Center for Scientific Review
National Institutes of Health

Scientific Areas of Integrated Review Groups (IRGs)

For a listing of the Scientific Review Administrator and membership roster for each study section, click on the study section roster name under an IRG listed below or go to the study section index (study sections listed alphabetically) and click on the specified roster next to the name of the study section.

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Referral & Review

Infectious Diseases and Microbiology IRG [IDM]

The Infectious Diseases and Microbiology [IDM] IRG will consider applications involving the basic biology of microbes (excluding HIV), multicellular parasites and their vectors, and the infections and diseases caused by these agents. Specifically the IDM IRG reviews research grant applications concerning virology and viral pathogenesis, bacteriology and bacterial pathogenesis, fungal pathogenesis, parasitology and parasitic diseases, the innate and adaptive host responses to these microbes and viruses, and the development of anti-infective agents to treat and prevent infectious disease. If the focus of a grant application is a pathogen or a pathogenic mechanism, assignment for review could be to an IDM study section.

The following study sections are included within the IDM IRG:

Prokaryotic Cell and Molecular Biology [PCMB]
Bacterial Pathogenesis [BACP]
Host Interactions with Bacterial Pathogens [HIBP]
Pathogenic Eukaryotes [PTHE]
Virology A and B Study Sections [VIRA and VIRB]
Clinical Research and Field Studies of Infectious Diseases [CRFS]
Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]
Vector Biology [VB]
Infectious Diseases and Microbiology Small Business Activities Special Emphasis Panels [IDM Small Business SEPs]:
Bacterial Diseases, Food Safety and General Microbiology [IDM (10)]
Bacterial Biodefense Agents [IDM (11)]
Viral and Eukaryotic Pathogens [IDM (12)]

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Prokaryotic Cell and Molecular Biology Study Section [PCMB]

[PCMB Roster]

The Prokaryotic Cell and Molecular Biology Study Section reviews applications addressing the genetics, biochemistry, structure, physiology and behavior of bacteria, archaea, and their phages. The focus of the study section is on research whose results will be applicable principally to

microbial organisms. Studies may use pathogenic or nonpathogenic organisms and be at the genetic, molecular, biochemical, cellular, or community level.

Specific areas covered by PCMB:

- Genome organization and dynamics
- Mobile genetic elements and gene transfer
- Replication, recombination, mutation, and repair
- Transcription and RNA processing
- Gene expression and regulation
- Protein synthesis and modification
- Export, secretion, and localization
- Assembly of supramolecular structures
- Morphogenesis and cell division
- Regulatory networks and dynamics
- Modeling of microbial cell processes
- Intercellular signaling and other cell-cell interactions
- Environmental interactions and symbiosis
- Intermediary metabolism and energetics
- Development and differentiation
- Stress responses, survival, and death
- Chemotaxis and motility
- Functional genomics and proteomics

PCMB has the following shared interests within the IDM IRG:

- **With Bacterial Pathogenesis [BACP]:** Proposals that focus on basic cellular mechanisms in bacteria, rather than directly on the mechanism of pathogenesis, could be assigned to PCMB even if the results have potential implications for pathogenic mechanisms. If the focus is on the examination of these basic cellular mechanisms in the context of a bacterial infection, assignment could be to BACP.

- **With Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]:** Applications focused on particular microbial molecular targets for the purpose of discovering new antibiotics or microbicides, or to understand resistance mechanisms could be assigned to DDR; applications that involve potential antimicrobial targets, but do not focus on identification of novel compounds, could be assigned to PCMB.

- **With Vector Biology [VB]:** If the emphasis is on the vector, the proposal could be assigned to VB. If the emphasis is on the microbe, the proposal could be assigned to PCMB or another appropriate IDM study section.

PCMB has the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. If the emphasis is on understanding a molecule (e.g., an enzyme) to study itsgeneralmode of action, assignment could be to BCMB. If the emphasis is on understanding the action of a molecule in the context of a process unique to a microbial cell, the proposal could be assigned to PCMB.

- **With the Cell Biology [CB] IRG:** The CB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the CDF IRG. Cell

biology studies of microbes (including those on model systems) where the results will principally apply to microbes (including pathogens) could be assigned to PCMB. Studies whose results will be broadly applicable across kingdoms (*i.e.*, crosscutting studies) could be assigned to CB.

- **With the Genes, Genomes, and Genetics [GGG] IRG:** Genetic studies of microbes (including those on model systems) where the results will principally apply to microbes (including pathogens) could be assigned to PCMB. Studies whose results will be broadly applicable across kingdoms (*i.e.*, crosscutting studies) could be assigned to GGG. Proposals on evolution, ecology, or population biology of microbes (including bacteria and archaebacteria and their phages) could be assigned to GGG.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Studies that employ computational modeling and simulation to understand complex processes, such as metabolism and gene circuitry in bacteria and archaea, could be assigned to PCMB. Studies targeted at the development of models and simulations for process design could be assigned to BST. Proposals that focus on the development of methods for functional genomics or proteomics of bacteria could be assigned to BST or GGG. Proposals that use functional genomics or proteomics to study bacterial processes could be assigned to PCMB.

