

Division of Mathematical Sciences

Tie Luo (Acting Division Director)

Nandini Kannan (Acting Deputy Division Director)

November 16, 2017



Welcome to DMS !

Administrative Staff



Tie Luo
Acting Division Director

Nandini Kannan
Acting Deputy Division Director

Henry Warchall
Senior Advisor

Sharon Alston
Program Support Manager

Onica Andrews
Operations Specialist

Jennifer Connell
Secretary

Catherine Paolucci
AAAS Fellow

Algebra & Number Theory



J. Matthew Douglass



Timothy Hodges



Anatoly Libgober



Andrew Pollington

Analysis



Kevin Clancey



Justin Holmer



Yunping Jiang



Edward Taylor

Applied Mathematics



Marian Bocea



Pedro Embid



Victor Roytburd



Michael Steuerwalt

Computational Mathematics



Matthias Gobbert



Leland Jameson



Yvonne Ou

Probability, Combinatorics & Foundations



Tomek Bartoszyński



Stefaan De Winter

Statistics



Nandini Kannan



Robert Lund



Gabor Szekely



Yong Zeng

Topology & Geometric Analysis



Thomas Ivey



Joanna Kania-Bartoszyńska



Swatee Naik



Christopher Stark



Khoren Claiborne
Student Trainee



Robert Cruz
Program Assistant



Antoinette Dedmon
Program Technology Analyst



Carmen Franceschi
Program Assistant



LaWanda Myers
Program Specialist



Camelita Sellars-Wright
Lead Program Assistant

Mathematical Biology



James Powell



Junping Wang

DMS Budgets

R&RA in \$M	FY15 Actual	FY16 Actual	FY17 Request	FY17 Current	FY18 Request
NSF	\$6,042	\$5,998	\$6,079	\$5,997	\$5,362
MPS	\$1,376	\$1,349	\$1,355	\$1,356	\$1,219
DMS	\$235.40	\$233.95	\$235.10	\$233.51	\$209.78



Major Impacts of FY 2018 Budget Request

- BIGDATA: -\$2 M
- BioMaPS: -\$3.26 M
- Mathematical Sciences Innovation Incubator (MSII): -\$2 M
- Optics and Photonics: -\$1.5 M
- Workforce Program: -\$4 M
- CAREER: -\$2 M
- SaTC: -\$1 M
- Disciplinary Research Programs: -\$2 M

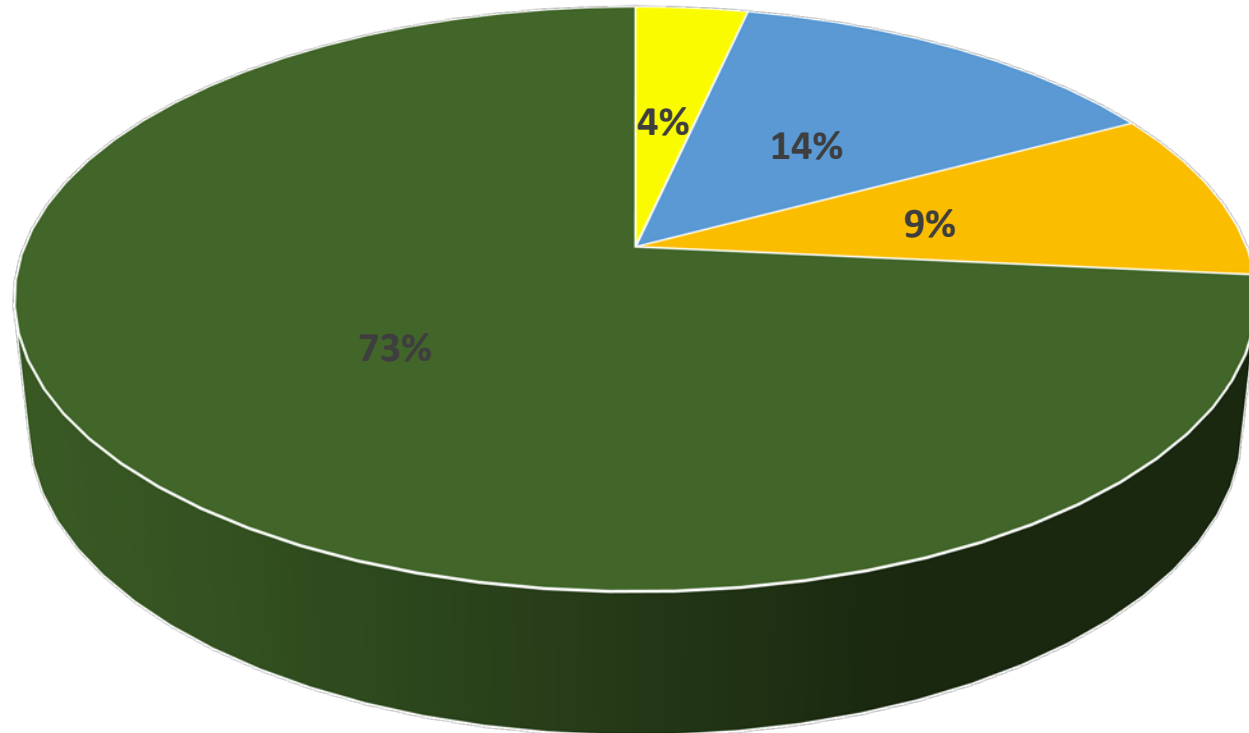


DMS Funding Rates (Competitive Awards)

