

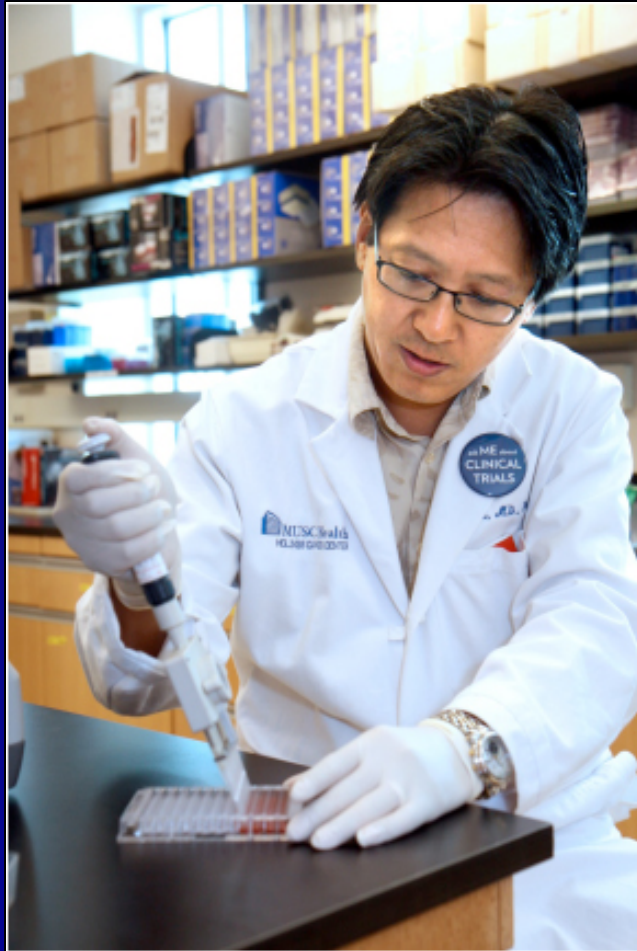
Microbiology and Immunology



**Program
Exposure
2017**

Program Director:
Bei Liu, MD, MPH
liube@musc.edu

Associate Director:
Chentha Vasu, PhD
vasu@musc.edu



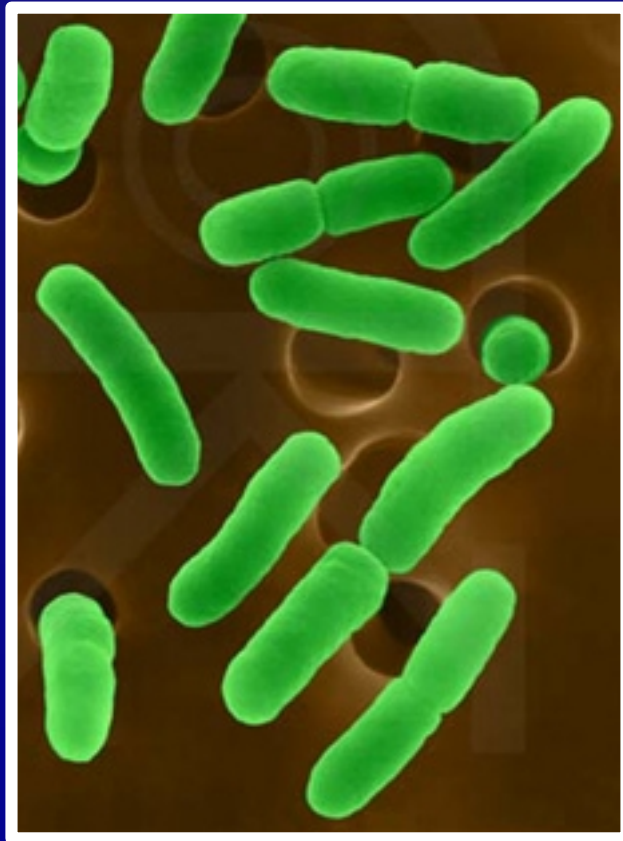
Dr. Zihai Li

Chairman and Professor
Dept. Microbiology & Immunology

Program Leader
Cancer Immunology Program
Hollings Cancer Center

The Sally Abney Rose Chair in
Stem Cell Biology & Therapy

M&I Program currently comprises



- **30 graduate students**
 - 14 PhD students
 - 9 MD/PhD students
 - 7 Masters students

