

— 17th Annual —

RESPIRATORY DISEASE

Young Investigators' Forum

OCTOBER 14-17, 2021



Final Outcomes Report
AstraZeneca
Grant #64748967



Activity Summary

64748967	17th Annual Respiratory Disease Young Investigators' Forum		
Educational Objectives: Identify new areas of respiratory research that offer new inroads to effective therapies and treatment; Discuss research study designs that may improve current approaches to respiratory research; Evaluate strengths and weaknesses of the research presented and incorporate peer/expert feedback effectively to enhance data presentations; Review key strategies for career development as a physician scientist; Describe overall process and important components of securing grants to support research			
Intended Audience: Pulmonary, allergy and immunology fellows and junior faculty who are beginning their research careers.	Actual Reach: 30 young investigators; 9 expert faculty; 3 research advisors	Modality/# Activities: Three-day live virtual forum consisting of junior faculty/fellow presentations, expert faculty panel, and structured feedback	
Program Location: Virtual	Dates (Virtual Activity): October 14-16, 2021	Relevant Links: N/A	
Outcomes Levels: Moore's Level 1, 2, 3 and 4	Outcomes Planning: Pre-test and post-test; program evaluation		
Summary: The 17 th Annual Respiratory Disease Young Investigators' Forum aimed to connect young investigators with expert faculty and peers in the respiratory disease field to improve research methodologies, enhance presentation and communication skills, and stimulate an academic career in respiratory disease and allergy research. The meeting was successfully implemented from October 14-16, 2021, with 100% of evaluation respondents reporting that they would recommend this program to their colleagues.			



Program Overview

The 17th Annual Respiratory Disease Young Investigators' Forum, a live independent medical education activity accredited by National Jewish Health (NJH), was held virtually October 14-16, 2021. The Forum is designed to enable **pulmonary, allergy and immunology fellows and junior faculty** to present their research and interact with expert faculty in order to improve research methodologies and presentation skills, enhance communication in the field of respiratory disease and allergy, develop relationships with faculty mentors, assist in translating laboratory research into useful bedside application, and stimulate an academic career in respiratory disease and allergy research. Due to continuing safety concerns and travel restrictions due to COVID-19, the program was held virtually for the second time. In its 17th year, the Forum continues to prove to be a valuable and impactful annual event for fellows and junior faculty who are beginning their research careers.



“The networking was excellent. It was a small enough forum to feel comfortable communicating with fellow young investigators as well as the expert faculty in a non-threatening manner. The expert faculty presentations were also excellently prepared. A focus on work-life balance as well as diversity in the workplace will be a continual upcoming metric/discussion so an emphasis on these was excellent.”

-2021 Young Investigator



Program Design

The content of the program was based on basic science and clinical research in the field of respiratory disease submitted by young investigators, who compete for acceptance into the program and then serve as the program presenting faculty. The program enabled a diverse group of 30 fellows enrolled in fellowship programs such as allergy, respiratory tract disease, or pulmonary medicine, to present the results of their basic science or clinical research to an experienced expert faculty panel.

“Thank you. This was an exceptional experience and surpassed any expectations.”

- 2021 Young Investigator

The program consisted of:

- ✓ Personalized feedback and coaching from presentation advisors during rehearsals
- ✓ Clinical and scientific junior faculty presentations
- ✓ Small group discussions and mentoring
- ✓ Networking with peer leaders and expert faculty
- ✓ An expert faculty panel providing real time feedback
- ✓ Expert faculty presentations on topics relevant to junior faculty
- ✓ Q&A



Learning Objectives

1. Discuss new and emerging areas of respiratory research that offer new inroads to effective therapies and treatment
2. Identify best practices for designing a research study and multidisciplinary research team that may improve on current approaches to respiratory research
3. Evaluate the strengths and weaknesses of peer research presentations
4. Incorporate peer/expert faculty feedback effectively to enhance research presentations
5. Discuss key strategies for career development as a physician scientist
6. Describe comprehensive process for securing grant support for research

Early Career Funding Landscape

17th Annual Respiratory Disease Young Investigators' Forum
October 14-17, 2021

Neil Aggarwal, MD
University of Colorado – Anschutz Medical Campus

Marie Egan, MD
Yale School of Medicine



Pictured: Neil Aggarwal, MD,
University of Colorado – Screenshot of
Expert Faculty Presentation



Young Investigator Awards

Final Outcomes Report

The top presenting faculty with the highest scores in both Basic Science and Clinical Research were presented with a plaque and awarded an educational grant to be used toward future research or to attend a national respiratory meeting such as the AAAAI, ATS, or CHEST. The grant is provided to the recipient's institution for distribution to the recipient according to policies. The young investigator with the highest evaluation scores from her peers was also recognized with an award. To recognize the achievement of the attending fellows, all 30 were presented with an award certificate indicating participation at the Forum. A CME certificate will also be provided by NJH.

Basic Science
Research

First Place – **Umar Salimi, MD (Yale University)**



Clinical Research

First Place –
Matthew Moll, MD, MPH (Brigham and Women's Hospital)





Young Investigator Awards

Basic Science
Research

Second Place –
Georgios
Triantafyllou, MD
(University of
Pittsburgh Medical
Center)



Basic Science
Research

Third Place –
David Ziehr, MD
(Massachusetts
General Hospital)



Peer Award

Marlene Cano, MD
Washington
University in Saint
Louis, MO



Clinical Research

Second Place – **Esther**
de Boer, MD, PhD
(University of
Colorado)



Clinical Research

Third Place – **Aaron**
Baugh, MD
(University of
California San
Francisco)





Dashboard: Activity Impact

30

**Abstracts
 Received/Accepted/Attendees**

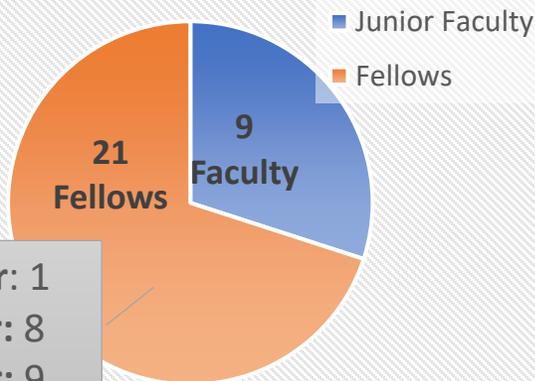
Expert Faculty 9
Research Advisors 3

What is the biggest benefit of participating in the forum?

