Budget Office

BUDGET MANAGER MEETING

NOVEMBER 17, 2020

Agenda

- Welcome/Updates – Kathleen Fabiny
- Capital – Jim Belshe
- PME Overview – Josh Berg

UPDATED Policy 1301: Project Planning, Approvals and Controls

UPDATED Policy 1301: Project Planning, Approvals and Controls

Policy 1301: Project Planning, Approvals and Controls

Subject Area: Capital Planning and Budget Process

Responsible Office: Financial Services

Sponsor: Chief Financial Officer

Originally Issued: March 2001

Revised: [**November 5, 2020**]

- Applies to all units of the University and affiliates (not MBL and UCMC)
- Projects subject to policy include new construction, renovations, infrastructure, major capital equipment purchases, and information technology projects
- Covers any capital project with total cost more than $100,000 and any project or capital equipment purchase requesting the use of center funding outside of a unit's annual operating budget
- Does not cover equipment purchases with unit operating funds or unit-funded projects with total cost < $100,000
- Note total project costs includes all spending (capital + operating) necessary to complete the project

UPDATED Policy 1301: Project Planning, Approvals and Controls

Highlights

Project must commence spending in FY of authorization or authorization will expire (account will be closed) and must be resubmitted for approval.

Authorization is non-transferrable and cannot be repurposed for new projects.

All requests (annual and off-cycle) require a Capital Project Budget Request (CPBR) form.
https://budgetoffice.uchicago.edu/capital-budget/

Increased approval thresholds for capital projects and revises process and documentation requirements for major projects ($5M+).

UPDATED Policy 1301: Project Planning, Approvals and Controls

- Increased Approval Thresholds

Required Approval	Old Project Cost Approval Threshold	New Project Cost Approval Threshold
None (if funded from Unit operating budget)	Up to $100,000	removed
Budget Director	$100,000-$249,999	Up to $499,999
CFO and Provost	$250,000- $999,999	$500,000-$2,999,999
President	$1,000,000-$2,999,999	$3,000,000-$4,999,999
Board of Trustees or the Executive Committee	$3,000,000 and above	$5,000,000 and above

- If the total cost on any project is expected to exceed the total budget authorization, then new budget authority must be obtained before incurring additional expenditures
  - If total project cost is expected to exceed budget authorization by ≤ 5%, then approval need only be obtained for *the additional estimated costs*, subject to the approval thresholds above.
  - If total project cost is expected to exceed budget authorization by > 5%, then authorization for the *new total project costs* must be obtained, subject to the approval thresholds above.

UPDATED Policy 1301: Project Planning, Approvals and Controls

- New policy effective as of November 5, 2020 and covers all projects, new and existing
- Budget Office will send memo to campus with copy of new capital policy with additional detail
- New policy will be available on Financial Services' website
- Questions?

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Budget Managers Meeting, Nov. 2020: PME Overview

Josh Berg, Senior Associate Dean for Administration & Operations at the Pritzker School of Molecular Engineering

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Our Mission

The Pritzker School of Molecular Engineering advances the mission of translating advances in basic physics, chemistry, biology, and computation into new tools to address important societal problems and to create a research and teaching environment that enhances and transmits these capabilities to future generations.

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

PME's Timeline

- 2011 Established as the Institute for Molecular Engineering (IME) by the University of Chicago in partnership with Argonne National Laboratory.
- 2012 de Pablo, Nealey, Awschalom, Kawalek hired
- 2013 Swartz, Hubbell, Galli, Cleland hired
  - Securing the leadership of the three current themes
- 2014 First Ph.D. cohort enrolled
- 2015 $15 million gift to equip the Pritzker Nanofabrication Facility
- 2015 Moved into Eckhardt Research Center (ERC)
- 2015 First Ph.D. alumna graduates

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

PME's Timeline

- 2016 Faculty grows to fifteen; Undergraduate program launched
- 2017 Chicago Quantum Exchange (CQE) launched
- 2018 Faculty grows to twenty-five; Chicago Immunoengineering Innovation Center (CIIC) launched
- 2019 Faculty grows to twenty-nine, plus nine secondary appointments
- 2019 Renamed Pritzker School of Molecular Engineering
  - First school in the nation dedicated to molecular engineering, and the first new school at the University in three decades
- 2020 First Master of Science in Molecular Engineering (MSME) cohort enrolled

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Our Mission

The Pritzker School of Molecular Engineering advances the mission of translating advances in basic physics, chemistry, biology, and computation into new tools to address important societal problems and to create a research and teaching environment that enhances and transmits these capabilities to future generations.