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Bacterial Pathogenesis Study Section [BACP]

[BACP Roster]

The Bacterial Pathogenesis Study Section reviews proposals that focus primarily on the bacterial pathogen, or the pathogen side of the host pathogen relationship, e.g., studies focused on mechanisms of bacterial; commensalism, infection, and disease. Appropriate studies relevant to biodefense are included.

Specific areas covered by BACP:

- Genetic and biochemical characterization of determinants of pathogenicity, including: capsules, toxins, and supramolecular structures
- Genetic and biochemical mechanisms of virulence regulation
- Functional genomic and proteomic approaches for understanding pathogenesis
- Composition of the indigenous microbiota and its role in health and disease
- Role of bacterial behavior and developmental processes in the host pathogen interaction, including: biofilms, chemotaxis, sporulation, and stress responses
- Mechanisms of persistence and transmission
- Ecology of bacterial pathogens
- Role of bacteriophages in pathogenesis
- Animal models of infection
- Exploration of small molecules and drugs as modulators and regulators of virulence

BACP has the following shared interests within the IDM IRG:

- **With Prokaryotic Cell and Molecular Biology [PCMB]:** Studies directed at basic mechanisms in the bacteria themselves, including in pathogenic bacteria, could be assigned to PCMB. Studies directed at understanding the biology of pathogenicity could be assigned to BACP.

- **With Host Interactions with Bacterial Pathogens [HIBP]:** Studies that focus on bacterial factors that affect host cells, or the host component of the host-pathogen interaction, could be assigned to HIBP. Studies that focus on the bacterial pathogen or on the pathogen component of the host-pathogen interaction could be assigned to BACP.

- **With Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]:** Studies of target identification, characterization, and validation could be assigned to DDR if the focus is the antimicrobial agent rather than the target. Studies that focus on antimicrobial target identification and validation could be assigned to BACP.

BACP has the following shared interests outside the IDM IRG:

- **With the Genes, Genomes, and Genetics [GGG] IRG:** Genetic studies of bacterial pathogenicity could be assigned to BACP. Studies whose results will be broadly applicable could be assigned to GGG.

- **With the AIDS and AIDS-Related Research [AARR] IRG:**Applications dealing with bacterial pathogens involved in AIDS-related infections could be assigned to BACP when the focus is on the pathogen, unless conducted in the context of HIV infection, in which case they could be referred to AARR.

- **With the Musculoskeletal, Oral, and Skin Sciences [MOSS] IRG:** Oral microbiology applications may be reviewed in MOSS or in BACP or in HIBP. When the emphasis of an application involving bacteria that colonize the oral cavity is on the pathogen or mechanisms of pathogenesis and/or colonization, the application could be referred to BACP or HIBP. When the emphasis is on the response of tissues of the oral cavity, assignment could be to MOSS.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** Applications focusing on local and/or disseminated infection (i.e., post operative wound infection, abscess or sepsis) could be referred to SBIB; applications which focus on the pathogen, could be referred to BACP or HIBP.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Bacterial diseases of the nervous system are a shared interest between BDCN and BACP. Applications that focus on the infective agent could be assigned to BACP while those that focus on the manifestations in the nervous system could be assigned to HIBP or BDCN. Neurological manifestations of other infections could be referred to BDCN.

- **With the Cardiovascular Sciences [CVS], Digestive Sciences [DIG], Respiratory Sciences [RES], and Renal and Urological Sciences [RUS] IRGs:** Although some applications involving bacterial infectious diseases may be appropriately referred to study sections focused on a specific organ system or to HIBP; if focus is on the pathogen, the application could be referred to BACP or HIBP.

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Host Interactions with Bacterial Pathogens Study Section [HIBP]

[HIBP Roster]

The Host Interactions with Bacterial Pathogens Study Section reviews applications involving studies that focus on bacterial factors that alter/affect host cells, or the host aspect of the host

pathogen interaction. Appropriate studies relevant to biodefense are included.

Specific areas covered by HIBP:

- Molecular basis for bacteria-host interactions, including: adherence to, and invasion of, host cells, intracellular replication, and intercellular spread
- Characterization of the role of immunomodulators and other effector molecules in pathogenicity
- Interplay between bacteria and host cell components and processes
- Subversion and manipulation of normal host cell processes
- Genetics and physiology of in vivo survival and growth
- Multiplication and dissemination of bacteria in host tissues
- Manipulation and evasion of innate and adaptive immune responses
- Mechanisms of asymptomatic colonization and the balance between infection and disease, and commensalism and pathogenicity
- Immune response of host to bacteria
- Animal models of infection and disease, including host genetic determinants of susceptibility and resistance and surrogate hosts
- Role of bacterial agents in noninfectious diseases

HIBP has the following shared interests within the IDM IRG:

- **With Bacterial Pathogenesis [BACP]:** Studies that focus on bacterial factors that affect host cells, or the host component of the host-pathogen interaction, could be assigned to HIBP. Studies that focus on the bacterial pathogen or on the pathogen component of the host-pathogen interaction could be assigned to BACP.

