IMPACT OF IMAG-MSM ON THE SCIENCE AND CAREER JOURNEYS OF EARLY AWARDEES

MSM 2023 – PAST2FUTURE

Organized by
Denise Kirschner, Ahmet Erdemir, Stephanie George

Panelists
James Glazier, Peter Hunter, George Karniadakis, Gregor Kovacic, Jennifer Linderman, James Moore

MOTIVATION & GOALS

Solutions are documented but experiences, not as much.

What can we learn from our past to guide future?

- How IMAG/MSM enabled investigators to tackle challenges and leverage opportunities?

- What are investigators successes?

- What was the impact on careers of the investigators?

- What was the impact on the MSM community and broader stakeholders?

- How the future may look like?

Scientific
Challenges & Opportunities

Cultural
Challenges & Opportunities

Technical
Challenges & Opportunities
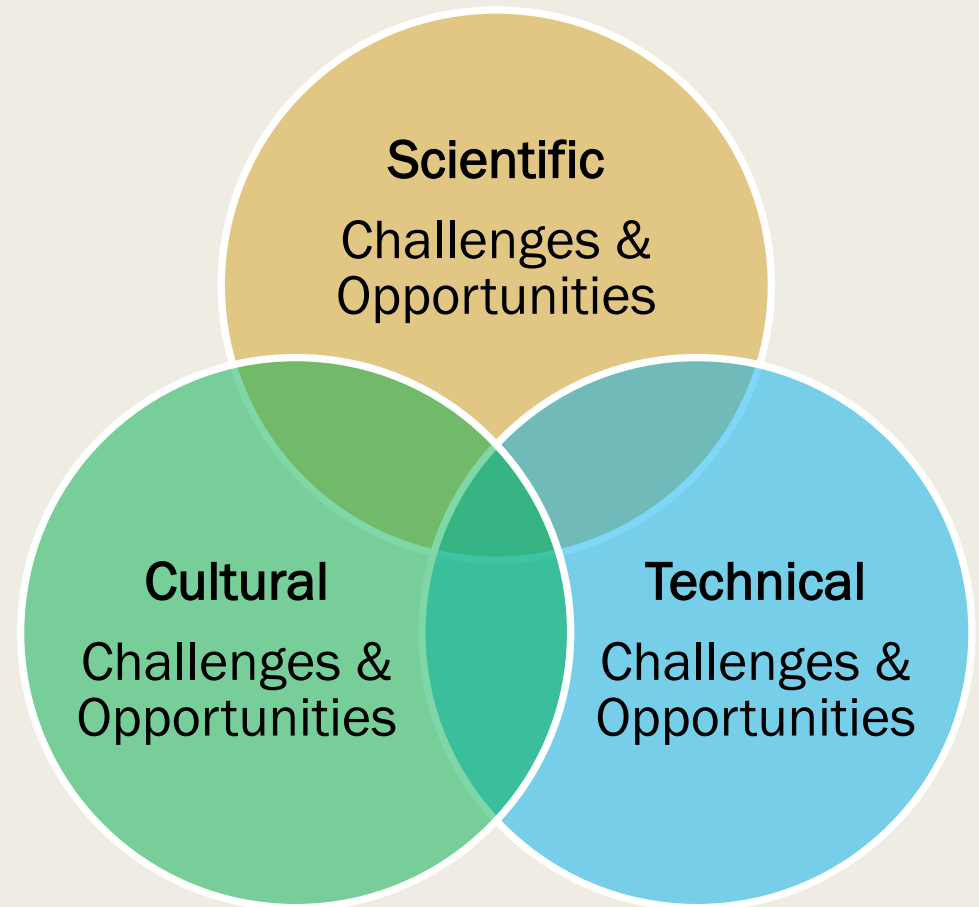
SURVEY

Inquiry to MSM awardees on their experiences with IMAG/MSM

Find blank survey form and submit responses in comments section of session page @:

https://www.imagwiki.nibib.nih.gov/current-imag-meeting/2023-agenda/plenary-session-11-journeys-original-msm-projects

Original MSM Awardee Inquiry Form

Please send your responses to Ahmet Erdemir, erdemira@ccf.org

Please provide your name and career level and affiliation (now and at the time you were awarded by IMAG/MSM).