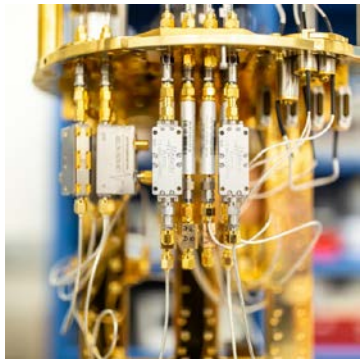
PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Our Mission…applied

PME is organized into interdisciplinary themes focusing not on what the engineering disciplines *have been*, but accomplishing what the engineering disciplines *can do*.

PME applies molecular-level science to the design of advanced devices, processes, and technologies, developing solutions to important societal issues and educating the next generation of leaders in the fast-growing field of molecular engineering.

PRITZKER SCHOOL OF MOLECULAR ENGINEERING



Research Themes

Beyond interdisciplinary:

- PME research is driven by **specific and compelling problems**, whether from deep scientific questions or pressing societal needs.
  - Clean drinking water
  - Secure financial (or voting) transactions
  - Vaccines for autoimmune disorders
- Deep integration across disciplines.
  - As experts from different disciplines pursue common research challenges, their knowledge, theories, methods, data, research communities and languages become increasingly intermingled or integrated.

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Research Themes

Materials Systems for Sustainability and Health

The future of our planet and the quality of human life depend on engineering sustainable solutions for clean water, energy storage and transfer problems, and developing new materials to promote advances in health care.

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Research Themes

Immunoengineering

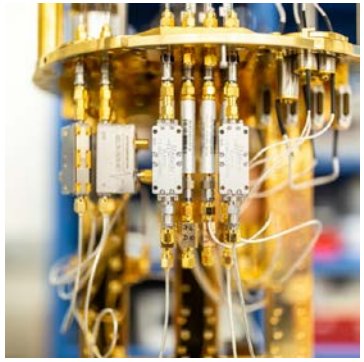
PME seeks not only to understand how the body's immune system works, but to *change how it works* for the better. Progress in this area could lead to improved treatment—and ultimately prevention—of many conditions, including cancer, infections, allergies, and auto-immune diseases.

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Research Themes

Quantum Engineering

Advances in quantum sensing, encryption, and computing will transform science and engineering and have far-reaching impact on industry, the economy, and other aspects of our society, including “unhackable” communications through quantum cryptography and a new class of ultra-sensitive detectors for biological and chemical sensing



PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Where is PME?

THE UNIVERSITY OF CHICAGO

pme.uchicago.edu

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Where is PME?

While primarily housed in the state-of-the-art William Eckhardt Research Center…

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

Where is PME?

PME personnel are also located in 14 additional buildings on campus, as well as in the Argonne National Laboratory.

Why so many places?

- Over the past 10 years, PME has grown to a population of almost 500 faculty, staff and students.
  - 41 faculty (14 assistant professors, 3 associate professors, 15 professors, 9 secondary appointments)
  - 12 joint appointments with Argonne National Laboratory
  - 18 Argonne scientists with UChicago CASE appointments
  - 212 graduate students
  - 110 postdocs
- As PME continues to grow, so too does our popularity with undergraduate majors:
  - >1500 student enrollments (2019-2020)
  - >3000 undergraduate applicants indicating preference for PME

…any cool toys?

…any cool toys?

- Yes!

…any cool toys?

…well?

…well?

- …fine.