- **With Clinical Research and Field Studies of Infectious Diseases [CRFS]:** Studies of bacterial diseases in human populations or in field-based settings could be assigned to CRFS. Laboratory and model-based studies of bacterial disease could be assigned to HIBP.

HIBP has the following shared interests outside the IDM IRG:

- **With the Health of the Population [HOP] IRG:** Studies of health status or health outcomes that employ epidemiological methods and that use persons or groups of persons as the unit of observation could be assigned to HOP. Studies employing epidemiological methods that use cellular or subcellular units of observation could be assigned to BACP.

- **With the Immunology [IMM] IRG:** Applications that emphasize host defense issues but focus on the pathogen may be referred to HIBP. Applications focusing on the immune response may be referred to IMM. Applications focusing on host-pathogen interactions are a shared interest and may be assigned to HIBP or IMM depending on the central thrust of the scientific questions.

- **With the AIDS and AIDS-Related Research [AARR] IRG:**Applications dealing with host interaction with bacterial pathogens involved in AIDS-related infections could be assigned to HIBP when the focus is on the pathogenic response, unless conducted in the context of HIV infection, in which case they could be referred to AARR.

- **With the Musculoskeletal, Oral, and Skin Sciences [MOSS] IRG:** Oral microbiology applications may be reviewed in MOSS or in HIBP or in BACP. When the emphasis of an application involving bacteria that colonize the oral cavity is on the pathogen or mechanisms of pathogenesis and/or colonization, the application could be referred to HIBP or

BACP. When the emphasis is on the response of tissues of the oral cavity, assignment could be to MOSS.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** Applications that focus on local and/or disseminated infection (i.e., post operative wound infection, abscess or sepsis) could be referred to SBIB; applications focusing on mechanisms of bacterial recognition (e.g., via Toll-like Receptors), initiation of cytokine cascades, or response to infection in a non-surgical context could be referred to HIBP.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Bacterial diseases of the nervous system are a shared interest between BDCN and HIBP. Applications that focus on the response of the nervous system to a bacterial agent could be assigned to HIBP or to BDCN depending on the focus of the study. Neurological manifestations of other infections could be referred to BDCN.

- **With the Cardiovascular Sciences [CVS], Digestive Sciences [DIG], Respiratory Sciences [RES], and Renal and Urological Sciences IRGs:** Although some applications involving bacterial infectious diseases may be appropriately referred to study sections focused on a specific organ system; if focus is on tissue response to the pathogen, the application could be referred to HIBP or BACP.

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Pathogenic Eukaryotes Study Section [PTHE]

[PTHE Roster]

The Pathogenic Eukaryotes Study Section reviews applications involving protozoal, helminthic, and fungal pathogens in humans, and animal models.

Specific areas covered by PTHE:

- Mechanisms of pathogenesis, including pathogen-host cell receptor interactions, signaling pathways in both host cell and pathogen, molecular mechanisms of virulence, manipulation of host cell biological pathways, and factors associated with asymptomatic infection and/or commensalisms
- Primary host defenses, including genetic basis of host resistance and susceptibility to infection and disease, induction and regulation of innate and acquired immunity, evasion of host immune response
- Biochemical processes of the pathogen: including, metabolism, enzymology, physiology, and replication
- Identification and preclinical validation of potential chemotherapeutic targets and diagnostic strategies
- Pathogen cell biology, including novel organelles, secretory processes, and mechanisms of motility
- Pathogen differentiation, morphogenesis, and developmental processes required for the infectious cycle, including transmission and persistence
- Genetic processes, including gene structure, regulation of gene expression, molecular evolution, genetic diversity, and improved genetic methodology
- Functional genomics, comparative genomics, proteomics, and other broad-based technologies for studying genomes
- Improved models of infectious cycles and diseases

PTHE has the following shared interests within the IDM IRG:

- **With Clinical Research and Field Studies of Infectious Diseases [CRFS]:** Applications on protozoal, helminthic and fungal diseases in human populations or in field-based settings could be assigned to CRFS. Laboratory and model-based studies could be assigned to PTHE.

- **With Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]:** Applications that focus on design and/or validation of potential chemotherapeutic agents for protozoal, helminthic, or fungal infections could be referred to DDR. Studies where the focus is on identification of potential therapeutic targets against these agents could be referred to PTHE.

- **With Vector Biology [VB]:** If the focus of an application is the pathogen, assignment could be to PTHE. If the focus is the host vector, then assignment could be to VB.

PTHE has the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB]; Genes, Genomes, and Genetics [GGG]; and Cell Biology [CB] IRGs:** The BCMB and CB IRGs will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS, BPC and CDF IRGs, respectively. Fundamental studies using model organisms (such as Saccharomyces cerevisae, Schizosaccharomyces pombe, Neurospora, Tetrahymena, and Chlamydomonas) in nonpathogenic settings could be referred to the appropriate basic science study section. Studies involving pathogenicity could be referred to PTHE.

- **With Health of the Population [HOP] IRG:** Studies of health status or health outcomes that employ epidemiological methods and that use persons or groups of persons as the unit of observation could be assigned to HOP. Studies employing epidemiological methods that use cellular or subcellular units of observation could be assigned to PTHE.