“Being able to present your research to a panel of experts and peers in the field, but not necessarily in the exact niche of your research, and receiving productive feedback.”

-Young Investigator, 2021

Accepted Investigators



■ Junior Faculty
 ■ Fellows

1st Year Faculty Position: 6
 2nd and 3rd Year Faculty Position: 3

2nd year: 1
 3rd year: 8
 4th year: 9
 5th year: 3

100%
 would recommend program to colleagues

96%
 reported activity positively influenced interest in pursuing a career as a physician-scientist

- Research Disease States**
- Asthma
 - COPD
 - COVID-19
 - Cystic Fibrosis
 - ILD
 - Pulmonary Hypertension
 - Sleep



Expert Faculty



Neil Aggarwal, MD

Associate Professor of Medicine
Director of Critical Care Research
Division of Pulmonary Sciences & Critical
Care Medicine
University of Colorado – Anschutz Medical
Campus
Denver, CO



Harold R. Collard, MD

Associate Vice Chancellor of Clinical Research
Professor in Residence in the Division of Pulmonary
and Critical Care Medicine
Department of Medicine
Director of the UCSF Clinical and Translational
Science Institute (CTSI)
University of California, San Francisco
San Francisco, CA



Mario Castro, MD, MPH

Division Chief, Pulmonary, Critical Care and Sleep Medicine
Vice Chair for Clinical and Translational Research
Director, Frontiers Clinical and Translational Science
Institute at the University of Kansas
Director, Rainbow Clinical Trials Science Unit
The University of Kansas School of Medicine
Kansas City, KS



Marie Egan, MD

Professor of Pediatrics (Respiratory) and of Cellular
And Molecular Physiology
Director, Cystic Fibrosis Center
Vice Chair for Research, Department of Pediatrics
Yale School of Medicine
New Haven, CT

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Final Outcomes Report

Expert Faculty



Ravi Kalhan, MD, MS

Professor of Medicine and Preventive Medicine
Director, Asthma and COPD Program
Associate Chief – Clinical & Translational Research
Division of Pulmonary and Critical Care Medicine
Northwestern University Feinberg School of Medicine
Co-Director, Center for Education and Career
Development, Northwestern University Clinical and
Translational Sciences (NUCATS) Institute
Chicago, IL



Elizabeth Matsui, MD, MHS

Professor, Department of Population Health and
Department of Pediatrics
Associate Chair of Research, Department of Population
Health
Associate Director, Health Transformation Research
Institute
University of Texas at Austin Dell Medical School
Austin, TX



Barry Make, MD (Program Co-Chair)

Professor of Medicine
Division of Pulmonary, Critical Care & Sleep Medicine
Co-Director, COPD Program
Director, Pulmonary Rehabilitation & Respiratory Care
National Jewish Health
Denver, CO

“It is always a joy to be a part of the Young Investigators’ Forum, and the variety of research projects this year was noteworthy. Thank you to all our Young Investigators for participating, and for furthering respiratory health. I am truly inspired by this next generation, and encouraged by the diversity of institutions represented. I believe that forums like this, by providing mentorship and support at a crucial juncture, can play a significant role increasing the numbers of physician-scientists.”

Barry Make, MD
Program Co-Chair and Former Research Advisor

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RESPIRATORY DISEASE Young Investigators' Forum



Final Outcomes Report

Expert Faculty



Susanna A. McColley, MD

Scientific Director, Interdisciplinary Research Partnerships
Stanley Manne Children's Research Institute
Associate Director for Child Health and Director, TL1 Program
Northwestern University Clinical and Translational Sciences Institute
Editor-in-Chief, Pediatric Pulmonology
Attending Physician, Pulmonary and Sleep Medicine
Ann & Robert H. Lurie Children's Hospital of Chicago
Professor of Pediatrics
Northwestern University Feinberg School of Medicine
Chicago, IL



Jennifer Taylor-Cousar, MD, MSCS, ATSF (Program Co-Chair)

President-elect, Medical Staff
Medical Director, Clinical Research Services
Co-Director, Adult Cystic Fibrosis Program
Director, Cystic Fibrosis Therapeutics Development Center Adult Program
Professor of Medicine and Pediatrics
Division of Pulmonary, Critical Care & Sleep Medicine
Division of Pediatric Pulmonary Medicine
National Jewish Health
Denver, CO



Victor E. Ortega, MD, PhD, ATSF
Senior Associate Consultant
Department of Internal Medicine
Division of Pulmonary Medicine
Mayo Clinic in Arizona
Phoenix, AZ

“As a former Young Investigator and former Research Advisor for YIF, I was honored to be one of the program Chairs this year. This program is more important than ever as COVID has interrupted research in many areas to focus on clinical patient care. COVID has also really driven home for all of us in medicine how very crucial the physician-scientist’s role is.”

Jennifer Taylor-Cousar, MD, MSCS, ATSF
Program Co-Chair; Former Research Advisor;
Previous YI; 1st Time Faculty Panelist



Research Advisors

Final Outcomes Report



Jane E. Gross, MD, PhD
Assistant Professor, Department of Pediatrics and
Medicine
Divisions of Pediatric Pulmonary Medicine and
Pulmonary, Critical Care and Sleep Medicine
National Jewish Health
Denver, CO

