNN has shared interests within the MOSS IRG with respect to research on recovery and rehabilitation. While MOSS has broad expertise in physical therapy, physiology, and non-neuronal systems, CNN has particular expertise in the neural basis of rehabilitation and recovery as well as disease that effect motor control (e.g. Parkinson's disease, Huntington disease, essential tremor).
- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** CNN and the SBIB IRG review studies dealing with functional brain imaging; however, CNN may review those studies using imaging as a tool to study neurological disorders or injury or their treatment. SBIB may review studies concerning the development and evaluation of imaging procedures. SBIB is appropriate for studies with focus on the development of imaging technology. However, if the proposed research is more oriented toward the application of imaging techniques for studying injury or their treatment, ANIE may be more appropriate to review the study.

Formerly BDCN-2

[\[CNNT Roster\]](#)

The Clinical Neuroplasticity and Neurotransmitters [CNNT] Study Section addresses the area of neural disease and injury across the life span that focuses on neurotransmitter or neurotrophic function including associated receptors. This includes studies of plasticity, regeneration, and therapeutic strategies. Relevant disorders include stroke/ischemia, neurodegenerative diseases, epilepsy, spinal cord injury, traumatic brain injury, dystonia/ataxia, and neuropathies. Studies primarily involve animal models although patient-oriented research may be reviewed.

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Specific areas covered by CNNT:

- Neurotransmitter synthesis, regulation, release, degradation, and inactivation; abnormalities of receptor number, distribution and function; abnormalities of synaptic physiology; functional imaging of particular neurotransmitter pathways; role of growth factors, neurotrophins, and neurohormones
- Pharmacological studies; diagnostics and therapeutic strategies involving receptor agonists and antagonists; pharmacological effects on synaptic physiology and second messenger pathways; neurotrophins and neurohormones
- Mechanisms of degeneration, plasticity and recovery; neuropathological and compensatory changes in neurotransmitter function; role of trophic factors; therapeutic interventions □ new animal models of epilepsy, spinal cord injury and Parkinson □ s disease
- Therapeutic approaches involving neurotransmitter function; pre-clinical and clinical studies of drugs, gene therapy, cell and tissue transplantation, including stem cells, and drug delivery across the blood-brain barrier, the use of imaging techniques to investigate time course of therapeutic approaches such as gene and stem cells delivery.

CNNT has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarts" />BDCN IRG:

- **With Clinical Neuroscience and Neurodegeneration [CNN]:** Both CNN and CNNT may review studies that examine neurodegeneration and neurotransmitters. CNN reviews translational and clinical studies including treatment and diagnosis of neurodegenerative disorders that involve neurotransmitters, while CNNT reviews studies that focus on the functions neurotransmitter their receptors.
- **With Clinical Neuroscience and Disease [ANIE]:** Studies may be reviewed by CNNT or ANIE may involve neurotransmitters or neurotrophins in brain injury and epilepsy. ANIE reviews clinical and translational studies of brain injury and epilepsy, while CNNT reviews studies of basic neurotransmitter and receptor function and new models of epilepsy and brain injury.
- **With Cell Death in Neurodegeneration [CDIN]:** CDIN and CNNT reviews studies on the molecular and cellular basis of neural disorders. Studies reviewed in CDIN include those on apoptosis, oxidative or general metabolic mechanisms, protein and macromolecular metabolism, while CNNT reviews studies which focus on neurotransmitters, neurotrophins or neurohormone-related proteins.
- **With Clinical Neuroimmunology and Brain Tumors [CNBT]:** CNBT reviews studies of neural disorders that focus on immune and inflammatory mechanisms, while CNNT reviews studies which focus on neurotransmitters, neurotrophins or neurohormone-related proteins. Studies may have components of each of these two areas of study, but those for which the immune process or vascular mechanisms is the focus of the application, review by CNBT is more appropriate.
- **With Brain Injury and Neurovascular Pathologies [BINP]:** CNNT and BINP review studies that propose to investigate abnormalities in neurotransmitter systems. BINP evaluates studies of the ischemic or hypoxic cell death mechanisms that may be related to neurotransmitter function, neurotrophins, regeneration and stem cell or gene therapy for the replacement for specific neurotrophic or neurotransmitter systems, while CNNT studies focus on the basic aspects of function and control of these same systems.
- **With Developmental Brain Disorders [DBD]:** DBD reviews studies of neurodevelopmental disorders, especially when the focus is on unique aspects of the developing nervous system. Neurotransmitter and receptor disease processes that are in common between children and adults may be reviewed in CNNT. If the focus of the proposed

studies in the neurotransmitters and/or receptors, CNNT is probably most appropriate for review, but if neurotransmitter studies are just one aspect of application about neural development, then DBD would be more appropriate.