Comp. Awards	FY14	FY15	FY16	FY17
NSF	21%	22%	21%	21%
MPS	24%	25%	24%	24%
DMS	26%	26%	25%	24%



DMS FY 2016 Funds Allocation



■ Other ■ Inst.&Infra ■ Workforce ■ IIA&Groups



DMS Disciplinary Research Programs

SUPPORTS RESEARCH ACROSS THE SPECTRUM
OF THE MATHEMATICAL SCIENCES

- Algebra and Number Theory
- Analysis
- Applied Mathematics
- Combinatorics
- Computational Mathematics
- Foundations
- Geometric Analysis
- Mathematical Biology
- Probability
- Statistics
- Topology



Special Research Programs

- Focused Research Groups in the Mathematical Sciences (FRGMS)
- Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences (CDS&E-MSS)
- Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS)
- Algorithms for Modern Power Systems (AMPS)
- Algorithms for Threat Detection (ATD)



Research Training and Career Development

- **Workforce Program** in the Mathematical Sciences
 - Research Training Groups in the Mathematical Sciences (RTG)
 - Mathematical Sciences Postdoctoral Research Fellowships (MSPRF)
 - Research Experiences for Undergraduates (REU)
 - NSF Mathematical Sciences Graduate Internship program
- Faculty Early Career Development Program (CAREER)

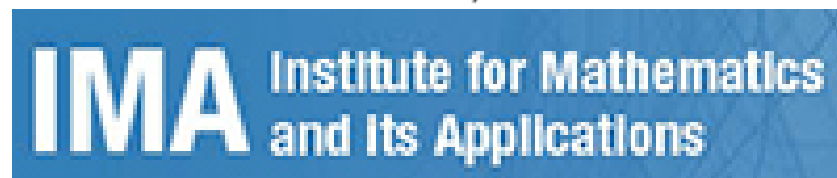
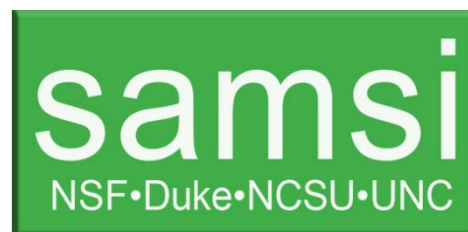
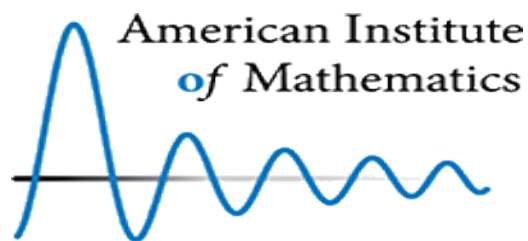


Research Institutes and Infrastructure

- **Mathematical Sciences Research Institutes:**
national resource to advance research in the mathematical sciences and increase the impact of the mathematical sciences in other discipline
- **NSF-Simons Research Centers for Mathematics of Complex Biological Systems (MathBioSys)**
- **Transdisciplinary Research in Principles of Data Science Phase I (TRIPODS)**
- **Mathematical Sciences Infrastructure Program:**
supporting conferences, workshops, community building activities



Mathematical Sciences Research Institutes



Transdisciplinary Research in Principles of Data Science (TRIPODS)

- Big Ideas: Harnessing the Data Revolution (HDR) for 21st Century Science and Engineering
- Partners: CCF/CISE
- Phase I: 12 three-year awards in FY 2017 and \$18M total
- Phase II (anticipated in FY2020): 2-3 large institutes
- TRIPODS + X: Supplements to support collaborations with domain sciences



NSF-Simons Research Centers

- Mathematics of Complex Biological Systems (MathBioSys)
- Big Ideas: Understanding the Rules of Life
- Partners: Simons Foundation, BIO/IOS, BIO/MCB
- Many Letters of intent and proposals received
- Five-year program to support three centers
- Review is on-going and funding decision to be made in early part of 2018



DMS PARTNERSHIPS

- NSF DIRECTORATES/ DIVISIONS
 - TRIPODS (CISE); NSF-SIMONS (BIO); CRCNS (CISE)
- OTHER FEDERAL AGENCIES
 - NIH (Quantitative Approaches to Biomedical Big Data)
 - NIH (Joint DMS-NIGMS Initiative in Math Biology)
 - National Geospatial Intelligence Agency (ATD)
 - Oak Ridge Institute for Science and Education (Internship program)
 - Department of Energy (AMPS)
- PRIVATE FOUNDATIONS: Simons Foundation