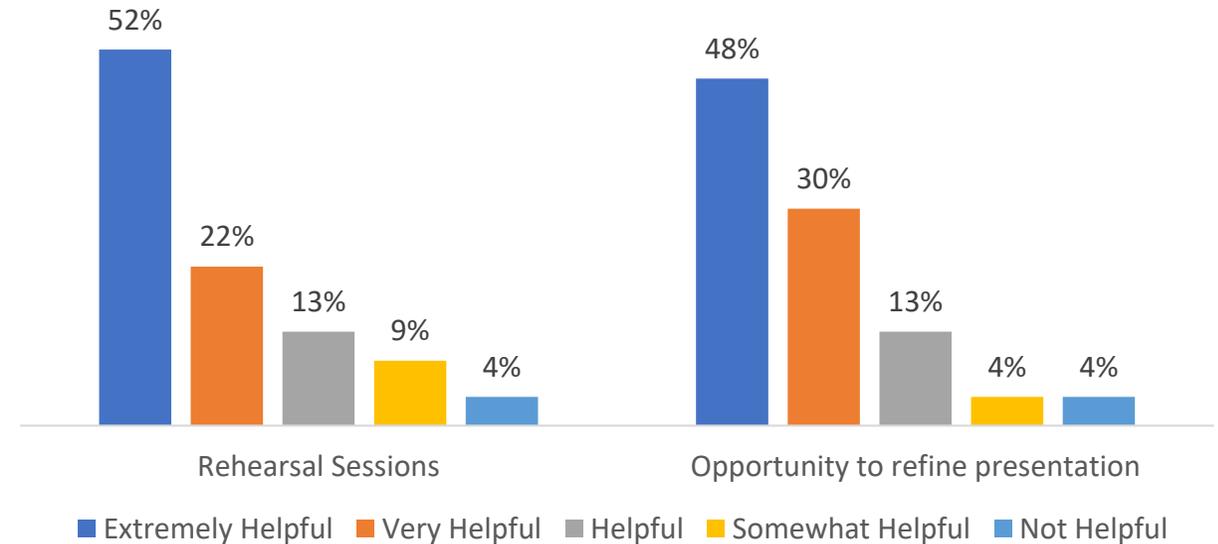


Victor E. Ortega, MD, PhD, ATSF
Senior Associate Consultant
Department of Internal Medicine
Division of Pulmonary Medicine
Mayo Clinic in Arizona
Phoenix, AZ



Deepika Polineni, MD, MPH
Assistant Professor
Pulmonary, Critical Care and Sleep Medicine
University of Kansas Medical Center
Kansas City, KS

Young Investigators Rate Value of Rehearsal Session/Opportunity to Refine Presentation



"I fondly remember being a participant in the Young Investigators' Forum during my fellowship training. It was a pleasure to give back to this excellent program as a Research Advisor by mentoring inspiring emerging physician-scientists. I look forward to these Young Investigators being future leaders in basic science and clinical research in pulmonary medicine. ."

- Jane Gross, MD, PhD (2021 Research Advisor)



Young Investigators

Final Outcomes Report

Brian Ahn, MD (BS) - *University of Colorado*
Resident T Cells In Resolution Of Acute Lung Inflammation

Aaron Baugh, MD (CR) - *University of California San Francisco*
Worse Sleep Quality & Social Adversity are Associated with Increased COPD Exacerbation Risk

Charles Bengtson, MD, MS (BS) - *University of Kansas Medical Center*
Airway Inflammation Impairs Rescue Of Cfr Function In Response To Modulator Therapy In Cystic Fibrosis

Marlene Cano, MD, PhD (BS) – *Washington University of in Saint Louis, MO*
Mitochondrial Dysfunction and Alloimmunity in Chronic Lung Allograft Rejection

Joe Chiles III, MD (BS) - *University of Alabama at Birmingham*
Whole Genome Sequence Analysis of Dyspnea in Current and Former Smokers in the COPDGene Cohort

Esther de Boer, MD, PhD (CR) - *University of Colorado*
Mitochondrial Dysfunction Associated With Post-Covid-19 Syndrome

***(BS) Basic Science**
***(CR) Clinical Research**



Young Investigators

Auyon Ghosh, MD, MPH (CR) - *Brigham and Women's Hospital*

Alpha-1 Antitrypsin MZ Heterozygosity is a Clinical and Biological Endotype of Chronic Obstructive Pulmonary Disease

Khushboo Goel, MD (BS) - *University of Colorado*

Pulmonary vascular remodeling associated with chronic smoking, COPD, and group III pulmonary hypertension

Sue Gu, MD (BS) - *University of Colorado*

Chronic hypoxia results in expansion of right ventricular CCR2+ macrophages

Arnav Gupta, MD (BS) – *University of Colorado*

Deconvolution of Primary Transcriptional Responses to Wood Smoke Particles in Airway Epithelial Cells Provides a Novel Approach to Target Discovery

Manuel Izquierdo, DO (CR) - *Wake Forest Baptist Health*

Clinical Implications of Bronchiectasis on COPD Risk and Severity and the Role of α 1-Antitrypsin Genetic Variation in Current/ex-Heavy Smokers

***(BS) Basic Science**

***(CR) Clinical Research**



Young Investigators

Shannon Kay, MD, MS (BS) - *Yale University*

Sex-Specific Gene Expression in the Immune Compartment of Pediatric Asthma

Jennifer Keen, MD (BS) – *University of Minnesota*

Dicarbonyl Stress Impairs Right Ventricle Function in Preclinical Pulmonary Arterial Hypertension

Jennifer Krall, MD (BS) - *Wake Forest Baptist Health*

Fenofibrate Improves the Muscle Metabolic Profile in Aged But Not Adult Lung Injured Mice

Michael Lam, MD, PhD (BS) - *University of California San Francisco*

Chronic hypoxia results in expansion of right ventricular CCR2+ macrophages

Arnav Gupta, MD (BS) – *University of Colorado*

Genome-wide Profiling of Active cis-Regulatory Elements Reveals Dynamic Transcriptional Programs in Peripheral Leukocytes During COVID-19 associated Acute Respiratory Distress Syndrome

***(BS) Basic Science**

***(CR) Clinical Research**



Young Investigators

Final Outcomes Report

Cathryn Lee, MD (CR) - *University of Chicago*

Inhalational Exposures and Fibrotic Interstitial Lung Disease: Prevalence, Pulmonary Function, and Survival in the Canadian Registry for Pulmonary Fibrosis

Justin Lui, MD (CR) - *Boston University School of Medicine*

A Random Forest Decision Tool to Risk Stratify Patients for Right Heart Catheterization for Diagnosing Pulmonary Hypertension in Systemic Sclerosis

David MacDonald, MD (CR) - *University of Minnesota*

Chronotropic Index During 6-minute Walk and Acute Respiratory Events in COPD Gene

Aravind Menon, MD (CR) - *Brigham and Women's Hospital*

Interstitial Lung Abnormalities, Emphysema, and Spirometry in Smokers

Matthew Moll, MD, MPH (CR) – *Brigham and Women's Hospital*

Development of A Blood-Based Transcriptional Risk Score for Chronic Obstructive Pulmonary Disease

***(BS) Basic Science**
***(CR) Clinical Research**



Young Investigators

Peter Moore, MD (BS) - *University of Colorado*

Monocyte-derived interstitial macrophages are recruited to areas where inflammation was induced by intratracheal lipopolysaccharide and have distinct gene expression from resident macrophages

Eli Rhoads, MD (CR) - *University of Nebraska Medical School*

Characterizing the Preterm Microcirculation: Cutaneous Vascular Function, Microvessel Density, Angiogenic Cytokines, and Blood Pressure at 6 months of Age