- **With the Immunology [IMM] IRG:** Basic studies of immune response could be referred toIMM, applications where the focus is an immune response to parasitic or fungal pathogens could be referred toPTHE.

- **With the AIDS and AIDS-Related Research [AARR] IRG:**Applications dealing with the molecular and cellular biology and biochemistry of parasitic and fungal pathogens involved in AIDS-related infections could be assigned to PTHE when the focus is on the pathogen, if conducted in the context of HIV infection, they could be referred to AARR.

- **With the Hematology [HEME] IRG:** There is a shared interest between PTHE and HEME for parasitic infections of blood elements such as malaria. If the primary interest is in the blood cells (e.g., macrophages, cytoskeletal proteins), then assignment to HEME may be appropriate. If the main objective is to study the parasite, and characteristics of the infection that relate to the parasite, then assignment to PTHE may be appropriate.

- **With the Digestive Sciences [DIG] IRG:** Studies of the effects of pathogenic eukaryotes on organs is a shared interest with DIG. When the focus of the application is on the response of the organ, it could be reviewed in DIG; when the focus is on pathogenicity review could be in PTHE.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Fungal diseases of the nervous system are a shared interest between BDCN and PTHE. Applications that focus on the pathogen could be assigned to PTHE, while those that focus on the manifestations in the

nervous system could be assigned to BDCN. Neurological manifestations of other infections could be referred to BDCN.

- **With Cardiovascular Sciences [CVS], Digestive Sciences [DIG], Respiratory Sciences [RES], and Renal and Urological Sciences [RUS] IRGs:** Although some applications involving eukaryotic infectious diseases may be appropriately referred to study sections focused on a specific organ system; if the focus is on the pathogen, the application could be referred to PTHE.

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Virology A and Virology B Study Sections [VIRA & VIRB]

[VIRA Roster] [VIRB Roster]

The Virology A and B Study Sections both address fundamental aspects of viral structure, genetics, infection and replication; cellular and host responses to viral and prion infections; and mechanisms of disease pathogenesis in plants, animals, and humans. Both study sections have a range of expertise allowing them to address most topics in virology and viral pathogenesis. In general, applications with a focus on biophysics aspects of virology or structural biology will be assigned to VIRA and those addressing viral immunity will be assigned to VIRB. Appropriate studies relevant to biodefense are included.

Specific areas covered by VIRA and VIRB:

- Viruses, subviral agents, prions, and their infections of humans, animals, simple eukaryotes, and plants (with the exception of HIV and bacteriophages)
- Cellular and molecular biology of viral replication, including the roles and interactions of viral and host cell components, in areas such as:
  - Virus attachment to cells, entry, trafficking and uncoating
  - Gene expression and regulation, including structure, synthesis, processing and modification of RNA transcripts, proteins, and other viral macromolecules
  - Viral genome replication, including nucleic acid synthesis, transport, and integration
  - Virion and subviral particle assembly, trafficking, maturation, and egress
- Virus effects on host signal transduction, host gene expression, and cellular physiology
- Reconstitution and study of virus infection processes in cell-free systems
- Biochemical and biophysical properties of virions, sub-viral particles and other viral assemblies such as intracellular replication factories, integration complexes, etc.
- Viral variation, evolution and their mechanisms, including mutation and recombination (intra-virus, inter-virus, and virus-host)
- Virus co-infection effects, including: cooperative, dependent, competitive, and interfering interactions
- Factors influencing host cell permissivity or resistance, including host genetics, cell differentiation state, and cell culture conditions
- Viral-host cell interactions:
  - Cellular responses to viral infection including interferon induction, apoptosis and cytopathology
  - Virus effects on cellular production of cytokines and chemokines
  - Effects on cell growth and division
  - Effects on DNA synthesis and repair
  - Effects on RNA synthesis, stability, processing and transport
  - Effects on protein synthesis, modification and stability

- Interference and enhancement of virus infection and cellular control of virus replication, including, the effects of interferon and other cellular inhibitory responses (such as RNAi)
- Transformation and oncogenesis:
  - Detection of Tumor Viruses
  - Dysregulation of cell growth and cell death by viral products
  - The role of a virus in establishing a premalignant condition, i.e., immortalization by viral proteins
- Identification of new molecular targets relevant to viral pathogenesis:
  - Genomics and proteomics
  - Development of new approaches for identifying cellular changes relevant to pathogenic mechanisms
- Viral determinants of disease:
  - Virus diversity within a host
  - Virulence and attenuation
  - Transmission
  - Teratogenicity
  - Spread within the host
  - Tissue and cell tropism
  - Mechanisms of tissue injury
  - Viral mechanisms of immune evasion, including viral proteins that modify host responses
  - Animal models of disease pathogenesis
- Host response to virus infection:
  - Genetic and acquired determinants of host susceptibility
  - Hormonal effects
  - Mechanisms of viral clearance
  - Establishment of latency and persistence
  - Animal models of host responses
- Viral etiology of chronic disease:
  - Identification and detection of viruses associated with chronic disease
  - Validation of etiologic relationships
  - Animal models of virus-induced chronic disease

VIRA and VIRB have the following shared interests within the IDM IRG:

- **With Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]:** If the focus of an application is drug development or resistance, or preclinical testing of an antiviral drug assignment could be to DDR. If the focus is the identification of an antiviral drug target or use of a drug to study basic mechanisms of virus infection, assignment could be to VIRA or VIRB.
- **With Clinical Research and Field Studies [CRFS]:** Studies of viral disease involving human subjects could be assigned to CRFS. Studies using animal models could be assigned to VIRA or VIRB.

