U.S. Department of Health & Human Services

NIH Center for Scientific Review

ENQUIRE: Molecular and Cellular Biology Study Sections

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March 29, 2021

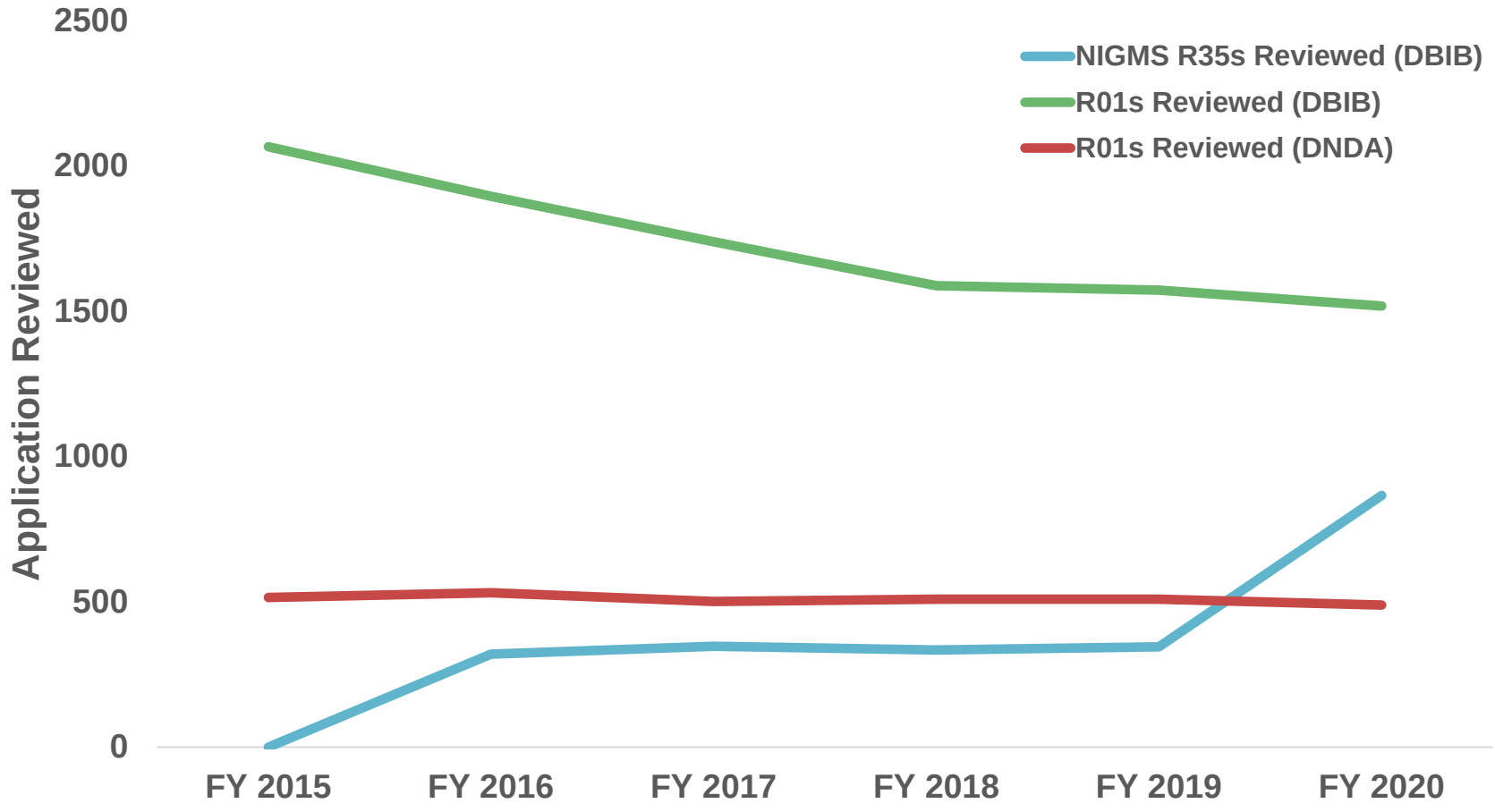
Molecular and Cellular Biology Study Sections: Problems to Address

- Many small study sections reviewing similar topics with the average number of applications received per round much less than optimal (70-80 applications per round)
- Neuroscience panels that include coverage of molecular or cellular phenomena that mirror topics reviewed by more general basic science panels even though there are not significant neuro-specific differences
- Collections of topics in many study sections that are not cohesively organized

Molecular and Cellular Biology Study Sections Application Numbers per Council Round

Study Section	Ave (2019-20)	Most Recent
Biochemistry and Biophysics of Membranes (BBM)	54	62
Biophysics of Neural Systems (BPNS)	49	53
Cellular Signaling and Regulatory Systems (CSRS)	60	43
Membrane Biology and Protein Processing (MBPP)	58	46
Molecular Genetics A (MGA)	60	34
Molecular Genetics B (MGB)	57	54
Molecular and Integrative Signal Transduction (MIST)	52	42
Molecular Neuropharmacology and Signaling (MNPS)	67	77
Macromolecular Structure and Function B (MSFA)	67	57
Macromolecular Structure and Function B (MSFB)	67	65
Macromolecular Structure and Function C (MSFC)	59	63
Macromolecular Structure and Function D (MSFD)	45	40
Nuclear and Cytoplasmic Structure/Function and Dynamics (NCSD)	46	58
Neurotransporters, Receptors, and Calcium Signaling (NTRC)	55	51
Prokaryotic Cell and Molecular Biology (PCMB)	66	46
Synapses, Cytoskeleton and Trafficking (SYN)	71	83

Evolving distribution of applications reviewed by CSR basic science panels



Two-Part Strategy to Address Issues

Part 1: Chartering of 3 New R35 Study Sections

Three new MIRA study sections have been chartered to begin this summer (Oct 2021 Council)