Umar Salimi, MD (BS) – *Yale University*

Effects of Bacterial Elastase on Alveologenesis following Neonatal Pneumonia

Joseph Simonson, MD (CR) - *Donald and Barbara Zucker School of Medicine at Hofstra/Northwell*

Comparison of Sleep Apnea Prevalence and Severity Across World Health Organization Pulmonary Hypertension Groups

Gail Stanley, MD, MPH (BS) – *Yale School of Medicine*

Personalized Bacteriophage Therapy in Cystic Fibrosis

Peter Szachowicz, MD (BS) - *University of Iowa*

Complement activation in young mice with severe COVID-19

***(BS) Basic Science**

***(CR) Clinical Research**



Young Investigators

Final Outcomes Report

Georgios Triantafyllou, MD (BS) - *University of Pittsburgh Medical Center*

Mitochondria Targeted Reactive Oxygen Species Scavenging With MitoTEMPO Improves Exercise-Induced Pulmonary Hypertension In A Novel Rat Model Of Combined Pre- And Post-Capillary Pulmonary Hypertension

Aaron Vose, MD (BS) - *Duke University*

Hyaluronan regulates AT2 cell proliferation at the terminal airway following Ozone exposure

David Ziehr, MD (BS) – *Massachusetts General Hospital,*

Inhibition of lactate export via monocarboxylate transporter 4 prevents myofibroblast differentiation and ameliorates pulmonary fibrosis

Richard Zou, MD (CR) - *University of Pittsburgh Medical Center*

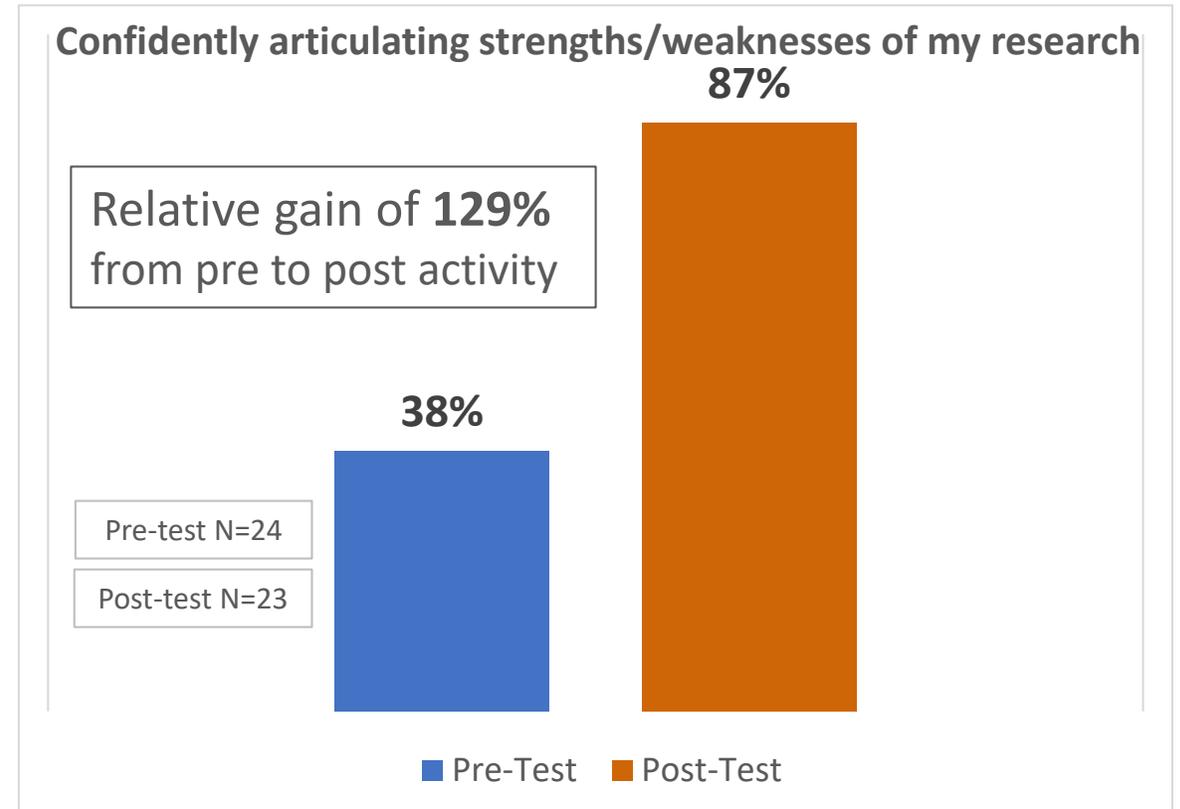
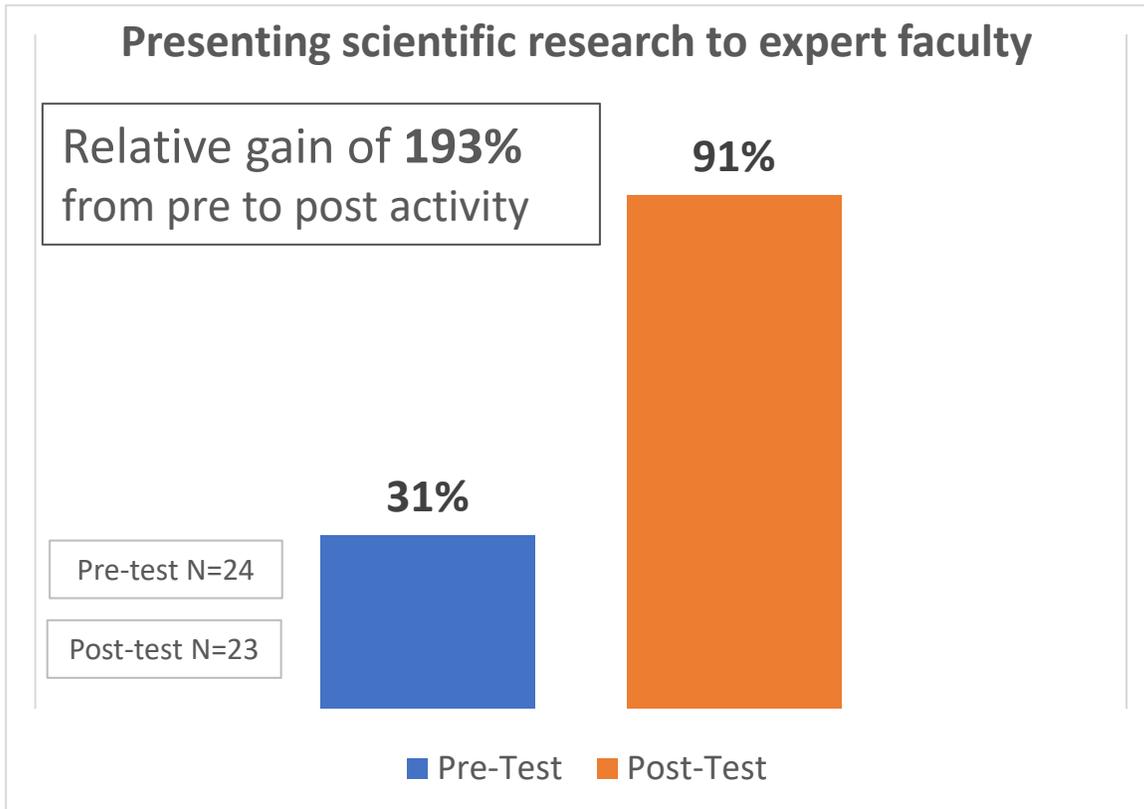
Characterizing Trajectories of Change of Muscle Mass in a Tobacco-Exposed Longitudinal Cohort