State of the Art Facilities

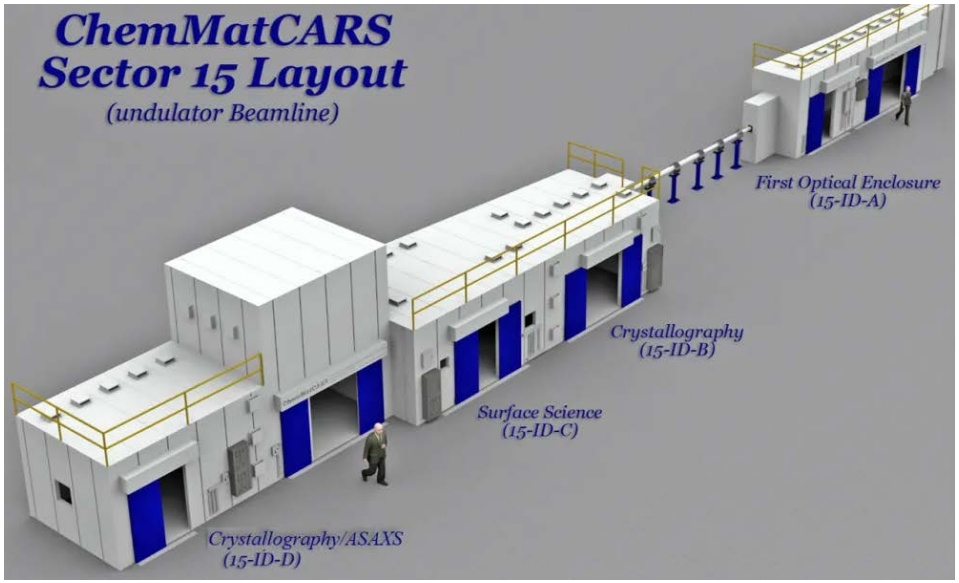
- Pritzker Nanofabrication Facility (PNF)
  - This ISO Class 5 cleanroom offers advanced lithographic processing of both soft and hard materials. Located on lower level 1 of the William Eckhardt Research Center, this 10,000-square-foot facility includes a full suite of high-tech tools and equipment and provides an ideal space for researchers and engineers to pursue nanoscale fabrication.
  - Dozens of internal and external users.
  - Presently operational despite COVID-related challenges.

State of the Art Facilities

- PME's Soft Matter Characterization Facility (SMCF)
  - This core research facility is located in the William Eckhardt Research Center. The SMCF maintains a suite of specialized instruments dedicated to study the structure, properties, and dynamics of soft materials.
  - Work conducted in the SMCF is supported by federal and non-federal sponsored awards, alongside generous equipment gifts from Phil Wyatt.

State of the Art Facilities

- ChemMatCARS is located at Argonne National Laboratory
  - NSF's ChemMatCARS operates three experimental stations in the areas of advanced small-molecule crystallography, liquid surface and interface scattering, and small to wide-angle scattering at the Advanced Photon Source (APS)
  - Addresses a broad range of issues in chemistry and materials research.