CNNT has the following shared interests outside the BDCN IRG:

· **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies where the primary focus is on behavior and behavioral approaches may be reviewed in BBBP IRG. Studies that focus mainly on neurotransmitter and receptor function in the neural disorder or injury may be reviewed in CNNT.

· **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** EMNR and CNNT share an interest in neuroendocrine function. Studies that focus on the neuroendocrine control of reproduction, gonadotropin releasing hormones, pituitary hypothalamic connections and pituitary gonadal interactions could be assigned to the EMNR IRG, while those studies focusing on the effects of neurodegenerative disease and brain injury on neuroendocrine function could be reviewed within CNNT.

- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with CNNT with respect to an interest in diseases of the nervous system. However, when the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the application could be reviewed in the GGG IRG. Studies that focus primarily on trophic, neurotransmitter and receptor function in the neural disorder or injury could be reviewed in CNNT.
- **With the Health of the Population [HOP] IRG:** Studies dealing with descriptive and analytical epidemiologic aspects of various neurologic disorders including Alzheimer's disease, Parkinson's disease, stroke and epilepsy may be reviewed within the HOP IRG, while studies that focus primarily on trophic, neurotransmitter and receptor function in the neural disorder or injury could be reviewed in CNNT.
- **With the Hematology [HEME] IRG:** Studies that focus on hematopoiesis, blood cells and related diseases could be assigned to the HEME IRG. Studies that focus on the use of hematopoietic stem cells as therapeutic intervention following brain and spinal cord injury could be referred to CNNT.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** In general, BDCN study sections review studies relating to abnormal and pathological states, while the IFCN IRG reviews normal aspects of brain function. For example, while IFCN and CNNT share common interests in disorders of learning and memory and diseases that involve motor systems, if the focus is to elucidate specific normal memory processes or the neural substrates of motor function, then studies may be assigned to IFCN. Studies that focus primarily on trophic factors, neurotransmitter and receptor function in the neural disorder or injury may be reviewed in CNNT.
- **With the Immunology [IMM] IRG:** Studies focusing on organ-specific aspects of the physiology and pathology of transplantation could be reviewed within the IMM IRG, while studies dealing with transplantation of tissue into the brain as a therapeutic tool could be reviewed within CNNT.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** The MDCN IRG reviews studies on the basic mechanisms of neurotransmitter and receptor function, and reviews studies focused on fundamental cellular and molecular mechanisms. Studies of the fundamental role of neurotransmitters and related molecules in development and plasticity could be reviewed in the MDCN IRG, while studies focusing on trophic factors, neurotransmitter and receptor function in a neural disorder or injury could be reviewed in CNNT. In addition, studies using stem cells where the primary goal is to advance understanding of neural induction, specification, or differentiation are appropriate for the MDCN IRG. Studies focused primarily on restorative/therapeutic outcome may be appropriate for review within CNNT.
- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** CNNT has shared interests with the MOSS IRG with respect to research on recovery and rehabilitation following injury to the CNS. While MOSS has broad expertise in physical therapy, physiology, and non-neuronal systems, CNNT has particular expertise in the neural basis of rehabilitation and recovery particularly following spinal cord injury.
- **With the Renal and Urological Sciences [RUS] IRG:** Studies focusing on central nervous systems regulation of urological function could be assigned to the RUS IRG, while studies dealing with bladder problems secondary to spinal cord injury may be assigned to CNNT.
- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** The SBIB IRG may review studies with focus on the development of imaging technology. However, where the proposed research is oriented toward the application of imaging techniques for studying neurological disorders or injury or their treatment, CNNT may be more appropriate. Both CNNT and the SBIB IRG may review studies dealing with functional brain imaging; however, CNNT may be more appropriate to review those studies using imaging as a tool to study neurological disorders or injury or their treatment modalities. SBIB may be more appropriate to review studies concerning the development and evaluation of imaging procedures.