***(BS) Basic Science**
***(CR) Clinical Research**



Pre to Post Activity Evaluation

Young Investigators report being “Very Confident” or “Confident” with:

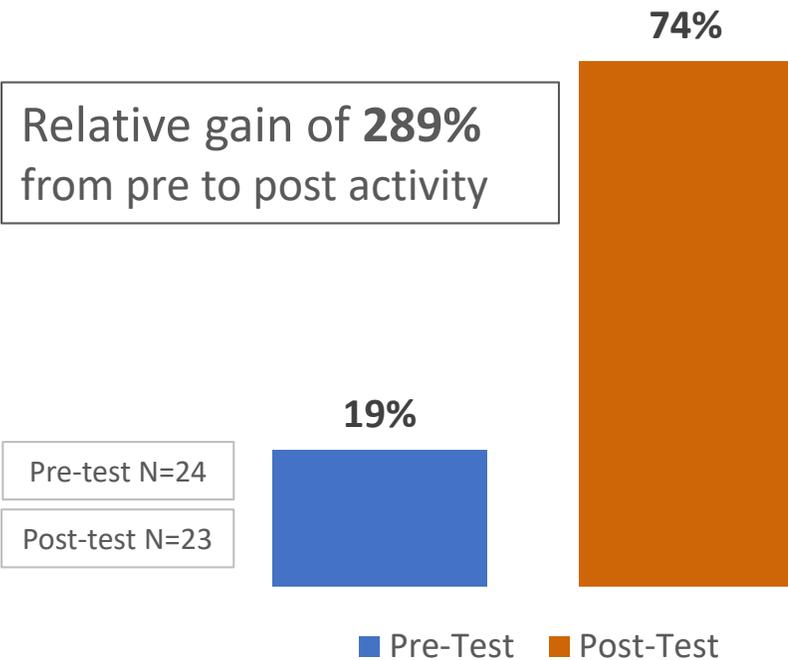




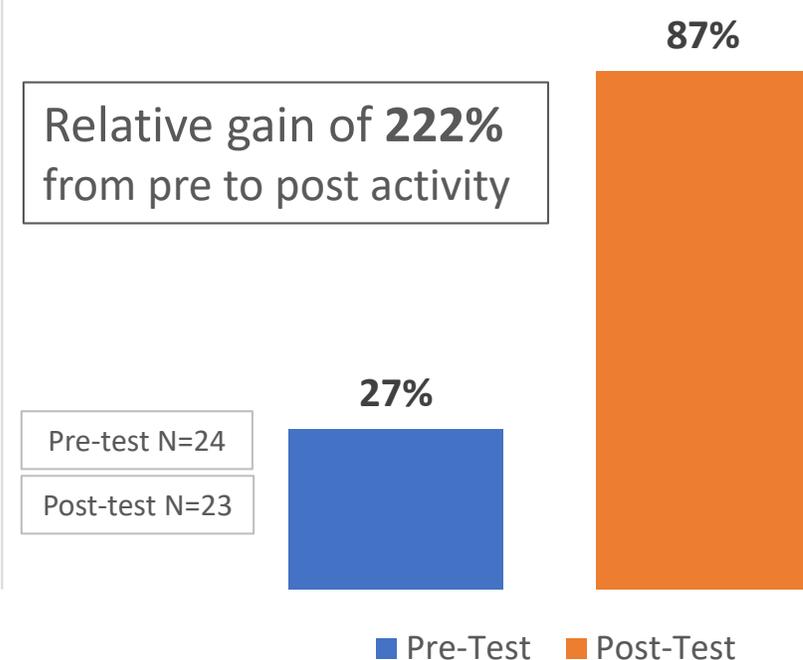
Pre to Post Activity Evaluation

Young Investigators report being “Very Confident” or “Confident” with:

Networking with Peer Researchers



Seeking input/advice from senior scientists in the field





Pre to Post Activity Evaluation

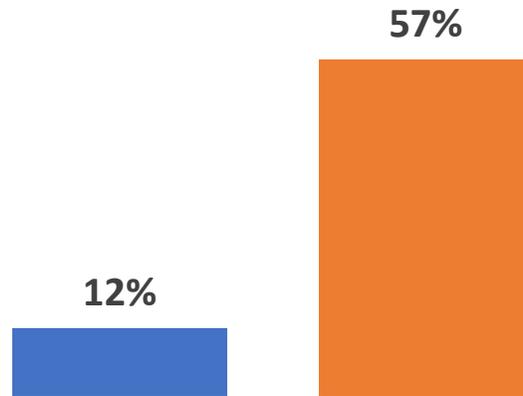
Young Investigators report being “Very Confident” or “Confident” with:

