



MATERIALS SCIENCE & ENGINEERING

MALIKA JEFFRIES-EL
(CHEM, MSE)
**ELECTED
AMERICAN
CHEMICAL SOCIETY
FELLOW.** She is 1 of 7
faculty elected fellows
this year.



LAST YEAR



**2017/2018
DIVISION
FUNDING**

\$121M
ANTICIPATED
FUNDS

\$56M
COMMITTED
FUNDS

\$26M
DOLLARS
RECEIVED

\$25M
GRANT
EXPENDITURES

DAVID BISHOP
DIVISION HEAD OF
MATERIALS SCIENCE &
ENGINEERING

\$20M AS ERC DIRECTOR

BISHOP NAMED
DIRECTOR & RECIPIENT
OF \$20M ERC GRANT

A \$20 million grant from
NSF established the
Engineering Research
Center in Cellular
Metamaterials (ERC
CELL-MET). As director,
Bishop will spearhead
production of heart tissue
to ensure it offers industry
and clinical functionality.

MSE HISTORY

High demand for advanced materials in the 21st century underscored the need for an interdisciplinary graduate program at BU. In 2008, the Division of Materials Science and Engineering was established under the leadership of Professors Uday Pal, Soumendra Basu, and Theodore Moustakas.

INVENTOR

BISHOP NAMED
NATIONAL ACADEMY
OF INVENTORS FELLOW

Bishop holds US patents
for 47 micromechanical
inventions including the
Lambda Router.

PRESS COVERAGE

49 APPOINTED
FACULTY

36 AFFILIATED
FACULTY

8K AVERAGE #
CITATIONS

35 AVERAGE
H-INDEX

49 TOTAL
FELLOWS

55 SOCIETY
MEMBERS

4 NATIONAL
ACADEMY
MEMBERS

25 EARLY CAREER
AWARDS, 3
THIS YEAR

SPECIAL PROGRAMS

INCLUSION PROGRAM

The new NSF ERC and the
College established a
program to increase the
presence of women and
underrepresented minorities
in the field.

LAUNCH ANNUAL EVENT

The inaugural Materials
Science Lecture
was sponsored by
Schlumberger-Doll Research
on the topic of *Carbon
Based Nanosciences*. It
featured Dr. Hongjie Dai.

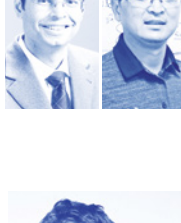
MATERIALS DAY

XIN ZHANG (ME, ECE, BME,
MSE) hosted the annual
symposium, addressing
*Integrating Metamaterials
with Quantum Materials*.

PRESS CLIPPINGS



MARK GRINSTAFF (BME,
CHEM, MSE) developed
a nanoparticle system to
deliver cancer medicine to
a patient in one dose.



DOUGLAS HOLMES
(ME, MSE) published two
papers in *Physical Review
Letters* on how soft
matter behaves under
unstable conditions.



KAMIL EKINCI (ME, MSE)
and CHUANHUA DUAN
(ME, MSE) created an
antibiotic susceptibility
test that measures
bacteria movement.



JAMES BIRD (ME, MSE)
is featured in ASEE's list
of 20 high-achieving
researchers and educators
under 40.

\$115M
FOR KILACHAND CENTER

DIRECTOR OF THE
BIOLOGICAL DESIGN
CENTER (BDC) CHRISTOPHER
CHEN (BME, MSE)

The BDC opened in its new
home, the Rajen Kilachand
Center for Integrated Life
Sciences & Engineering.
Chen's team recently
developed a 3-D blood
vessel-on-a-chip model to
understand what happens to
blood vessels during injury.

\$20M
NSF CELL-MET ERC GRANT

MSE HEAD DAVID BISHOP
(ECE, MSE, PHYSICS, BME,
ME) See inside cover

\$3M
**FOR LIGHT & BRAIN
RESEARCH**

THOMAS BIFANO
(ME, BME, MSE)

The NSF grant supports the
exploration of brain functions
by use of light.

\$2.5M
TO FIGHT DEMENTIA

TYRONE PORTER
(ME, BME, MSE)

The NIH grant supports the
development of a localized
drug delivery strategy that
would reduce age-related
blood vessel damage.

\$1.3M
**CENTER FOR
SEMICONDUCTOR
MODELLING**

ENRICO BELLOTTI
(ECE, MSE)

The US Army grant
establishes a center to
develop new simulation and
design methodologies for
semiconductor materials and
devices.

ACADEMICS & ALUMNI



DEGREES

35 PHD
AWARDED
SINCE '08

83 MS
AWARDED
SINCE '08

43 MEng
AWARDED
SINCE '11

3 MS WITH PRACTICE
AWARDED
SINCE '11

6% ALL DEGREES AWARDED:
AVERAGE GROWTH RATE
OVER 6 YEARS

17% STUDENT POPULATION:
AVERAGE GROWTH
RATE OVER 4 YEARS

ENERGY

DEGREES AT WORK

Alum Rao Mulpuri (MS
'92, PhD '96), CEO of
View Dynamic Glass,
developed a Glass that
can be controlled through
an app & can reduce
energy consumption
by about 20%. Mulpuri
met his business partner
Robert Rozbicki, CTO of
View, while a teaching
assistant at BU.

HEALTHCARE

**"IF
WOMEN
DON'T
PIONEER
IN THIS
AREA,
THEN
WHO
WILL?"**
CATHERINE
KLAPPERICH



**RESEARCH
SPOTLIGHT:
BIOMATERIALS**

HPV

CATHERINE KLAPPERICH
(BME, ME, MSE)
produced a small and
easy-to-operate HPV
diagnostic test.

INDIA

Each year, 74K women
die from cervical cancer.
HPV is a leading cause
of cancer. When HPV
is detected early, a
percentage of these
fatalities can be avoided.



PILLS

MUHAMMAD ZAMAN
(BME, MSE) tackled the
counterfeit pill crisis by
inventing PharmaChk, a
device to test medicine
purity.

PAKISTAN, 2011
200 people died from
contaminated medicine

NIGERIA, 2007
84 babies died from
contaminated medicine

PANAMA, 2006
Widespread illness from
contaminated medicine

MSE RESEARCH AREAS

Biomaterials
Electronic & Photonic Materials
Materials for Energy & Environment
Nanomaterials



BU.EDU/MSE

INVENTING THE MATERIALS OF TOMORROW
& IMPROVING THE MATERIALS OF TODAY

BU DIVISION OF MATERIALS SCIENCE AND ENGINEERING

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