Developmental Brain Disorders Study Section [DBD]

Formerly BDCN-5

[\[DBD Roster\]](#)

The Developmental Brain Disorders [DBD] Study Section addresses disorders that impact specifically the developing brain and spinal cord. This includes genetic, metabolic, infectious, environmental, and behavioral influences on the fetal, neonatal or pediatric brain that lead to abnormal brain development and function. The Study Section has clinical and basic expertise in the vulnerability and plasticity of the developing brain, and can review patient-oriented research in children and relevant animal models.

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Specific areas covered by DBD:

- Brain development in utero. Transplacental exposure to maternal drugs, and metabolic imbalances.
- Perinatal insults and low-birth-weight infants. Developmental aspects of perinatal injury, hypoxic/ischemia, pediatric epilepsy, congenital infections involving the CNS [excluding HIV].
- Genetic, metabolic and morphological abnormalities. Developmental abnormalities of brain structure, volume, and ventricular space; congenital CSF abnormalities [hydrocephalus]; developmental aspects of inborn errors of metabolism, storage diseases, and neurotransmitter/receptor function; genetic basis of metabolic and morphological abnormalities
- Developmental disorders. Mental retardation, learning disabilities, specific language impairment, dyslexia, autism, cerebral palsy, sudden infant death syndrome [SIDS], and other relevant disorders.
- Therapeutic interventions and brain plasticity. Medical, surgical, pharmacological, and behavioral interventions; plasticity and rehabilitation in the developing brain; clinical studies in children.
- Genetics and animal models. Identification and characterization of genetic mechanisms and development of animal models and therapeutic strategies specifically relevant to disorders of the developing brain.

DBD has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarts" />BDCN IRG:

- **With Other BDCN Study Sections:** DBD has shared interests with most of the other BDCN study sections. Studies involving unique aspects of the developing brain may be reviewed in DBD. However, studies on neural disorders and injuries in the mature brain or mechanisms and approaches that are common to the developing and mature brain [even if they involve children] may be reviewed in the appropriate BDCN Study Section. Among the cognitive and behavioral disorders, studies of mental retardation, autism, may be reviewed in DBD.

DBD has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies of developmental disabilities that are primarily behavioral in emphasis could be reviewed in the BBBP IRG. These include studies, predominantly of humans, of low birth weight and intrauterine growth retardation, mental retardation, learning disabilities, autism, cerebral palsy and neuromotor disorders, and prenatal exposure to toxins, alcohol, and substances of abuse. Studies focusing on the vulnerability and plasticity of the developing brain could be assigned to DBD.
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a primary focus on development mechanisms involved in formation of organ primordial such as brain and spinal cord and mechanism-based analyses of primordial birth defects may be assigned to the BDA IRG. Studies focusing on the vulnerability and plasticity of the developing brain may be assigned to DBD.
- **With the Cardiovascular Sciences [CVS] IRG:** Studies dealing with cerebral circulation and hemodynamics may be assigned to the CVS IRG, while those focusing on cerebral blood flow and the cellular and molecular consequences of ischemia, hypoxia, stroke on in the neonatal or pediatric brain or spinal cord may be assigned to DBD.

