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## HEALTH AND MEDICINE DIVISION

BOARD ON HEALTH SCIENCES POLICY

# Understanding the Role of the Immune System in Improving Tissue Regeneration: A Workshop

November 2-3, 2021



#RegenMedForum

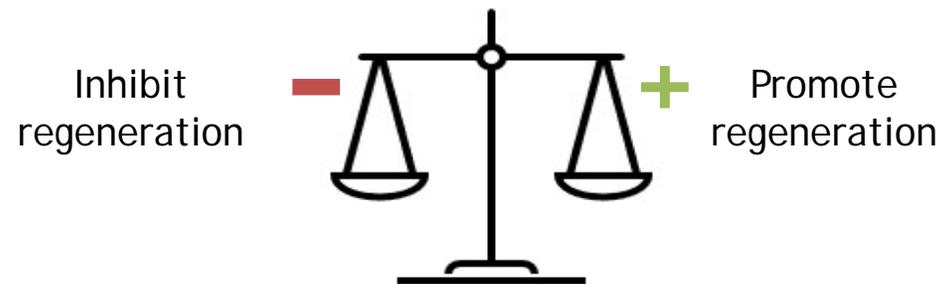


# How to optimize regenerative medicine outcomes?

- Early attempts to regenerate tissues focused primarily on stem/progenitor cells as a source of new tissues
- It is now recognized that the patient's **immune system** plays a key role in the outcome of tissue regeneration
- Specifics of the patient's immune system are likely to be responsible for known variability in tissue regeneration outcomes
- Can we leverage the patient's immune system to optimize tissue regeneration?



# Shifting immunological balance toward regeneration



The workshop will focus on two **overarching themes**:

1. Optimizing graft acceptance and integration with host tissues for cell-based regenerative therapies (Sessions I, II, and V)
2. Optimizing tissue microenvironment to promote endogenous regeneration and inhibit tissue fibrosis/scarring (Sessions III, IV, and V)

The final Session VI will be a Panel Discussion that will integrate presentations from the earlier Sessions to consider how to bring new therapies to the clinic



# Charge to the participants and the field

- Put the human patient at the center of the regenerative medicine paradigm
  - How can we account for the variability in patient responses to therapies?
  - What strategies are available to precisely manipulate a patient's immune system to optimize graft acceptance or endogenous tissue regeneration?
- Identify knowledge gaps in regenerative medicine to stimulate basic discovery science
  - What tools or preclinical models are needed to de-risk therapies?
  - What can be learned from advances in organ transplantation, immunological tolerance, wound healing, etc. that will propel regenerative medicine therapies forward?



# Planning Committee Members

## Nadya Lumelsky (co-chair)

National Institute of Dental and Craniofacial Research, NIH

## Kimberlee Potter (co-chair)

Department of Veterans Affairs

## Steven Becker

National Cancer Institute, NIH

## Jennifer Elisseff

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## Candace Kerr

National Institute on Aging, NIH

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## Richard McFarland

Advanced Regenerative Manufacturing Institute

## Rachel Salzman

American Society of Gene & Cell Therapy

## Sohel Talib

California Institute for Regenerative Medicine

## Daniel Weiss

International Society for Cell & Gene Therapy



# Reminders

- Ask questions by typing them into the **box below the webcast**.
- Please include your name and affiliation with your question.
- We will do our best to address as many questions as possible during the panel discussion periods.
- This workshop spans **two days** (November 2 and 3) and we hope you can join us both days to continue the discussions.