VIRA and VIRB have the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. If the focus of an application is on studying chemistry or physics of a macromolecule without reference to its role in infection assignment could be to BCMB. If the focus of the study is to elucidate the role of the molecule in viral infection, it could be assigned to VIRA or VIRB.

- **With the Cell Biology [CB] IRG:** The CB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the CDF IRG. Where a virus or virus component is used as a tool or a general example in a study of a cell process, with no consideration of relevance to infection, assignment could be to CB. Where cell biology processes of a virus or a cell is being studied in relation to viral infection, assignment

could be to VIRA or VIRB.

- **With the Genes, Genomes, and Genetics [GGG] IRG:** Applications dealing with the genomics, genetics, or population dynamics of viruses; or similar studies of host cells in relation to permissivity for, or resistance to, viral infection could be assigned to VIRA or VIRB. Studies using a viral gene as a generalizeable example of a genetic process could be referred to GGG.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Applications to use existing viral gene delivery and expression vectors for other applied purposes could be assigned to BST or, as appropriate, to another relevant disease- or organ-specific IRG. Proposals to design, construct, and test new virus gene delivery and expression vectors for the purpose of advancing understanding of the process of infection, or to use such vectors to study infection processes could be assigned to VIRA or VIRB. Proposals to design, construct, and test new virus gene delivery and expression vectors for other purposes could be assigned to BST. Also, applications that apply quantitative modeling and simulation to understand virus infection processes could be assigned to VIRA or VIRB. Proposals to develop new approaches to quantitative modeling and simulation could be referred to BST.

- **With the Immunology [IMM] IRG:** Applications focused on viral induction of cytokines (e.g., interferon and chemokines), viral clearance, or viral proteins that modulate host immune responses could be assigned to VIRB. Applications focused on other aspects of immunity could be assigned to IMM.

- **With the AIDS and AIDS-Related Research [AARR] IRG:** Applications dealing with the replication or pathogenesis of viruses involved in AIDS-related opportunistic infections could be assigned to AARR, if the infection is not being studied in an AIDS context, assignment could be to VIRA or VIRB. Studies that focus on viral infection could be assigned to VIRA or VIRB.

- **With the Oncological Sciences [ONC] IRG:** Studies of cellular oncogenes (e.g., cSrc, cAbl, cJun) and translocations involving cellular oncogenes could be referred to ONC. Studies that focus on virus replication, even if during viral-induced oncogenesis, could be assigned to VIRA or VIRB.

- **With the Brain Disorders and Clinical Neuroscience [BDCN] IRG:** Viral and prion diseases of the nervous system are a shared interest between BDCN and VIRA and VIRB. Applications that focus on the infective agent could be assigned to VIRA or VIRB while those that focus on the manifestations in the nervous system could be assigned to BDCN. Neurological manifestations of other infections could be referred to BDCN.

- **With the Musculoskeletal, Oral, and Skin Sciences [MOSS], Cardiovascular Sciences [CVS], Digestive Sciences [DIG], Respiratory Sciences [RES], and Renal and Urological Sciences [RUS] IRGs:** Viral infections of specific organs or tissues could be referred to VIRA or VIRB when the focus of the application is on the pathogen or pathogenic mechanisms. When the focus of the study is the effect on the organ, referral could be to the organ system IRG.

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Clinical Research and Field Studies of Infectious Diseases Study Section [CRFS]

[CRFS Roster]

The Clinical Research and Field Studies of Infectious Diseases Study Section reviews applications that address population-based studies on the emergence, spread, control, and prevention of infectious diseases (including potential agents of bioterrorism) that affect humans.

Specific areas covered by CRFS:

- Design and execution of investigator-initiated clinical trials for testing agents or strategies for preventing or treating infectious diseases
- Identification of factors involved in the pathogenesis, emergence and spread of infectious diseases, including studies of vectors and the contribution of environmental and societal influences
- Field studies of strategies to control the transmission of infectious diseases by invertebrate vectors or reservoir hosts
- Diagnostics for the detection, identification, and surveillance of infectious diseases
- Molecular epidemiology of infectious diseases, including genetic characterization of both the pathogen and the host
- Studies that address the potential infectious etiology of human disease

CRFS has the following shared interests within the IDM IRG:

- **With Host Interactions with Bacterial Pathogens [HIBP]:** Studies of bacterial diseases in human populations or in field-based settings could be assigned to CRFS. Laboratory and model-based studies of bacterial disease could be assigned to HIBP.