- **With the Endocrinology, Metabolism, Nutrition and Reproductive Sciences [EMNR] IRG:** Studies on more general aspects of embryology, development, and transplacental interactions may be reviewed in the EMNR IRG, but studies that focus on disorders of the developing brain may be reviewed in DBD.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with DBD with respect to an interest in hereditary aspects of diseases of the nervous system. When the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the GGG IRG may be more appropriate. When the focus of the application is on the vulnerability and plasticity of the developing brain, the application may be assigned to DBD.
- **With the Health of the Population [HOP] IRG:** Studies dealing with descriptive and analytical epidemiologic aspects of various pediatric neurologic disorders may be reviewed within the HOP IRG, while studies that focus primarily on the vulnerability and plasticity of the developing brain may be assigned to DBD.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** In general, BDCN study sections review studies relating to diseases and pathological states, while the IFCN IRG reviews basic and systems approaches to the study of brain function. DBD has shared interests with the IFCN IRG with respect to the interaction of alcohol and the developing nervous system. The IFCN IRG, which is focused particularly on alcohol and toxicant interactions with the central nervous system, may be more appropriate for the review of general studies of alcohol or toxicant teratogenesis and pathophysiology. DBD may be considered if the primary focus is on the neural substrate and the vulnerability of the developing brain.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** Studies on development and plasticity of the nervous system may be reviewed in the MDCN IRG, especially when the application has a more fundamental focus. DBD may be more appropriate if the focus is on the vulnerability and plasticity of the developing brain, particularly where there are clinical implications.
- **With the Musculoskeletal, Oral and Skin Sciences [MOSS] IRG:** DBD has shared interests with the MOSS IRG in the area of pediatric rehabilitation. MOSS has broad expertise in physical therapy, physiology, and non-neuronal systems, while DBD may be more appropriate for studies of plasticity and recovery involving unique aspects of the developing brain.

[TOP](#)

Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section [NPAS]

Formerly BDCN-6

[\[NPAS Roster\]](#)

The Neural Basis of Psychopathology, Addictions and Sleep Disorders [NPAS] Study Section addresses the neurobiological basis of addictive, behavioral, cognitive and emotional disorders across the life span. NPAS covers a very broad range of topics including structural, functional, electrophysiological, biochemical, pharmacological, neuroanatomical, neuroendocrine, neurotoxicological, physiological, genetic, and neuropsychological aspects of these disorders.

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Specific areas covered by NPAS:

- Addictive disorders. Etiology, pathogenesis, pathophysiology, and treatment strategies of substance abuse, and addictive disorders; co-morbidity factors, including emotional, infectious, and degenerative disorders; structure/function changes and plasticity in the nervous system; neurobiological, behavioral and cognitive processes underlying drug-seeking behavior, craving, tolerance, withdrawal, relapse, dependence and sensitization; neurobiological basis of individual differences in vulnerability and resiliency to drug abuse.
- Behavioral, cognitive and emotional disorders. Etiology, pathogenesis, pathophysiology, diagnosis and/or treatment of a wide range of disorders, including: schizophrenia and other psychotic disorders, mood disorders, anxiety disorders [including phobic disorders, obsessive-compulsive disorder, and post-traumatic stress disorder], cognitive disorders [including delirium and amnesic disorders], attention disorders, activity disorders, sleep disorders, and personality disorders.

- Genetic basis and models of addictive and mental disorders. Identification and expression of genes or genetic mechanisms associated with addictive and mental disorders or models of these disorders, genomic screening, and linkage analysis.

NPAS has the following shared interests within the xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarts" />BDCN IRG:

- **With Pathophysiology of Mental Disorders and Addictions [PMDA]:** Both NPAS and PMDA share interest in mechanisms of mental illnesses and addictions. Studies focusing of animal models and/or translational aspects may be reviewed in PMDA. Application covering similar topics but with greater clinical orientation and/or using human subjects may be more appropriate for NPAS. Studies using postmortem tissues emphasizing details of specific molecular pathways may be reviewed in PMDA. However, general postmortem studies focusing on pre-mortem clinical assessments and correlations with post-mortem neuropathological findings would be more appropriate for NPAS.
- **With Developmental Brain Disorders [DBD]:** Studies relating to childhood disorders may be reviewed in DBD if they focus on some unique aspect of the developing brain [i.e., mental retardation, autism], but studies involving mechanisms that are common to the mature brain [i.e., anxiety disorders, ADHD, eating disorders, tic disorders] may be reviewed in NPAS.
- **Other BDCN Study Sections:** The other BDCN Study Sections have particular expertise in the anatomical, functional, neurotransmitter, molecular, cellular and developmental aspects of neural disorders and injury. However, studies where the primary focus is on neurobiological basis of addictive, behavioral, cognitive [other than dementia-associated], and emotional disorders may be reviewed in NPAS.