Identifying the process for securing grant support

Relative gain of **375%**
from pre to post activity

Pre-test N=24

Post-test N=23



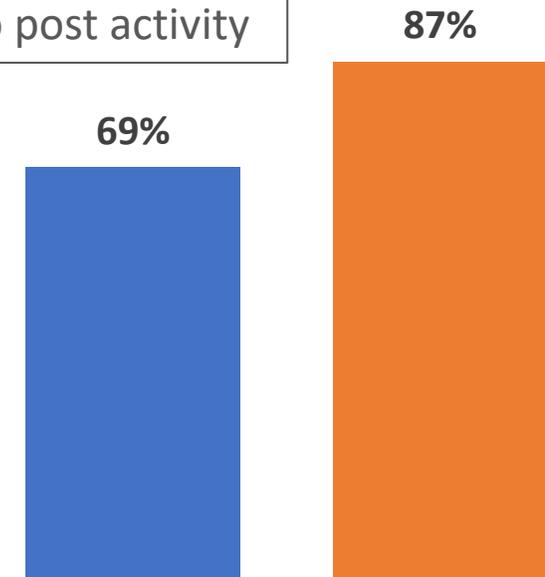
■ Pre-Test ■ Post-Test

Incorporating peer/expert feedback to enhance presentations

Relative gain of **26%**
from pre to post activity

Pre-test N=24

Post-test N=23



■ Pre-Test ■ Post-Test



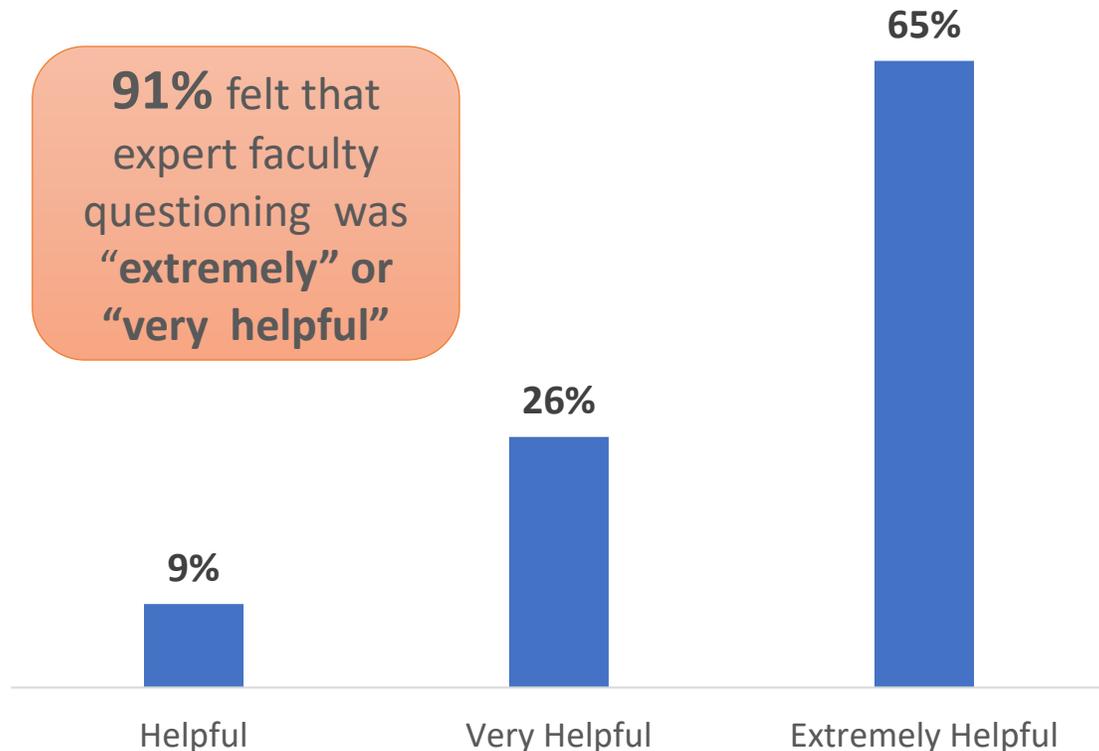
Evaluation - Expectations

Final Outcomes Report

Young investigators indicate the extent that the following components helped meet their expectations:

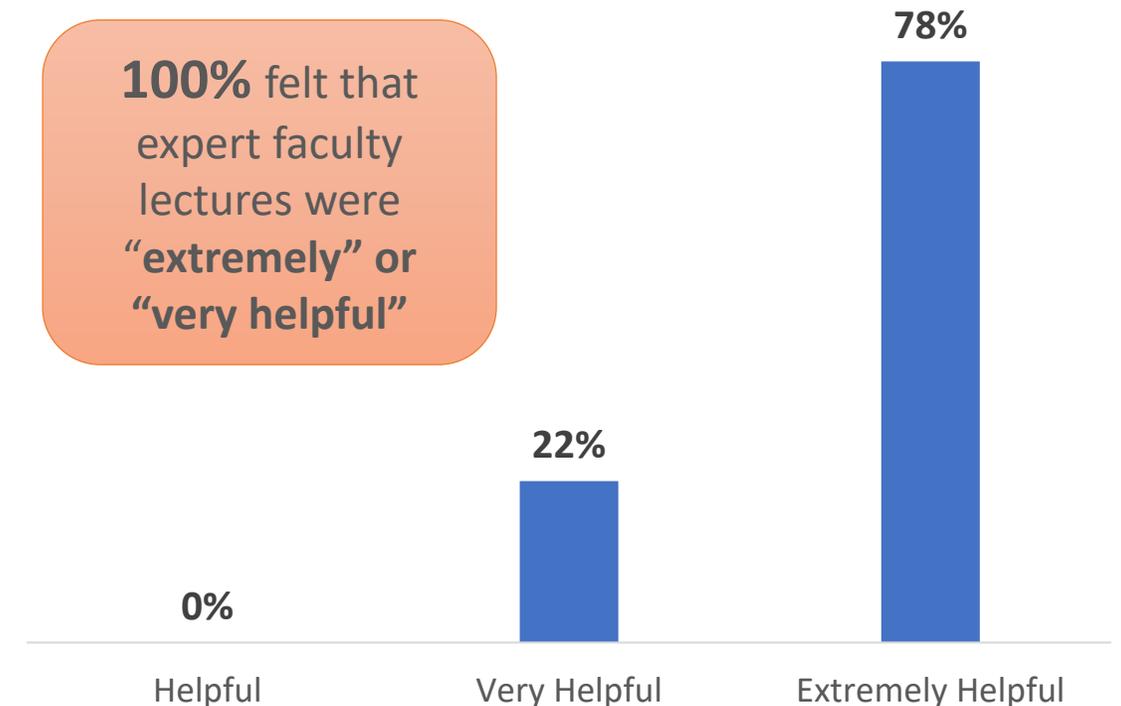
Expert Faculty Questions and Feedback N=23

91% felt that expert faculty questioning was "extremely" or "very helpful"