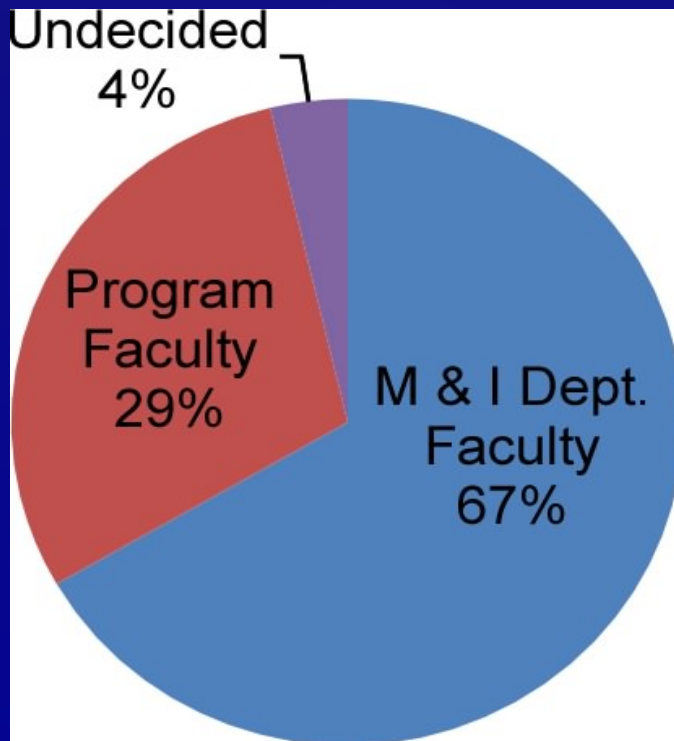
- **>40 Program Faculty**
in 8 departments

Departmental vs. Program Faculty

- Program Faculty can be from any MUSC departments with research interests related to microbiology or immunology
 - Currently 21 in Dept. of Microbiology & Immunology
 - >20 faculty from 7 other MUSC departments
- Faculty can be affiliated with multiple graduate programs

Departmental vs. Program Faculty

**Proportions of M&I Students
with Departmental or Program
Faculty Mentors**



- Requirements are the same for the students
- Students in the same lab can be in different programs
- Faculty can petition to be added to the M&I Program at any time

PhD Program Requirements

- Concentrate in **Microbiology** or **Immunology**
- Individualized course choices (12 credits, merit graded)
- You may take courses offered by other departments if your mentor and advisory committee approve
- Written qualifying exam during the immediate summer after the 2nd year
- PhD students are required to publish at least one first-author peer-reviewed manuscript. Our students publish 2-3 on average

M&I Advanced Course Offerings

- The M&I Program offers at least 2 courses for advanced credit every semester
- **This fall we offer 3 courses**
 - MBIM 735 Advanced Immunology
 - MBIM 779 Immunogenetics
 - MBIM 856 Critical Literature Review in Inflammation and Immunity