PME's Partnerships

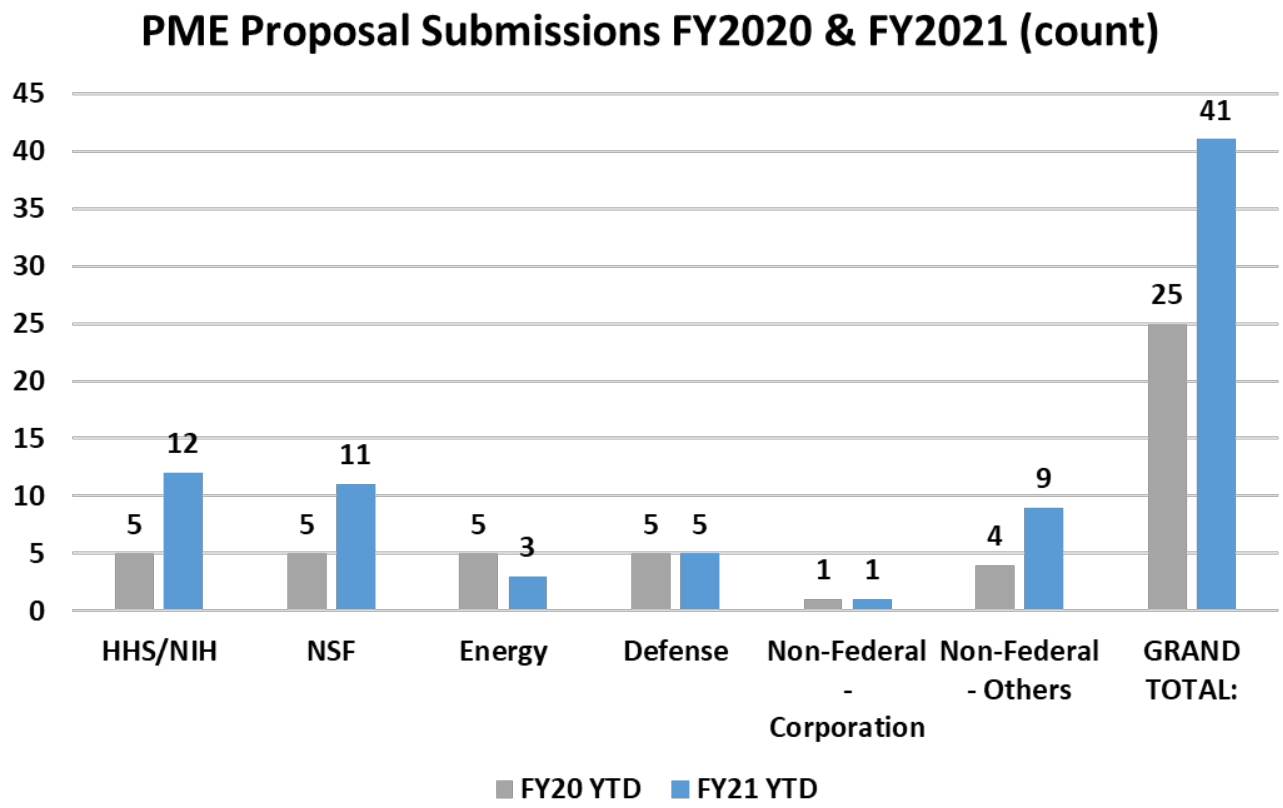
- CQE (Chicago Quantum Exchange)
  - Innovative, entrepreneurial hub of Quantum-related activity in Chicagoland, with 18 industrial partnerships including Boeing, IBM, Intel, Discover, and JP Morgan Chase
- Q-NEXT
  - DOE $115M grant to advance Quantum Information Science
- CIIC (Chicago Immunoengineering Innovation Center)
  - Advances in treatments for MS and malaria, working on pathways to commercialization for autoimmune disorder and cancer therapies.
- CHiMaD (Center for Hierarchical Materials Design) [joint with NWU]
- ChemMatCARS (CARS = Center for Advanced Radiation Sources)

COVID's impact on PME

- Rapid adaptation to COVID-19 challenges.
  - Multiple PME labs working on COVID-related research through the entirety of the pandemic.
  - >200 PME personnel returned to campus for mid-June Return to Research effort
  - >350 since increase to 50% density.
- Onboarded two new faculty (Joyce Chen & Laura Gagliardi).
- Launched a new Master's program (MSME)
- Continued to grow graduate and undergrad programs
- Funding proposals and new awards are on an upswing

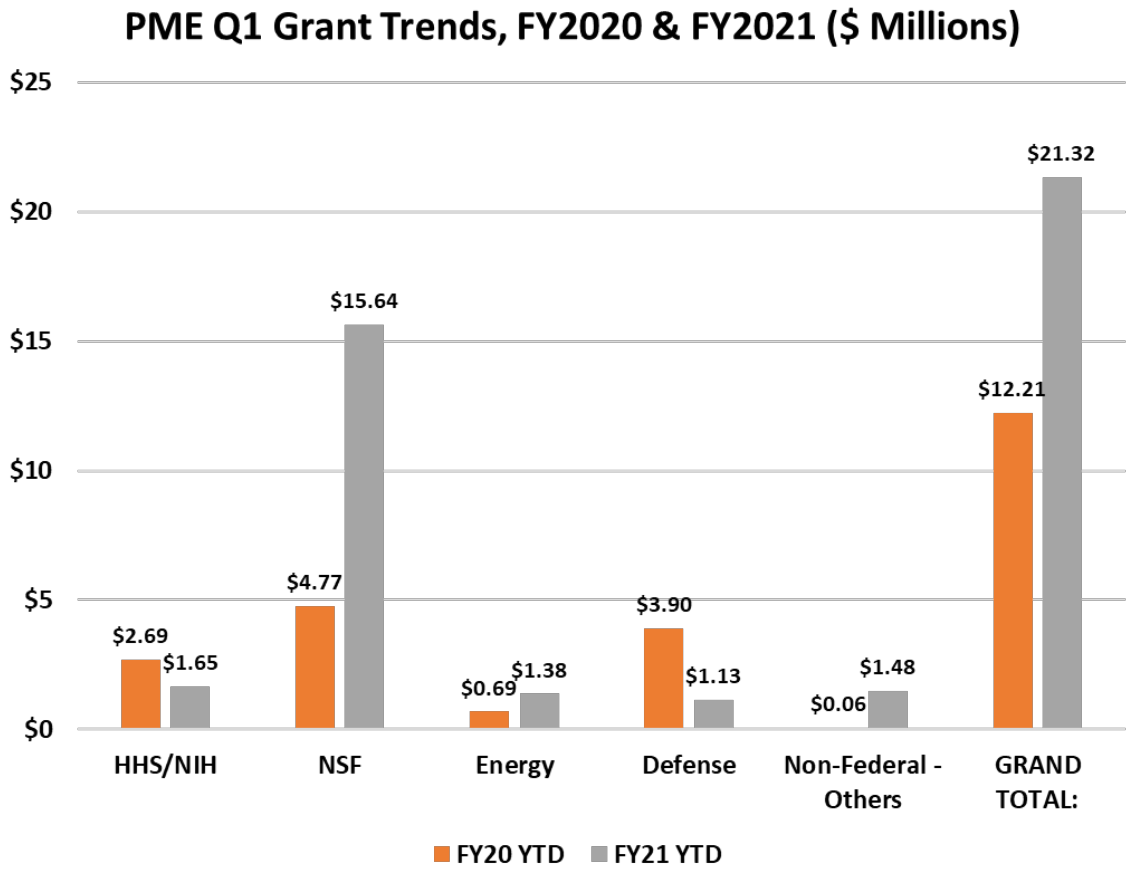
PRITZKER SCHOOL OF MOLECULAR ENGINEERING