Expert Faculty Lectures N=23

100% felt that expert faculty lectures were "extremely" or "very helpful"



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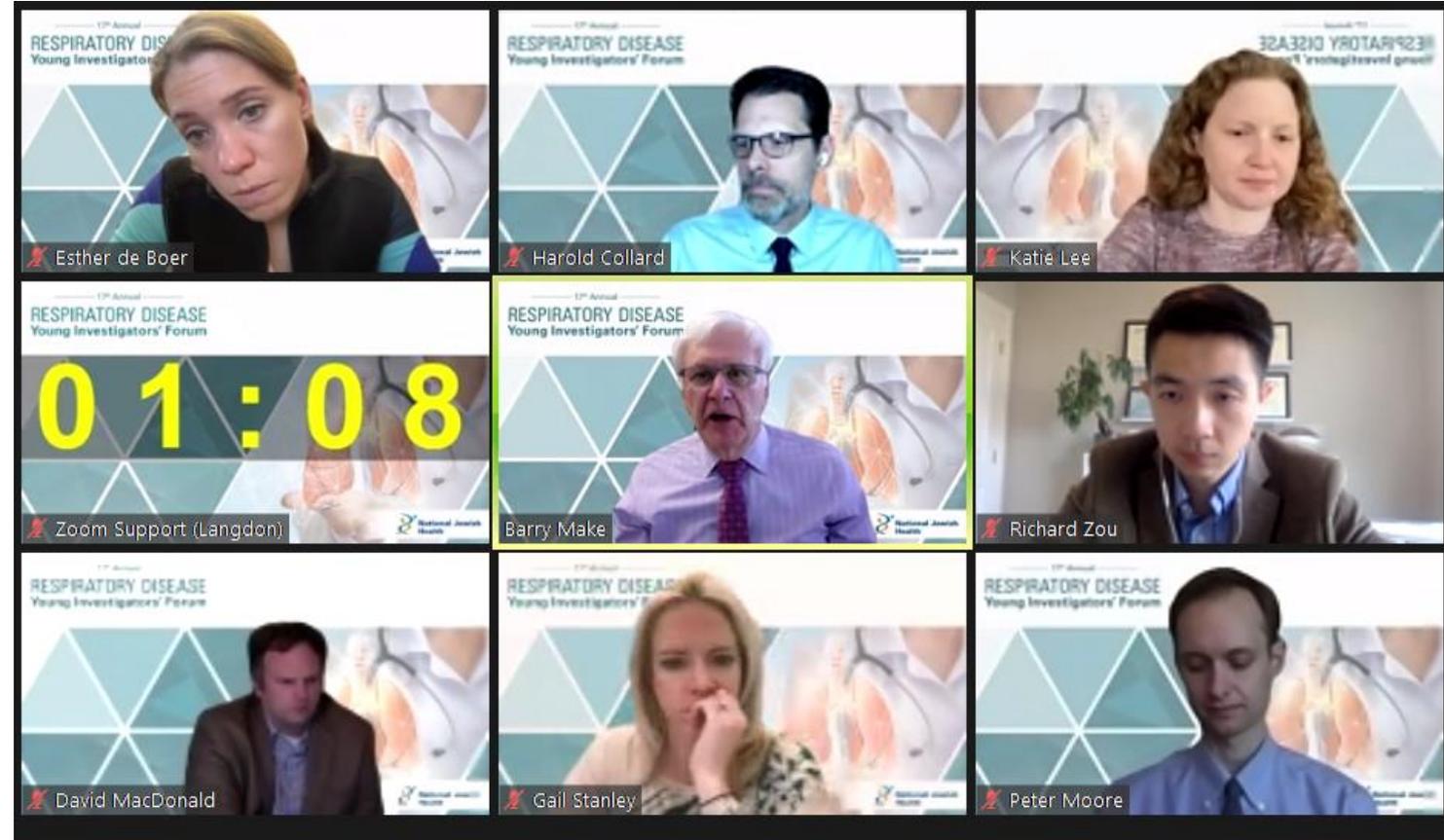


Final Outcomes Report

Evaluation Results

“I had an amazing experience participating in the 17th Annual Young Investigator Forum! I got invaluable input from expert faculty on how to navigate a career as a physician scientist. In my opinion, the best part was that I got exposed to research done by my peers (senior pulmonary fellows). It was really cool to see what everyone has been doing. I cannot think of another event where only young physician scientists gather and exchange ideas. The YIF is a truly unique opportunity!”

- 2021 Young Investigator Winner



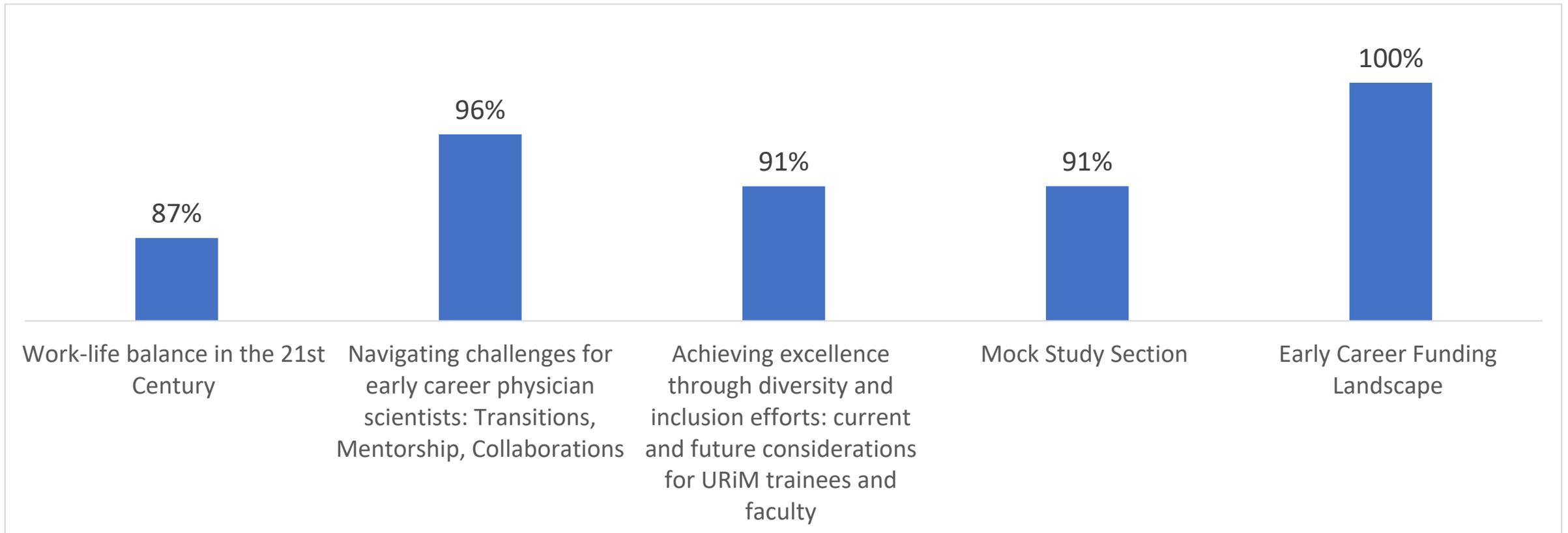


Evaluation – Expert Lectures

Final Outcomes Report

Young Investigators rank expert faculty topics from “extremely helpful” to “very helpful”:

N=23

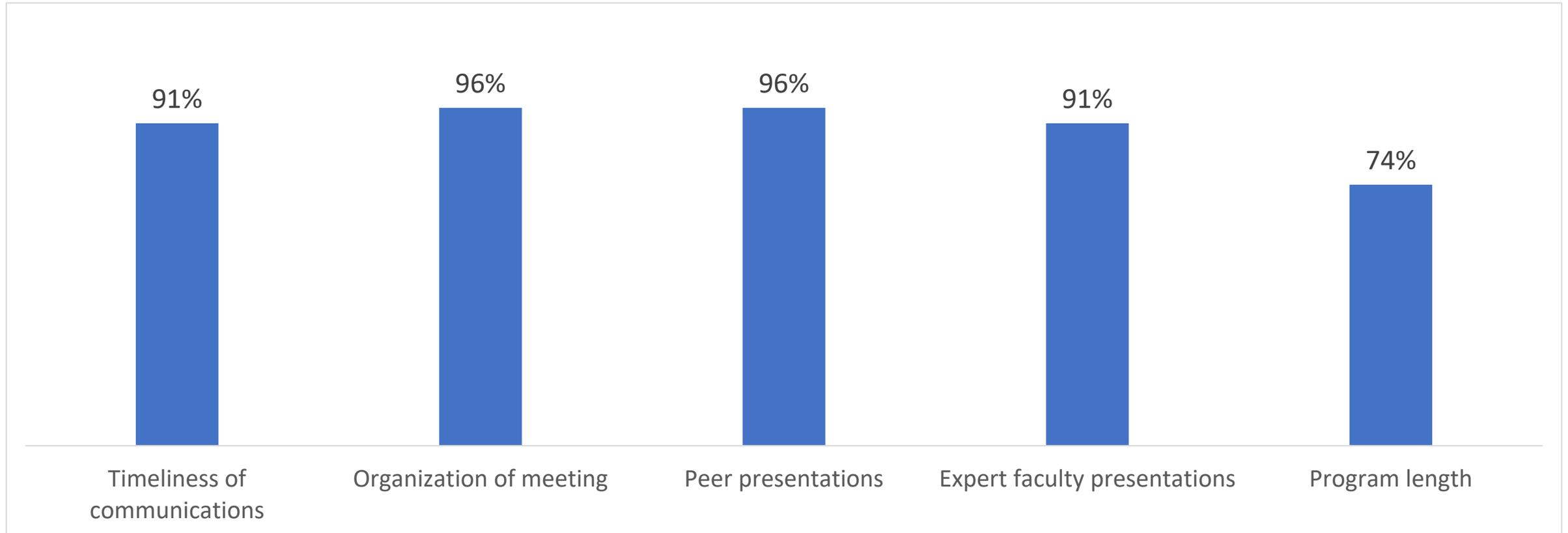




Evaluation – Overall Program

Young Investigators rank the following program components as “Excellent”

N=23





Evaluation – Overall Program

- ✓ **100%** reported the material was **presented in an objective manner and free of commercial bias**
- ✓ **96%** reported that the **educational content met the learning objectives**
- ✓ **96%** reported that the **expectations for this forum were met or exceeded**
- ✓ **96%** reported that the **activity positively influenced interest in pursuing a career as a physician scientist**
- ✓ **100%** reported that, in comparison to other professional development activities attended, **this activity was as helpful or more helpful toward meeting professional goals**
- ✓ **59%** reported they would **modify other abstract submissions based on feedback received during this activity**

“Thank you for this incredible opportunity. I feel inspired and invigorated.”

- 2021 Young Investigator



Participant Take Aways

- ✓ There are many ways we can (be) more mindful about social inequity in our research and to be active in working against societal inequities.
- ✓ I have a clearer understanding of NIH and non-NIH funding.
- ✓ To see the work being done by my peers was both inspirational and thought-provoking and also helped to develop a shared experience of what it is like to be at this stage in a career consisting of clinical and research work. I had a great time and will recommend this to others in the future!
- ✓ There is tremendous opportunity for scientific collaboration via peer networking at small meetings.
- ✓ There is a community of physician-scientists at my level, and at higher levels that can help to advance science. There are many avenues for success and opportunities to receive mentorship from faculty at outside institutions.
- ✓ Research career pathway can and will look a little different for every individual. It will be fraught with setbacks and difficulties but worth continuing to move forward.
- ✓ Current funding landscape is a challenge shared among all enterprising young investigators.



Intent to Change

- ✓ I am considering industry collaborations more strongly, and incorporating additional omics and mechanistic investigations into my work.
- ✓ I am even more motivated to pursue a career as a physician scientist.
- ✓ I think, instead of changing my trajectory, this may clarify my trajectory or at least better inform my next steps and aspirations and expectations. Though there is a specific study that I had been considering previously and would now like to actively pursue.
- ✓ I will seek more collaboration and mentorship outside of my institutions.
- ✓ Being more pro-active about looking at non-NIH funding opportunities.
- ✓ Attendance at more small pulmonary meetings, following up on peer/faculty contacts made.
- ✓ More confident in goals for grant support and will incorporate advice from the mock study session to make proposal stronger.
- ✓ Email faculty members from other institutions who I networked with to discuss research.
- ✓ Look for opportunities to become a co-investigator on trials while pursuing clinical work.



Accreditation

Final Outcomes Report

NJH is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The NJH Office of Professional Education produced and accredited this program and adhered to the updated ACCME guidelines.

NJH designated this activity for **15.5 AMA PRA Category 1 Credits™**.