Designed by Caroline Miekina and model maker Christopher Kelly

M&I Course Offerings

Fall

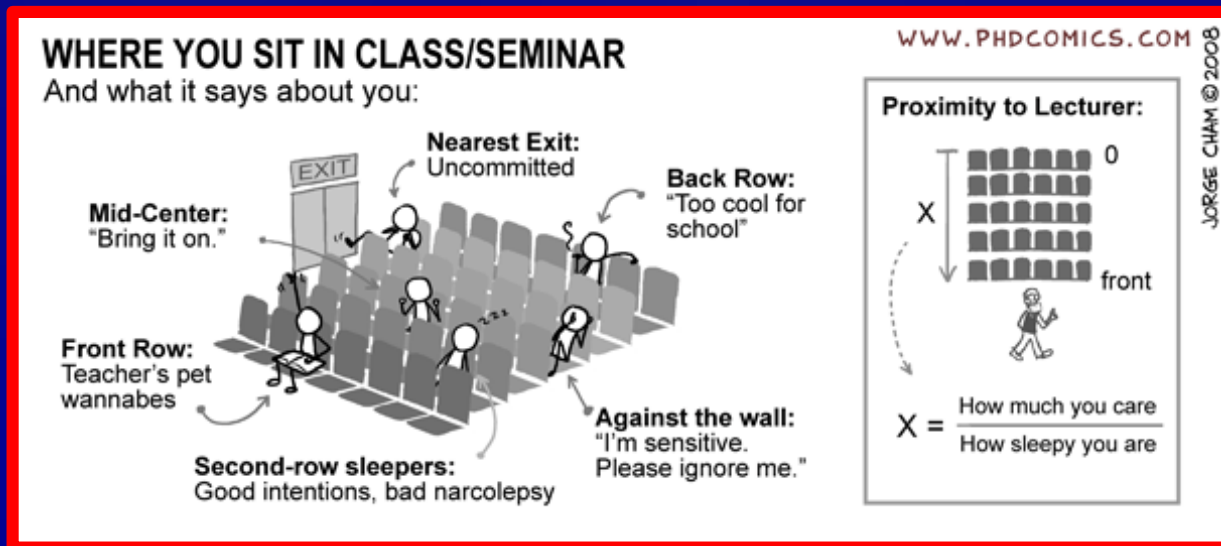
- **Advanced Immunology**
- **Advanced Microbiology**
(alternate years)
- **Virology** *(alternate years)*
- **Immunogenetics**
- **Critical Literature Review in Inflammation and Immunity**
- **Student seminar**

Spring

- **Dental Microbiology**
- **Environmental Microbiology**
- **Immunogenetics**
- **Cancer Immunotherapy Lessons**
- **Mini-Course: Immunobiology**
- **Critical Literature Review in Inflammation and Immunity**
- **Student seminar**

M&I Student Seminar

- Every Friday at noon in BSB 402
- All students speak once per year
- Faculty present on alternate weeks, supplemented by monthly outside speakers
- ***All programs are welcome!! Visit us anytime!***



Where are M&I graduates now?

➤ **7 PhD degrees awarded in 2016-2017**

➤ **50 PhD degrees awarded since 2006**



- 20 went to medical school at MUSC (16 MSTP)
- 3 went to dental school at MUSC (1 DMD/PhD)
- 13 are in academic or governmental post-doc positions
- 4 are in the biotech industry/intellectual property
- 5 are in tenure track academic positions
- 1 runs an academic core facility
- 1 is a clinical trial coordinator in industry

Where are M&I graduates now?

➤ **4 MS degrees awarded in 2016-2017**



➤ **28 MS degrees awarded since 2008**

- **5 were admitted to medical school**
- **6 admitted to PhD programs**
- **1 went to a Master's program in public health**
- **1 went to Pharmacy school**
- **4 are research associates here at MUSC**

M & I Students' Publications 2016-2017

- 19 manuscripts were published in peer reviewed journals.
- 33 abstracts were presented in scientific meetings.
- 3 oral presentations in national conferences.