Please provide (in ~300 words) the biggest lessons learned from your MSM project.

Briefly describe your experiences as one of the MSM investigator.

What were specific technical and societal challenges did you face (as a trainee, new investigator, or established investigator) at the time you engaged with IMAG/MSM? How IMAG/MSM supported you to overcome these?

What did you learn during your experiences as part of IMAG/MSM? What kind of opportunities opened up as a consequence of this learning? How has MSM enabled you throughout different stages of your career?

What are your plans moving forward, in your research program and in your career? How IMAG/MSM shaped these?

Will you be interested in attending the 2023 IMAG-MSM Meeting to be held on June 28-29, 2023 at Natcher Conference Center, NIH, Bethesda, MD?

Will you be interested in participating (as a panelist or presenter) in Plenary Session 1.2 – Journeys of the Original MSM Projects?

SURVEY RESPONDERS

- Outreach to original awardees and many other early awardees

- 13 responders filled in the survey
  - *3 early stage career @ time of award*
  - *4 middle stage career @ time of award*
  - *6 late stage career @ time of award*

- 3 responders expressed their sentiments

Collated responses are available @

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Gregor Kovacic
Peter Hunter
George Karniadakis
Denise Kirschner
Qing Nie
Victor Barocas
Anrew McCulloch
Roger Kamm
James Brasseur
Yoonsuck Choe
Trent Guess
Ching-Long Lin
Ahmet Erdemir
Georg Luebeck
David Christini
Ranjan Dash

SURVEY HIGHLIGHTS

Our MSM project on cardiac resynchronization therapy …
ended up leading to a new **model-based diagnostic product approved by the FDA** …

a new model of the enzymatic mechanisms of protein kinase A that **resolved years of controversy** …

… we found **access to multiple national clusters**

However, our first paper … has **defined the field** in thrombus modeling at scale

MSM was instrumental regarding **transfer of techniques and experiences** from other colleagues and as a medium to **openly discuss societal challenges**.

Our technique has been successfully **commercialized by a startup company** …

… **community deeply matters**, to drive development and sustaining of methods, tools, data and model resources, and credible practices.

I felt like I climbed Mount Olympus and **met with the gods**.

…it's **great to have a community** that supports modeling work, helped fund and promote it, and also gave modelers like me the opportunity to develop and discuss our ideas.

The program has **shaped my ideas in developing the scientific focus** for the NSF-Simons Center for Multiscale Cell Fate Research for which I am the director.

The models we developed during the MSM project **are still being used** in computation modeling in neuroscience today.

Some major lessons … are (i) the importance of **standards** for reproducible modeling, (ii) the need for **energy-based multiscale modeling** …, and (iii) the need to provide **career incentives** to encourage good behaviour by modelers …

Perhaps most importantly, this project proved to be a **solid foundation for our students and postdocs to move on** to become productive faculty members …

… my MSM experience, along with some others, taught me to t**hink about the clinical question**, which I was not doing so much at the time.

The first lesson was **not to be afraid** to approach a total stranger.

One thing is that it created **community of like-minded scientists** that we have grown together …

we had the opportunity to meet and **establish collaborations** with some of the most influential modelers of the time.

It was a great learning experience engaging with established investigators, **interactions I would probably not have had otherwise**

PANEL

Charge for panelists and participants:

1. What are the biggest lessons you have learned from your MSM funded project(s)?

2. Describe your experience as an MSM investigator.

3. What were technical and societal challenges faced and how did you overcome them?

4. What types of opportunities opened up to you as a result of your MSM experiences?

5. What are current and future MSM related plans?

Submit questions, comments, survey responses @

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