- **With Pathogenic Eukaryotes [PTHE]:** Applications focused on laboratory and model-based studies could be assigned to PTHE. Studies of protozoal, helminthic and fungal diseases in human populations or on field-based settings could be referred to CRFS.

- **With Virology A [VIRA] and Virology B [VIRB]:** Studies of viral disease involving human subjects could be assigned to CRFS. Studies using animal models could be assigned to VIRA or VIRB.

- **With Drug Discovery and Mechanisms of Antimicrobial Resistance [DDR]:** Applications that focus on the preclinical aspects of drug discovery and development could be referred to DDR. CRFS could consider proposals that devise clinical trials to test the efficacy of antimicrobial agents.

CRFS has the following shared interests outside the IDM IRG:

- **With the Health of the Population [HOP] IRG:** Studies of health status or health outcomes that employ epidemiological methods and that use persons or groups of persons as the unit of observation could be assigned to HOP. Studies employing epidemiological methods that use cellular or subcellular units of observation could be assigned to CFRS.

- **With the Musculoskeletal, Oral, and Skin Sciences [MOSS], Cardiovascular Sciences [CVS], Digestive Sciences [DIG], Respiratory Sciences [RES], and Renal and Urological Sciences [RUS] IRGs:** When the focus of the application is on the infectious agent, assignment could be to CRFS; when the focus is on the tissue, assignment could be to the appropriate organ system IRG.

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Drug Discovery and Mechanisms of Antimicrobial Resistance Study Section [DDR]

[DDR Roster]

The Drug Discovery and Mechanisms of Antimicrobial Resistance Study Section reviews applications that are concerned with the identification of novel antimicrobial agents, including agents that could be used in bioterrorism, for the prevention and treatment of infectious diseases and the study of the evolution, mechanisms, and transmission of resistance.

Specific areas covered by DDR:

- Target identification, characterization and validation
- Assay development
- Development of novel screening methods
- Molecular characterization of inhibitors
- Studies of the mechanisms and regulation of antimicrobial resistance
- Studies of the emergence, dissemination, and maintenance of resistance; including the identification of environmental reservoirs in hospitals and the community
- Molecular characterization of resistant pathogens
- Strategies for the prevention of antimicrobial resistance
- Structure-guided drug design
- Preclinical studies that involve animal models
- Development of procedures and instruments
- Viral gene delivery, expression vectors, and phage therapy

DDR has the following shared interests within the IDM IRG:

- **With Prokaryotic Cell and Molecular Biology [PCMB]:** The biology of mobile genetic elements could be considered in PCMB or BACP. Studies of mobile genetic elements could be referred to DDR if they specifically address antimicrobial resistance.

- **With Bacterial Pathogenesis [BACP]:** Studies that emphasize antimicrobial target identification and validation could be referred to BACP. Whereas, applications on target identification, characterization and validation could be considered in DDR if the focus is the antimicrobial agent rather than the target.

- **With Pathogenic Eukaryotes [PTHE]:** Studies that include antimicrobial target identification and validation could be referred to PTHE. Whereas studies of target identification, characterization and validation could be referred to DDR if the focus of the proposal is on the antimicrobial agent, rather than the target.

- **With Virology A [VIRA] and Virology B [VIRB]:** If the focus of an application is identification of an antiviral drug target or use of a drug to study basic mechanisms of virus infection, assignment could be to VIRA or VIRB. If the focus is drug development or drug resistance, assignment could be to DDR.

- **With Clinical Research and Field Studies of Infectious Diseases [CRFS]:** Applications that devise clinical trials to test the efficacy of antimicrobial agents could be assigned to CRFS. Applications that focus on the preclinical aspects of drug discovery and development could be referred to DDR.

DDR has the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. Applications concerned with chemical syntheses could be referred to BCMB, while those determining structure-activity relationships could go to either DDR or BCMB.

- **With the Digestive Sciences [DIG] IRG:** Applications seeking to identify or characterize new antimicrobial drugs could be assigned to DDR. Applications where the primary focus is on the disposition (absorption, metabolism, distribution, and excretion) of xenobiotics, including pharmaceutical agents, or their toxicological effects on the host, may be appropriate for the DIG IRG.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Applications to use existing viral gene delivery and expression vectors could be assigned to DDR or to another relevant disease- or organ-specific IRG, as appropriate. Proposals to design and test improved virus gene delivery and expression vectors could be assigned to BST.

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Vector Biology Study Section [VB]

[VB Roster]

The Vector Biology Study Section reviews applications on all aspects of arthropod and molluscan intermediate hosts of parasitic (e.g., nematode, helminth, or protozoa), viral, and bacterial pathogens, including model systems, where the intent is to yield information relevant to human diseases.