Maximizing Investigators' Research Award – A Study Section (MRAA)

Genomics, molecular genetics, and prokaryotic cell biology

Maximizing Investigators' Research Award – B Study Section (MRAB)

Biochemistry, chemical biology, chemistry, molecular biophysics and bioengineering

Maximizing Investigators' Research Award – C Study Section (MRAC)

Cell biology and Clinical/Translational studies in NIGMS supported areas (e.g., pharmacology, wound healing)

Part 2: ENQUIRE Process for Molecular and Cellular Biology Study Sections

- A panel of 14 experienced investigators from the cell biology, biochemistry/biophysics, molecular genetics, and neuroscience areas was assembled
- Each member had experience as a reviewer and/or applicant across multiple study sections of those involved in the Molecular and Cellular Biology Cluster
- Members were given representative sets of application titles and abstracts from each study section, study section guidelines, and workload information
- The external workgroup was charged with examining existing study section organization and recommending changes to optimize study section size and function
  - Changes could include modification of referral guidelines/boundaries, adding emerging fields, creating new study sections, disbanding study sections, or merging and redistributing topics

Summary of External Workgroup Recommendations

- Redistribute “general” cellular and molecular topics currently reviewed in neuro-specific study sections to study sections with broader focus
- Reorganize Cell Biology and Neurobiology study sections to have more cohesive focus/organization
- Merge undersubscribed computational biology panel into related structural biochemistry and biophysics panels
- Create separate DNA and RNA-centric molecular genetics panels from existing sister study sections
- Revisit the Molecular and Cellular Substrates of Complex Brain Disorders Special Emphasis Panel with the NIH Internal Workgroup
- Overall, the changes recommended by the external workgroup would lead to a decrease from 16 to 13 chartered R01 study sections in the Molecular and Cellular Biology Cluster

External Panel - Specific Recommendations

- Merge BBM, BPNS and MIST and parts of MNPS, NTRC involving transmembrane signaling to form two panels at a molecular or cellular level focus ("Cellular Pharmacology and Membranes", "Molecular Pharmacology and Membranes")
- Redistribute remainder of the neuro-specific topics from BPNS, MNPS, NTRC and SYN to two neurobiology-focused panels ("Neuro Cellular" and "Neuro Systems, Cellular & Molecular Drugs")
- Redistribute relevant topics from MBPP, NCSD and other non-neuro specific cell biology topics from NTRC & SYN to two cell biology panels ("Cytoskeletal Organelles & Trafficking", "Cell Structure Function & Motility")

External Panel - Specific Recommendations (cont)

- Merge topics from MSFD into three existing structure/function panels to form ("Structural Functional Biology A, B & C")
- Divide topics in MGA & MGB into RNA and DNA-centric panels ("DNA Molecular Biology" and "RNA Molecular Biology")
- Retain PCMB – Prokaryotic Cell and Molecular Biology with minor additions of metal homeostasis topics from MSFA
- Rename CSRS to Cell Cycle & Apoptosis
- Consider also including "Molecular and Cellular Substrates of Complex Brain Disorders Special Emphasis Panel" in the re-organization

NIH Internal Panel Meetings (Feb-Mar 2021)

- Internal panels included senior level individuals from the involved IC's (NIGMS, NINDS, NIMH, NIDA) and CSR staff including Division Directors and IRG Chiefs
- The internal panels were charged with examining recommendations from external workgroup for potential issues that could arise in the implementation of their recommendations
- Also viewed survey information collected from PO's and reviewers, as well as notes from observers who site visited the study sections to identify any issues that might arise with panel function or administrative aspects even if scientific scope was appropriate

NIH Internal Panel Recommendations

- Internal panel members expressed general concurrence with the recommendations of the external workgroup regarding the reorganization with a few minor modifications
  1. Recommended merging DNA & RNA Molecular Biology panels into one study section since application numbers have continued to fall since the internal panel met
  2. Recommended renaming Cellular/Molecular Pharmacology & Membranes Panels to Cellular/Molecular Signaling and Lipids Panels to avoid confusion with the pharmacology program at NIGMS
  3. Suggested that CSR revisit the Molecular and Cellular Substrates of Complex Brain Disorders Special Emphasis Panel via a subsequent ENQUIRE process in the context of a broader neuroscience cluster

Existing Study Sections	Proposed Study Sections
Biochemistry and Biophysics of Membranes (BBM)	Molecular Signaling and Lipids
Molecular and Integrative Signal Transduction (MIST)	Cellular Signaling and Lipids
Biophysics of Neural Systems (BPNS)	
Molecular Neuropharmacology and Signaling (MNPS)	Neuro-cellular
Neurotransporters, Receptors, and Calcium Signaling (NTRC)	Neuro-systems and Cellular and Molecular Drugs
Synapses, Cytoskeleton and Trafficking (SYN)	Cell Structure Function and Motility
Membrane Biology and Protein Processing (MBPP)	Cytoskeletal Organelles and Trafficking
Nuclear and Cytoplasmic Structure/Function and Dynamics (NCSD)	
Molecular Genetics A (MGA)	Molecular Genetics
Molecular Genetics B (MGB)	
Macromolecular Structure and Function A (MSFA)	Structural Functional Biology A
Macromolecular Structure and Function B (MSFB)	Structural Functional Biology B
Macromolecular Structure and Function C (MSFC)	Structural Functional Biology C
Macromolecular Structure and Function D (MSFD)	
Cellular Signaling and Regulatory Systems (CSRS)	Cell Cycle Apoptosis
Prokaryotic Cell and Molecular Biology (PCMB)	Prokaryotic Cell and Molecular Biology

Questions or Comments?