M & I Students' Honors and Awards 2016-2017

- Outstanding MS Thesis Award, MUSC
Neal L.
- American Association of Immunologists (AAI)
Trainee Abstract Award:
Metelli, A., Dhar P.
- NIH/NCI F31 Grant: Award Dates: 07/01/2017 –
06/30/2020. Total Project Direct Costs: \$175,738
Riesenberg, B.
- NIH/NHLBI Cardiovascular Predoctoral
Fellowship Training Grant: **Danh, T.**

M & I Students' Honors and Awards 2016-2017

- SCTR TL1 (T32) Predoctoral Clinical & Translational Research Training Award:
Happe, M.
- MUSC Student Research Day, 2016
Willard and Betty Peterson Award, 1st Place:
Bowers, J.S.
Oral Presenter, 2nd Place award: **Bailey, S.R.**
- 31st Annual Meeting of the Society of Immunotherapy of Cancer (SITC) Travel Award:
Metelli, A.

M & I Students' Honors and Awards 2016-2017

- APSA (American Physician Scientist Association) Excellent Mentor Award. May 2017.
Kwon, H.
- MUSC Abney Foundation Scholarship:
Kwon, H.
- Infectious Disease Society of America Medical Scholar: **Ogunrinde, E.**
- Rheumatology Research Foundation Medical and Graduate Student Preceptorship:
Ogunrinde, E.

M & I Students' Honors and Awards 2016-2017

- Presidential Scholar Award- appointment for the duration of 2017-2018 Interprofessional fellow:
Happe, M.
- 10th International Conference on Complement Therapeutics, Trainee Travel Award:
Patel, K.J.
- The International Federation of Pigment Cell Societies (IFPCS) Travel Award, Value \$1000.
Smith, A.S.

M&I Program Faculty (Dept of M+I)



**Eric
Bartee**



**Carl
Atkinson**



**Beichu
Guo**



**Azizul
Haque**



**Wei
Jiang**



**Christina
Johnson**



**Laura
Kasman**



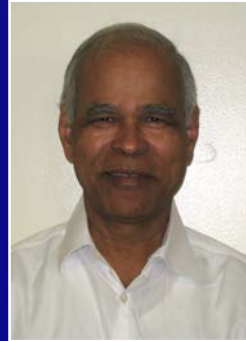
Zihai Li



Bei Liu



Hal May



**Jay
Pandey**



**Chrystal
Paulos**



**Michael
Schmidt**



**Adam
Soloff**



**Steve
Tomlinson**



**Paula
Traktman**



**Chentha
Vasu**



**Cynthia
Wright**



**Jennifer
Wu**



**Yi (Benny)
Yang**



**Xue-Zhong
Yu**

M&I Program Faculty (Other Dept)



**Craig
Beeson**



Ken Chavin



**Gary
Gilkeson**



**Diane
Kamen**



**Keith
Kirkwood**



**Amanda
LaRue**



**Shikhar
Mehrotra**



**Eric
Meissner**



**Satish
Nadig**



**Tammy
Nowling**



**Jim
Oates**



**Titus
Reaves**



**Barb
Rohrer**



**Mark
Rubinstein**



**Caroline
Westwater**



**John
Wrangle**



**M. Rita
Young**



**John
Zhang**

Neuroinflammation:

Narendra Banik, Narayan Bhat, Inderjit Singh

Septic shock: James Cook

M&I Program Faculty Interests

➤ Immunology

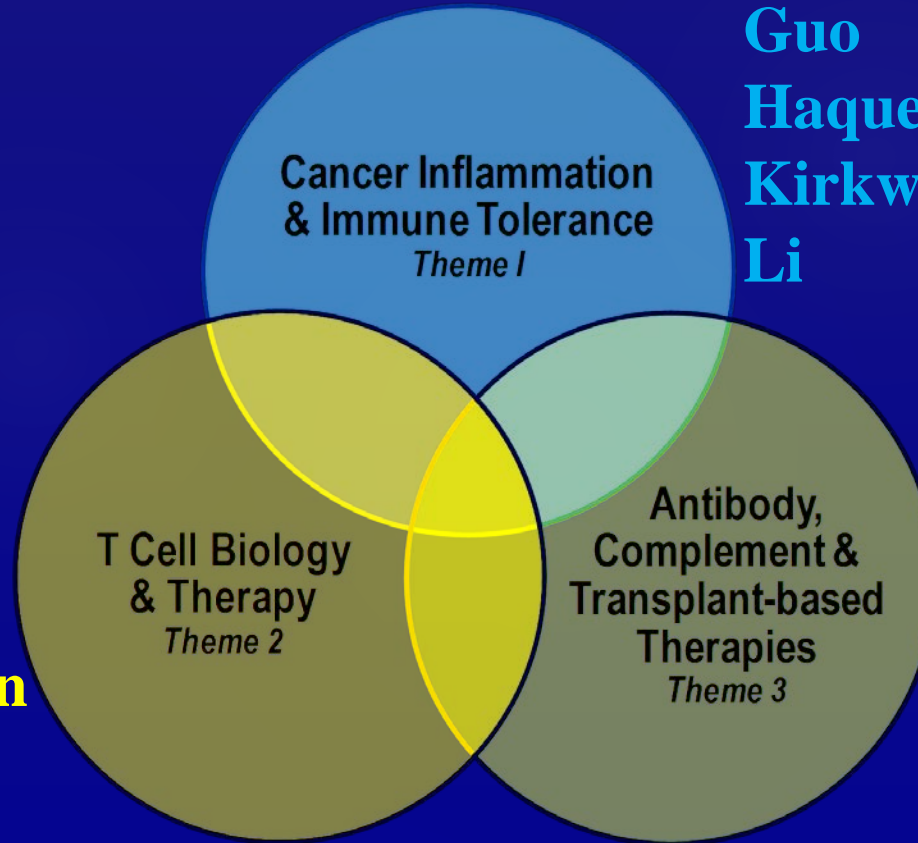
- Cancer immunology & Immunotherapy
- Mucosal Immunology
- Inflammation & Tolerance

➤ Microbiology

- Bacteriology
- Mycology
- Virology

Cancer Immunology & Immunotherapy

Bartee
Cole
Mehrotra
Li
Paulos
Rubinstein
Soloff
Voelkel-Johnson
Wrangle
Yang
Yu



Bartee
Guo
Haque
Kirkwood
Li
Liu
Wu
Yang
Young

Atkinson
Li
Liu
Tomlinson
Wu
Yu

Mucosal Immunology

Dendritic cells, dysbiosis & colon cancer
(Li and Liu)

Adoptive T cell therapy & microbiota
(Paulos and Wu)

Dectin-1/TLR2 & mucosal tolerance (Vasu)

Inflammasome, colitis & colon cancer
(Guo, Reaves)

Th17 cell differentiation & microbiota
(Yang, Liu and Li)