Specific areas covered by VB:

- Basic biology, ecology and molecular biology with relevance to vector-borne human pathogens
- Metabolism and physiology of vectors
- Development of methods for maintaining arthropods in the laboratory
- Genetics of vectors, including population genetics
- Genomics, including comparative and functional genomics, and proteomics
- Improvements of genetic technology and its application in areas such as reducing vector capacity (including transgenic, selected gene silencing and knockout) and blocking parasite transmission
- Host immune responses to vectors
- Pharmacological aspects of arthropod salivary and other secretory products
- Development, laboratory evaluation, and field-based testing of approaches to control vectors and disease transmission
- Arthropod symbionts and their use in introducing genes that encode anti-microbial products
- Vector/host interactions
    - Vector competence
    - Pathogen impact on host fitness
    - Laboratory-based pathogen development and transmission
    - Pathogen/vector interactions, including biochemical and genetic processes
    - Vector immune responses to pathogens and surrogate vector systems
    - Molecular basis of transmission interference including identification of molecular and cellular targets

VB has the following shared interests within the IDM IRG:

- **With Prokaryotic Cell and Molecular Biology [PCMB]:** If the emphasis of an application is on the microbe, it could be assigned to PCMB or another appropriate IDM study section. If the emphasis is on the vector, the proposal could be assigned to VB.

- **With Pathogenic Eukaryotes [PTHE]:** If the focus of an application is the pathogen, assignment could be to PTHE. If the focus is the host vector, then assignment could be by VB.

VB has the following shared interests outside the IDM IRG:

- **With the Genes, Genomes and Genetics [GGG] IRG:** Projects to sequence vector and vector-borne pathogen genomes could be reviewed in GGG.

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Infectious Diseases and Microbiology Small Business Activities Special Emphasis Panels [IDM Small Business SEPs]

[SBIR/STTR Panels]

The Infectious Diseases and Microbiology Small Business Activities Special Emphasis Panels [IDM Small Business SEPs] review small business applications including Small Business Innovation Research [SBIR] and Small Business Technology Transfer [STTR] grant applications concerned with the identification and detection of infectious agents or their vectors or toxins as well as their elimination or control through sterilization and therapeutic technologies.

Bacterial Diseases, Food Safety and General Microbiology Special Emphasis Panel [IDM (10)]

The Bacterial Diseases, Food Safety and General Microbiology Special Emphasis Panel [IDM (10)] reviews SBIR and STTR applications that focus on the development of therapeutic agents to combat human bacterial infections, the development of diagnostic tools to detect bacterial pathogens, technologies to protect food and water from infectious contamination, and general microbiology.

Specific areas covered by BDM include:

- Development of novel antibiotics or anti-infective agents
- Development of animal models for testing novel therapeutic agents that target bacterial diseases
- Development of novel therapeutic processes or interventions to combat bacterial infection or improve wound healing
- Study and detection of bacterial biofilms as related to human disease; development of agents or methods to combat biofilms *in vivo* and on medical devices
- Development of processes to optimize industrial production of antibacterial agents
- Development of diagnostic tools for detection of human bacterial pathogens
- Detection and inactivation of pathogenic bacteria in food or drinking water

BDM has the following shared interests within the IDM IRG:

- **With Viral and Eukaryotic Pathogens [VEP]:** Studies that address the sterilization of

surfaces or liquids other than food products could be assigned to VEP. Studies directed at food safety could be assigned to BDM.

- **With Bacterial Biodefense Agents [BBA]:** Studies that focus on drug therapies of bacterial biodefense agents and their toxins or bacterial detection technologies including biosensors could be assigned to BBA. Studies to develop detection technologies or drug discovery for other bacterial pathogens could be assigned to BDM.

BDM has the following shared interests outside of the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. Applications that involve biochemical pathways or medicinal chemistry as they relate to the development of antibiotics, diagnostics, drug manufacturing or delivery could be assigned to BDM if the research focuses on the bacterial pathogen. Those applications that focus on the chemical aspects of these processes could be assigned to BCMB.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Applications focused on the development and delivery of antimicrobial drugs that alter host gene function could be assigned to BST. Applications that focus on the biological aspects of antimicrobial drug development and testing could be assigned to BDM.

- **With the Genes, Genomes and Genetics [GGG] IRG:** Applications that utilize molecular genetics techniques for drug or molecular diagnostic development could be assigned to BDM, if the focus is on the bacterial pathogen. Studies in which the results will be broadly applicable across kingdoms (i.e., crosscutting studies) could be assigned to GGG.

- **With the Immunology [IMM] IRG:** Applications focused on the immune response to bacterial infection could be assigned to IMM. Those applications focused on bacterial infectious agents that utilize immunological reagents (i.e. antibodies) as a therapeutic agent or diagnostic tool, or those in which the immune response is not the primary focus, could be assigned to BDM.

Bacterial Biodefense Agents Special Emphasis Panel [IDM (11)]

The Bacterial Biodense Agents Special Emphasis Panel [IDM (11)] considers SBIR and STTR applications focused on bacterial biodefense agents and their toxins. Topics may include molecular- and bioengineering-based technologies, including biosensors, for the development of detection methods, diagnostics, and therapeutics.

