

Materials Science & Engineering in a Post-Pandemic World Summary

1&2: How is the COVID-19 pandemic impacting, and expected to impact the DOD materials and manufacturing capabilities and its workforce?

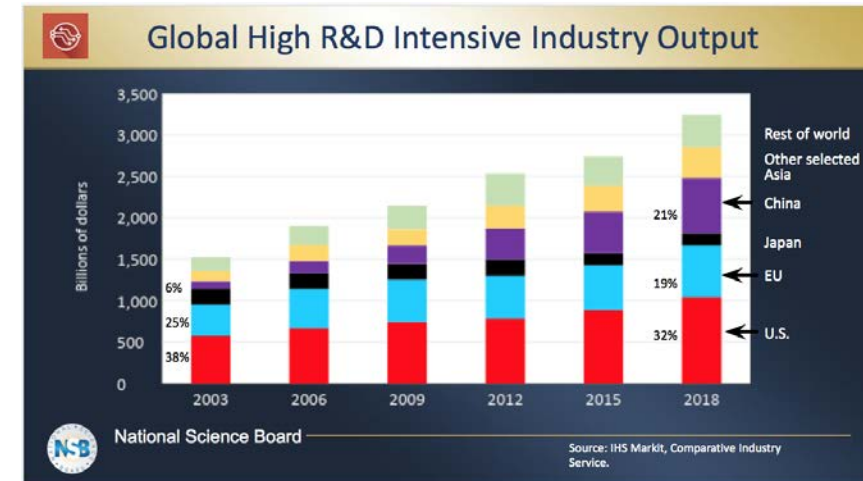
What are negative effects of COVID-19 on Materials, Manufacturing and its Pipeline? ⇒ **The Slow Down**

- Challenges in facility restarts and training
- Longer time to degrees
∴ gap in availability
- Lab-based study impacted
∴ remedial help?
- Highlights social inequalities
- Gaps in research and manufacturing may translate to gaps in national security

What are positive effects of COVID-19 on Materials, Manufacturing and its Pipeline?

- Long distance collaborations continue on-line with success
- New recruiting and on-boarding strategies
- Online recruiting broadens pool (universities and students at large)

Even before COVID-19:



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3. What are the efforts being considered to address the future DOD materials and manufacturing needs

From Lab to Field

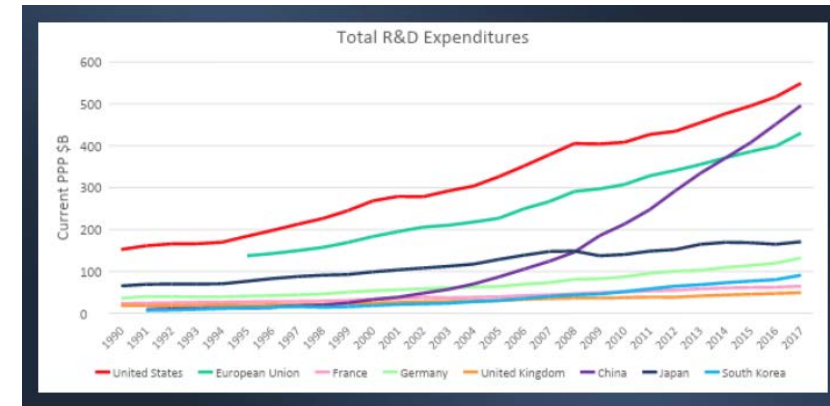
Multiple pathways:

- University-Government partnerships/center grants
- Individual PIs
- Low to high TRLs
- DoD Laboratories

Curricular Changes

- Digital literacy
- AI and Data Science/ “centaur materials scientist”
- CMSE woven in with fundamentals
- More cross-disciplinary and team-based approaches
- Convergent manufacturing
- Don't forget fundamentals!

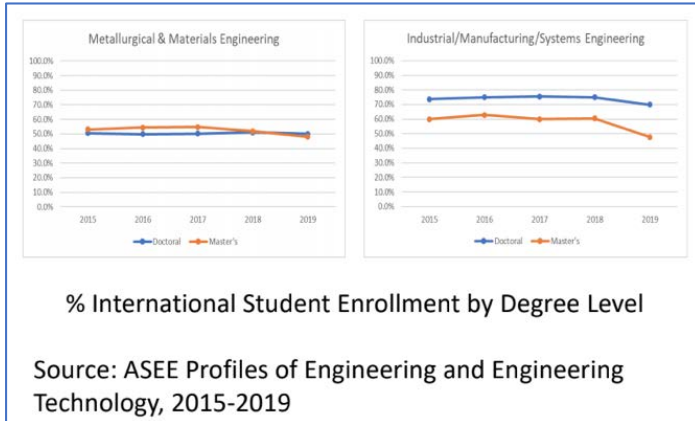
Advice/Info from Abroad:
Support equipment and the infrastructure for equipment:
the best labs attract the best people



Be cognizant of the narrowing gap between US and China, and Asia in general

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4) What might the future of the DOD workforce pipeline look like?

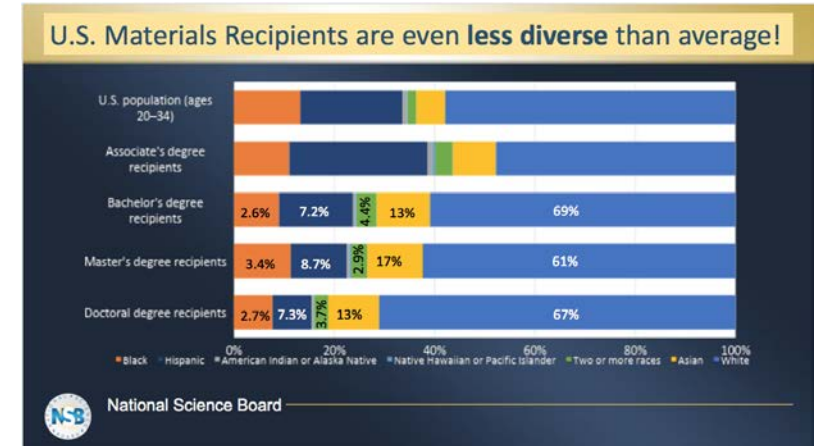


Compounded by adverse effects on international students due to COVID

Workforce Recruiting and Retention

- Share vision
- Deliver on career development
- Critical peer-to-peer and mentoring relationships
- Create talent pipeline, if nonexistent
- Apprenticeships
- Internships

Building a Diverse Workforce



New admissions, hiring, promotions
hiring processes
Definition of values - publicize
Empowerment activities
Transparency

"The Time Is Now: Systemic Changes to Increase African Americans with Bachelor's Degrees in Physics and Astronomy". <https://www.aip.org/diversity-initiatives/team-up-task-force> .

West Point Treatise on Racism:

<https://s3.amazonaws.com/static.militarytimes.com/assets/pdfs/1594132558.pdf>