NPAS has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBBP] IRG:** Studies that focus primarily on behavior and behavioral approaches could be reviewed in the BBBP IRG. Studies that focus mainly on the neurobiological basis of addictive, behavioral, cognitive, and emotional disorders could be reviewed in NPAS
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a focus on multiple system manifestations of age-related neurological diseases such as Alzheimer's disease may be reviewed within the BDA IRG, while studies where the primary focus is on the neurobiological basis of addictive, behavioral, cognitive, and emotional disorders may be reviewed in NPAS.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with NPAS with respect to an interest in diseases of the nervous system. However, when the focus is primarily on molecular genetic approaches, large-scale gene/genomic/genetic studies, gene discovery using complex or novel technologies, the GGG IRG may be more appropriate. NPAS may be more appropriate for studies where the primary focus is on the neurobiological basis of addictive, behavioral, cognitive, and emotional disorders.
- **With the Health of the Population [HOP] IRG:** Studies dealing with descriptive and analytical epidemiologic aspects of various neurologic disorders including Alzheimer's disease, Parkinson's disease, stroke and epilepsy may be reviewed with the HOP IRG, while studies that focus primarily mainly on the neurobiological basis of addictive, behavioral, cognitive, and emotional disorders may be reviewed in NPAS.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** In general, the IFCN study sections review normal aspects of brain function, while BDCN study sections review studies relating to diseases and pathological states. Studies where the primary focus is on alcohol or toxicant pathophysiology may be reviewed within the IFCN IRG. However, those studies where alcoholism is a co-morbid factor may be reviewed in NPAS.
- **With the Surgical Sciences, Biomedical Imaging and Bioengineering [SBIB] IRG:** For studies concerned with development of imaging technology, the SBIB IRG may be appropriate. However, where the proposed research is oriented toward the application of imaging techniques for studying addictive, cognitive, behavioral, or emotional disorders or their treatment, NPAS may be more appropriate. Both NPAS and the SBIB IRG may review studies dealing with functional brain imaging; however, NPAS may be more appropriate to review those studies using imaging as a tool for studying addictive, cognitive, behavioral, or emotional disorders or their treatment. SBIB may be more appropriate for studies concerning development and evaluation of imaging procedures.

Pathophysiological Basis of Mental Disorders and Addictions (PMDA)

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The PMDA Study Section addresses the pathophysiology of a broad range of psychiatric, addictive and neurological disorders and the biological systems that mediate cognitive, behavioral, emotional, social and learning abnormalities. PMDA reviews models of neuropsychiatric disorders and studies of neurobiological and behavioral deficits that are core features of neuropsychiatric and addictive disorders. The emphasis is on an integrative biological systems understanding of the abnormalities, using a wide range of molecular, genetic, biochemical, pharmacological, cellular, electrophysiological and neuroanatomical methods. Applications addressing neurological disorders and aging are considered if their primary focus is on the behavioral, cognitive and emotional aspects of these conditions.

Specific areas covered by PMDA:

- The underlying neural mechanisms of a broad range of psychiatric disorders including, but not limited to, schizophrenia, mood, anxiety and post-traumatic stress disorders.
- The neurobiology of behavioral disorders including phobias, antisocial personality, aggressiveness, obsessive-compulsive and attention deficit disorders.
- Neural mechanisms of addictive disorders and comorbidities among addictive and other psychiatric disorders.
- Neurobiology of psychiatric manifestations in neurological disorders and chromosomal abnormalities (e.g., Alzheimer's disease, multiple sclerosis).
- Generation of animal models aimed at understanding mechanisms associated with neuropsychiatric disorders and associated endophenotypes.
- Neurobiological and behavioral consequences of human allelic variations associated with mental disorders and their investigations in model systems.
- System biological approaches to examine gene x environment x development interactions within the context of vulnerability and resilience to specific mental disorders.