Specific areas covered by BBA:

- Development of bacterial detection and diagnostic tools.
- Development of novel antibiotics or anti-infective agents and animal models for efficacy studies.
- Development of novel therapeutic processes or interventions to combat bacterial biodefense-related infections

BBA has the following shared interests within the IDM IRG:

- **With Bacterial Diseases, Food Safety and General Microbiology [BDM]:** Studies that focus on drug therapies or detection technologies for bacterial agents including food and water borne pathogens could be assigned to BDM. Studies to develop detection technologies or drug discovery for bacterial biodefense agents and their toxins could be assigned to BBA.

BBA has the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macroomolecular Biophysics [BCMB] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. Applications that involve biochemical pathways or medicinal chemistry as they relate to the development of antibiotics, diagnostics, drug manufacturing or delivery could be assigned to BBA if the research focuses on the bacterial biodefense agents and their toxins. Those applications that focus on the chemical aspects of these processes could be assigned to BCMB.

- **With the Genes, Genomes and Genetics [GGG] IRG:** Applications that utilize molecular genetics techniques for drug or diagnostic development could be assigned to BBA, if the focus of the work is on the bacterial biodefense agents and their toxins. Studies in which the results will be broadly applicable across kingdoms (i.e., crosscutting studies) could be assigned to GGG.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** Applications proposing development and validation of methods focusing on bacterial biodefense agents and their toxins detection, diagnostic and therapeutic may be assigned to BBA. Applications that focus on drug delivery, when the purpose is treatment of infections acquired by bacterial biodefense agents and their toxins are appropriate for the BBA. General development of novel gene and drug delivery technologies may be assigned to the BST IRG.

- **With the Immunology [IMM] IRG:** Applications focused on the immune response to bacterial infection could be assigned to IMM. Those applications focused on bacterial biodefense agents that utilize immunological reagents (i.e. antibodies) as a therapeutic agent or diagnostic tool, or those in which the immune response is not the primary focus, could be assigned to BBA.

Viral and Eukaryotic Pathogens Special Emphasis Panel [IDM (12)]

The Viral and Eukaryotic Pathogens Special Emphasis Panel [IDM (12)] considers Small Business Innovation Research [SBIR] and Small Business Technology Transfer [STTR] grant applications that deal with the detection, characterization and inactivation of eukaryotic toxins, viruses, eukaryotic pathogens and their vectors, as well as sterilization and bioremediation technologies.

Specific areas covered by VEP:

- Innovations in methods or technologies for the detection or quantitation of toxins, viruses, eukaryotic pathogens, or their vectors
- □□□□□ Development of anti-infective, antiviral, antimicrobial or antiparasitic agents
- □□□□□ Testing novel therapeutic agents that target viral, microbial or parasitic diseases
- Development of traps, biocides or pesticides active against disease vectors
- Advances in sterilization, decontamination or disinfection technologies

- Development in and novel applications of bioremediation

VEP has the following shared interests within the IDM IRG:

- **With Bacterial Diseases, Food Safety and General Microbiology [BDM]:** If an application focuses on the sterilization of foods or drinking water then assignment to BDM may be appropriate. If the focus is on the sterilization of non-food items then assignment to VEP may be appropriate.

VEP has the following shared interests outside the IDM IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BPC] IRG:** The BCMB IRG will not be implemented until later in 2004. In the interim, applicants may wish to review the guidelines for the BCS and BPC IRGs. If an application deals with diagnostics, therapeutics, pharmacology or toxicology as applied to drug discovery of non-infectious diseases then assignment to BCMB may be appropriate. If the focus is on infectious diseases or their therapeutics then assignment to VEP may be appropriate. If the focus is on eliminating nonpathogenic organisms or nontoxic compounds through bioremediation then assignment to BCMB may be appropriate. If the focus is on eliminating pathogenic organisms or toxic compounds then assigned to VEP may be appropriate.

- **With the Genes, Genomes and Genetics [GGG] IRG:** If an application deals with pathogenic organisms in an evolutionary or population genetics context then assignment to GGG may be appropriate. If the main objective is the study of is detection, infection, therapeutics, molecular microbiology and physiology then assignment to VEP may be appropriate.

- **With the Bioengineering Sciences and Technologies [BST] IRG:** If an application dealing with virology focuses primarily on developing technologies to introduce genes and drugs in a basic virology context or in developing viral vectors for delivery of genes, then assignment to BST may be appropriate. If the main focus is on detecting, characterizing or neutralizing pathogenic viruses then assignment to VEP may be appropriate.

- **With the AIDS and Related Research [AARR] IRG:** If an application focuses on diagnostics, vaccines, or drug delivery mechanisms to combat AIDS-associated infectious diseases then assignment to AARR may be appropriate. If instead, the focus is on other non-bacterial infectious diseases then assignment to VEP may be appropriate.

- **With the Immunology [IMM] IRG:** If an application dealing with host-pathogen responses focuses primary on the host immune response then assignment to IMM may be appropriate. If instead, the primary focus is on the pathogen then assignment to VEP may be appropriate. In the event the focus is on host-pathogen interactions, assignment should be based on the central thrust of the application.

- **With the Hematology [HEME] IRG:** If the primary interest is in the blood cells then assignment to HEME may be appropriate. If the main objective is to study the parasite, and characteristics of the infection that relate to the parasite, then assignment to the VEP may be appropriate.

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