HOST FACTORS

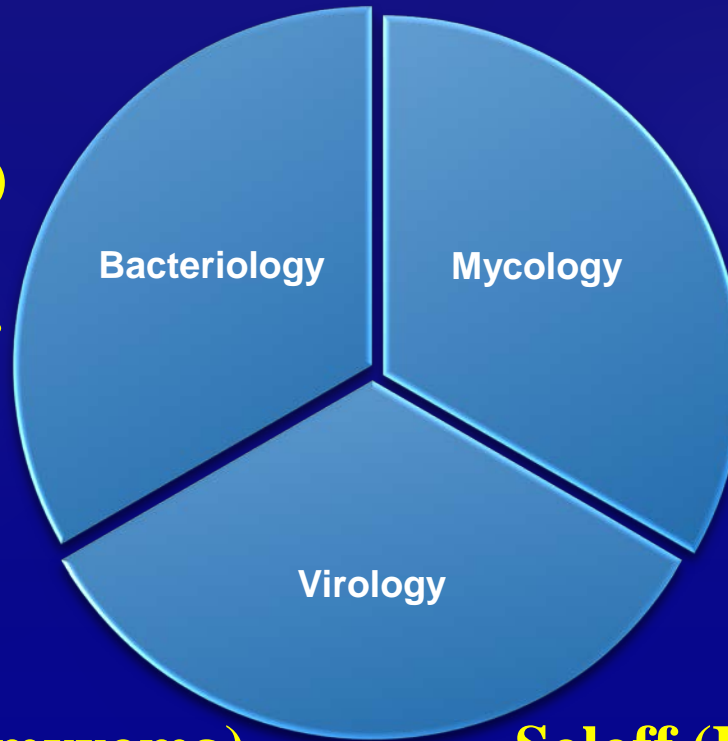
MICROBES

Inflammation & Tolerance



Bacteriology, Mycology & Virology

Beeson (MTB)
May (environmental)
Schmidt (SA)
Yang (SFB and other commensals)



Westwater (Candida)
Vasu (dectin-1, commensals)

Bartee (myxoma)
Jiang (HIV)
Kasman (MCMV)
Meissner (HIV, HCV)

Soloff (HIV, SIV)
Traktman (vaccinia virus)
Wright (virus-host)

Increasing NIH Funding and Ranking



Recent NIH Grants (2016-2017)

- 1 T32
- 6 R01s
- 2 R43
- 3 R21
- 1 F grants

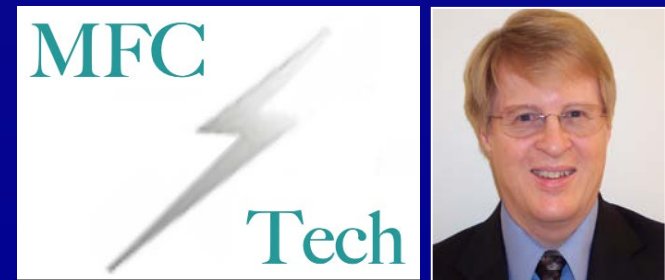
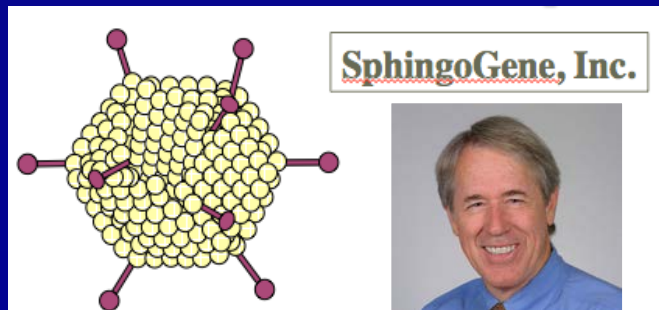
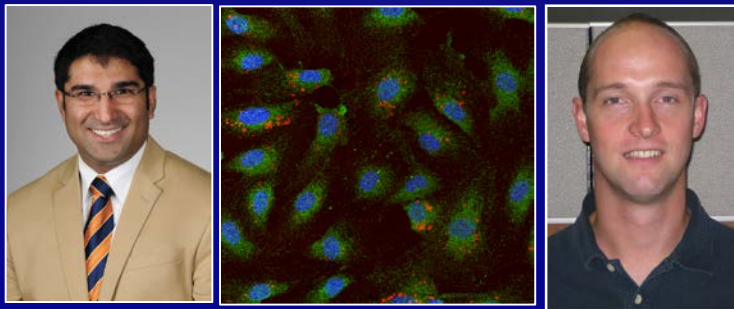
MUSC Dept. of Microbiology and Immunology

Entrepreneurship by M&I faculty

2014 INVENTOR of the YEAR!



ToleRaM Nanotech, LLC



2015 National Academy of Inventors Inductees



Breakthrough of the Year



**We take pride in educating
next generation leaders in
microbiology and immunology**

Questions:

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Associate Director:
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vasu@musc.edu