COVID's impact on PME



PRITZKER SCHOOL OF MOLECULAR ENGINEERING

COVID's impact on PME



THE UNIVERSITY OF CHICAGO

PRITZKER SCHOOL OF MOLECULAR ENGINEERING

PME's impact on COVID

15 Active Research Projects focusing on COVID-19

- Engineer a hand-held device for rapid COVID-19 diagnosis at home and point-of-care - Junhong Chen Research Group, Huang Lab, and Beavis Group
- Computational modeling of therapeutics for SARS-CoV-2 - de Pablo Group
- Novel vaccine immunopotentiators versus SARS-CoV-2 - Esser-Kahn Group
- Quick turnaround testing of the efficacy of cloth masks in filtering particulates covering 10 nm to ~ micron diameter distributions -Guha Group
- Measure and prevent the SARS-CoV-2 infection to host cells - Huang Lab
- Sequencing COVID-19 patients' B cells for generating therapeutic antibodies - Huang Lab and Wilson Lab
- Cytokine engineering for preventing ARDS and other pathologies in COVID-19 - Hubbell Lab and Wilson Lab
- Nanomaterial vaccines versus SARS-CoV-2 - Hubbell Lab and Swartz Lab
- Engineering antibodies to combat COVID-19 - Mendoza Group
- Pulmonary targeting of inhibitors or viral replication and inflammatory cytokine production - Swartz Lab and Hubbell Lab
- In vitro lymph node model using human splenocytes for vaccine screening - Swartz Lab and Sperling Lab
- High-throughput microfluidic drug screening for COVID-19 - Tay Lab
- SARS-Cov2 detection from saliva - Tay Lab, Agarwal Group, and Izumchenko Group
- SARS-Cov2 detection in aerosols emitted from COVID-19 patients - Tay Lab and Pinto Group
- Nanomaterials engineering for preventing ARDS in COVID-19 - Tirrell Lab and Fang Lab

PME's Future

- Growth
  - Presently, PME has 41 faculty, including 9 secondary appointments. Over the next 5-10 years, PME aims to double its size to roughly 60 primary and 20 secondary faculty, with a total population close to 1,000.
  - PME's undergraduate major (and 7 recently developed minor) offerings are increasingly popular, leading to PME's anticipated enrollment growth.
- Immunoengineering is PME's 'next Quantum'
  - With entrepreneurial verve and timing that favors rapid advances in the CIIC, PME is applying its unique research incubation to the field of immunoengineering.
- PME's 10th Year Anniversary
  - Throughout 2021, PME will be planning a series of high-profile events celebrating it's breakthroughs and achievements, and hopefully leveraging that success to generate new graduate fellowships and other sustaining gifts.

Questions?