

Presentation to the  
American Society for Biochemistry and Molecular Biology

***Research Impact Under COVID-19  
and the Pandemic Normal***

Dr. Melur K. “Ram” Ramasubramanian  
Vice President for Research, University of Virginia

David Kennedy, Vice President, Costing &  
Financial Compliance, Council on Governmental Relations



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# COGR Overview

- ▶ Council on Governmental Relations ([www.cogr.edu](http://www.cogr.edu)), established in 1948
- ▶ ~190 member institutions; staff of six
- ▶ COGR advocates for policies and practices that reflect the mutual interests and separate obligations of federal agencies and research institutions as it relates to research and graduate education
- ▶ Active Board and Committees, 50 individuals from member institutions
- ▶ Regular collaboration with Higher Ed Association and other partners

# Financial Crisis and “Pandemic Normal”

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- ▶ Model for estimating research output loss and financial impact
- ▶ Challenges of doing research under the new “Pandemic Normal”
- ▶ Advocates for renewed commitment and a substantial infusion of new research investment
- ▶ Federal leaders, research institutions, and all stakeholders must rally around the longstanding Federal Government-Research Institution Partnership

# Why this Topic Matters

- ▶ The Research Impact Metric (RIM) Model has shown: 1) research output losses between **20 and 40 percent**, 2) financial disinvestment in the **hundreds of millions** of dollars at individual institutions, and 3) potential impact in the **tens of billions** of dollars across the entire U.S. research enterprise.
- ▶ We are at risk of losing a whole cohort of graduate and post-doctoral students seeking training and education, which includes researchers from underrepresented groups, minorities, women, and junior researchers.
- ▶ A new “Pandemic Normal” for how research is conducted has emerged—and inefficiencies are unavoidable.
- ▶ Understanding the impact is paramount to maintaining the global competitiveness, technological leadership, and the economy of the United States.

# Estimation of COVID-19 related losses in Research

1. Compensation without work for graduate students and some “non-designated” personnel.
2. Replacement costs for unusable (expired) materials and supplies (sunk cost), travel for research activities and conferences that were allowed and spent without travel actually taking place.
3. Repair and recommissioning costs for research infrastructure including equipment and instrumentation, cell lines, and animal models that have to be recreated and shared among many projects and cannot be charged to a single project. Additional costs include general laboratory supplies such as gases, chemicals, protective gear depleted during the ramp down period and animal costs. For social science researchers, costs associated with rehiring and retraining of social workers to support research going forward.
4. Personnel costs during the ramp up period to get the labs fully operational before actual research activities can be undertaken.
5. Support costs for graduate students on contracts and grants that have expired or reneged by the sponsor to allow for students to make progress towards their degree.
6. Institutional F&A loss associated with all the above.
7. **Lost Revenue**

# Expenditure data excerpts— salaries, supplies & materials trend

Comparisons:	March FY'19/FY'20 (\$M)	April FY'19/FY'20 (\$M)	May FY'19/FY'20 (\$M)
Equipment	.9/1.3	.8/.4	.49/.19
Materials & Supplies	2.6/2.3	3.9/2.9	2.9/1.8
Faculty Salaries	7.1/7/3	6.9/7.2	7.2/7.2
GTA/GRA	1.0/1.1	1.0/1.7	1.6/1.3
Fellowships	1.0/0.77	0.8/0.8	1.2/0.9
Travel	.52/.40	0.7/0.1	0.55/0.04
F&A	6.8/7.1	6.8/7.5	7.6/6.5



# Questions to PIs (Survey) (I/III)

- Compensation without work for graduate students and some “non-designated” personnel.
  - *List the names of the student or staff, the project account they were on before March 17, and until June 30<sup>th</sup> continued to receive payment without work assigned. If some work was done, what proportion of the personnel time was truly for unassigned work status?*
- Replacement costs for unusable (expired) materials and supplies (sunk cost), travel for research activities and conferences that were allowed and spent without travel actually taking place.
  - *Is this a listed item on your grant? IF so, indicate what materials have to be repurchased, its quantity, and cost?*
  - *Travel you spent money that was non-refundable, but a trip you must take as part of the grant obligations? What are they and estimated cost?*