PMDA has the following shared interests within the `xml:namespace prefix = "st1" ns = "urn:schemas-microsoft-com:office:smarts" />`BDCN IRG:

- **With Neural Basis of Psychopathology, Addictions and Sleep Disorders [NPAS]:** NPAS has particular expertise to review studies focused on clinical and neuroimaging studies, while PMDA may review applications focused on mechanisms and animal models. Studies addressing predominantly clinical questions, mainly in humans, are reviewed by NPAS, while studies employing basic neuroscience approaches (in model systems with a clinical proof of concept component in humans) may be assigned to PMDA. Studies on postmortem human tissues are generally reviewed by NPAS. Detailed studies of specific molecular pathways using postmortem human tissue may be reviewed by PMDA.
- **With Developmental Brain Disorders [DBD]:** DBD reviews inborn or early childhood onset pervasive neurodevelopmental disorders (i.e., mental retardation, autism, cerebral palsy), while PMDA reviews neuropsychiatric disorders with the typical age of onset in later childhood, adolescence or adulthood (i.e., ADHD, anxiety disorders, schizophrenia, bipolar disorder).
- **With Clinical Neuroscience and Disease [CNN]:** CNN reviews applications on the anatomical and functional basis of neurodegenerative disorders and injury, while PMDA may review applications focused on psychiatric disorders and related cognitive, behavioral and emotional abnormalities resulting from neurodegeneration.
- **With Clinical Neuroscience and Disease [ANIE]:** ANIE reviews applications on the anatomical and functional basis of injury and epilepsy, while PMDA may review applications focused on psychiatric disorders and related cognitive, behavioral and emotional abnormalities resulting from CNS injury.

- **With Clinical Neuroplasticity and Neurotransmitters [CNNT]:** CNNT has shared interests with PMDA with respect to neuroplasticity and neurotransmitter systems in brain diseases. PMDA may review applications focused on alterations in neuroplasticity and neurotransmitter functions in associated with specific psychiatric, behavioral and addictive disorders.

PMDA has the following shared interests outside the BDCN IRG:

- **With the Biobehavioral and Behavioral Processes [BBBP] IRG:** Studies that focus primarily on behavior and behavioral approaches to study psychopathology may be reviewed in the BBBP IRG. Applications that focus mainly on the mechanisms responsible for behavioral and psychological changes in neuropsychiatric disorders could be reviewed in PMDA.
- **With the Biology of Development and Aging [BDA] IRG:** Studies with a focus on age-related changes in the development and clinical manifestations of neurological diseases may be reviewed within the BDA IRG, while applications with a primary focus on the mechanisms of age related changes in psychiatric manifestations of these disorders may be reviewed in PMDA .
- **With the Emerging Technologies and Training in Neurosciences IRG [ETTN]:** The Molecular Neurogenetics study section (MNG) within ETTN reviews applications that focus on applying molecular genetic approaches to studies conducted in a neuroscience context. If the focus is basic genetic mechanisms associated with neural dysfunction, assignment could be to MNG. Applications that focus on mechanisms of psychiatric disorders and involve molecular and limited genetic tools could be reviewed in PMDA.
- **With the Genes, Genomes and Genetics [GGG] IRG:** The GGG IRG has shared interests with PMDA with respect to an interest in genetics of diseases of the nervous system. When the focus is primarily on complex novel molecular/statistical genetics, the application could be reviewed in the GGG IRG. When the genetic characterization of neuropsychiatric disorders is a component of a broader multidisciplinary effort, the application could be reviewed in PMDA.
- **With the Integrative, Functional and Cognitive Neuroscience [IFCN] IRG:** The IFCN study sections review primarily applications studying normal aspects of brain function, while BDCN study sections review applications studying the neural basis of altered brain functions in neuropsychiatric diseases in model systems. Applications examining mechanisms of behavioral actions of psychoactive drugs may be reviewed by IFCN or PMDA depending on the focus on the basic pharmacological or disease related aspects respectively. Studies focused on basic mechanisms may be reviewed by IFCN, Studies aimed at examining experimental therapeutics and/or neuropsychiatric consequences of drug actions may be reviewed by PMDA.
- **With the Molecular, Cellular and Developmental Neuroscience [MDCN] IRG:** Applications that primarily focus on the basic cellular and molecular mechanisms of neuronal and glial function in normal and disease states may be reviewed in the MDCN IRG. Applications that focus on the pathophysiology of specific disorders and associated phenotypes may be reviewed in PMDA.

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