# Questions to PIs (Survey) (II/III)

- Repair and recommissioning costs for research infrastructure including equipment and instrumentation, cell lines, and animal models that have to be recreated and shared among many projects and cannot be charged to a single project. Additional costs include general laboratory supplies such as gases, chemicals, protective gear depleted during the ramp down period and animal costs. For social science researchers, costs associated with rehiring and retraining of social workers to support research going forward.
  - *What equipment, machinery, instrumentation was shut down and what is the justification for additional funds to start up? What is the required actions and the costs associated with it?*
- Personnel costs during the ramp up period to get the labs fully operational before actual research activities can be undertaken.
  - *Estimate for how long it would take and the person hours involved with costs to ramp up to your normal 100% operation?*



# Questions to PIs (Survey) (III/III)

- Support costs for graduate students on contracts and grants that have expired or reneged by the sponsor to allow for students to make progress towards their degree.
  - *Provide details on the grant, the status of the student, project work to be completed by the student for the degree, time, and cost?*
- Institutional F&A loss associated with all the above.
  - *Provide automatic calculation.*

# PI Direct Input on Losses (Currently at 9.4% response rate)

School	Total Compensation Charged to Grants	Calculated Total Loss on Salary & Fringe (Based on PI Input)	Calculated F&A Loss	Total Impact Loss Estimated	Response Rate
Grand Total	\$79,178,569.96	\$1,631,955.84	\$ 905,671.95	<b>\$2,537,627.79</b>	9.41%

Percent loss (**Personnel Only**) =3.2% (9.4% response rate)

Scaled to 100% response rate: Losses are **32%** through August.

# Pandemic Normal in Research

- Restricted access to research buildings and research laboratories
- Social distancing within the laboratory
- Staggered shift-scheduling (i.e., 6:00 AM-2:00PM, 2:00 PM-8:00 PM, etc.), and the loss of intellectual stimulation and sharing that comes from working collaboratively
- Additional “down-time” to clean between shifts (and between equipment use cycles) requiring research personnel to clean the space (and equipment) to be in compliance with CDC guidelines
- Adjustment to working with continuous use of PPE where formerly not necessary, along with the associated inefficiencies and costs

# Pandemic Normal in research

- Temporary (or permanent) loss of research personnel who test positive or display COVID-19 symptoms
- Deployment of new health and administrative staff to implement testing and contact tracing, as well as to assure research laboratory compliance with safety policies
- Transition to remote work if a research building or laboratory is shut down
- New and unanticipated day-to-day work disruptions affecting research operations
- Slow or compromised supply chains and associated higher costs
- Reduced lab visitors from visiting scholars and collaborators
- Interruption of or limitations on conducting in-person human subject research
- Discontinuation of conducting artistic and performing arts exhibition with live audiences

# Pandemic Impact on Research

- **Research projects on cognitive aging, cognitive and social child development, brain function and organization, and clinical psychology**
  - All of the research projects involving human participants have been delayed significantly as a result of COVID. Laboratories had to pause their research programs at a time that is often when the most significant phase of data collection occurs.
- **Global Health Research on pregnancy outcomes**
  - COVID-19 has impacted health research abroad because travel for the University researchers has been stopped, but also because researchers abroad have been unable to work at their labs or with study subjects. Longitudinal studies of pregnancy outcomes have been interrupted also since March. Researchers have been able to get some information from cell phone interviews of the subjects, but key data such as birth weights has been lost. Some of this longitudinal data unfortunately will be unrecoverable.

# Pandemic Impact on Research

- **Grad student research career and thesis**

- Many graduate students receive funding directly from federal sponsors in support of their developing academic and research career. In many instances, travel to a field site is a critical component of their fellowship. Many of these support awards have limited funding and duration; and if a graduate student was planning to travel during this past spring, their entire research thesis could be materially impacted causing them to adjust the thesis objectives materially or not be able to complete their work.

- **Seasonal travel critical to research outcomes**

- There are various research studies that require the research team to be on site at the early seasonal onset of a disease. One example of this is malaria. If the team cannot be onsite for this critical time period, it could mean that the research is stalled for an entire year.

# Contributors

**Dr. Tanju Karanfil**, VPR, Clemson University and **Dr. Melur (Ram) Ramasubramanian**, VPR, University of Virginia, provided the conceptual framework for the Research Impact Metric (RIM) Model.

**James Luther**, AVP Finance & Research Compliance Officer, Duke University, and **Joe Gindhart**, AVC for Finance and Sponsored Projects, Washington University provided a financial compliance lens.

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# COGR Resource Page – [www.cogr.edu](http://www.cogr.edu)

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## Contact:

Dr. Ramasubramanian  
[mkr5a@virginia.edu](mailto:mkr5a@virginia.edu)

David Kennedy, COGR  
[dkennedy@cogr.edu](mailto:dkennedy@cogr.edu)