



Leading the Next
Generation of Discovery
and Impact

Now is a pivotal time for biomedical research, and we must seize the opportunity to ensure that basic, translational, clinical, and data sciences at Duke converge to facilitate new discoveries and transform fundamental knowledge to improve the health and well-being of our patients and populations globally.

The talent, capabilities, and commitment of our faculty, staff, students and trainees, as well as the opportunities inherent as an integral part of Duke University and its clinical enterprise create the opportunity for the Duke University School of Medicine to advance its position as a national leader in biomedical research.

The research environment is continually evolving, and Duke must be prepared to lead through times of change. The funding environment is ever-changing, and competition for exceptional talent is intense. Clinical research is undergoing a revolution with new technologies and the need for accelerated results, both of which challenge the traditional processes and policies of the academic medical center. The pace of change and complexity of science beg for creative collaborations and new sources of investment.

Within that context, the School of Medicine embarked on a strategic planning initiative, engaging our faculty and staff to harness their commitment and expertise and guide the future of our research mission. The resulting research plan contained here, *Leading the Next Generation of Discovery and Impact*, is an important extension of the School of Medicine's 2016 Strategic Plan and provides a focus and clarity on our research priorities.

Core to our success will be the recruitment of visionary scientists facilitated by new resources available through Duke's University-wide Science and Technology Initiative. Our success also will require a new level of commitment to nurture and develop the talent we currently have and unwavering focus on conducting research of the highest caliber and integrity. Enhancements to our infrastructure and improvements to processes that were identified through this engagement will support research faculty across disciplines and across the research continuum.

Recognizing the dynamic nature of scientific discovery, this plan was created with an intentional and appropriate need for flexibility. This will be a "living" plan that will evolve to meet a changing landscape.

My sincere thanks to the many people who invested their time and talent to develop this plan. Through this process, we achieved great clarity in our goals, resources, and needs through meaningful engagement with our faculty. Our work has just begun, and I am excited about what the future holds. Each of you will play an important role in achieving our mission to lead in scientific discovery that has lasting impact on health.

Sincerely,

A handwritten signature in black ink that reads "Mary E. Klotman MD". The signature is fluid and cursive, with the "MD" part being more distinct and blocky than the first name.

Mary E. Klotman, MD
Dean, Duke University School of Medicine
Vice Chancellor for Health Affairs, Duke University



Leading the Next Generation of Discovery and Impact

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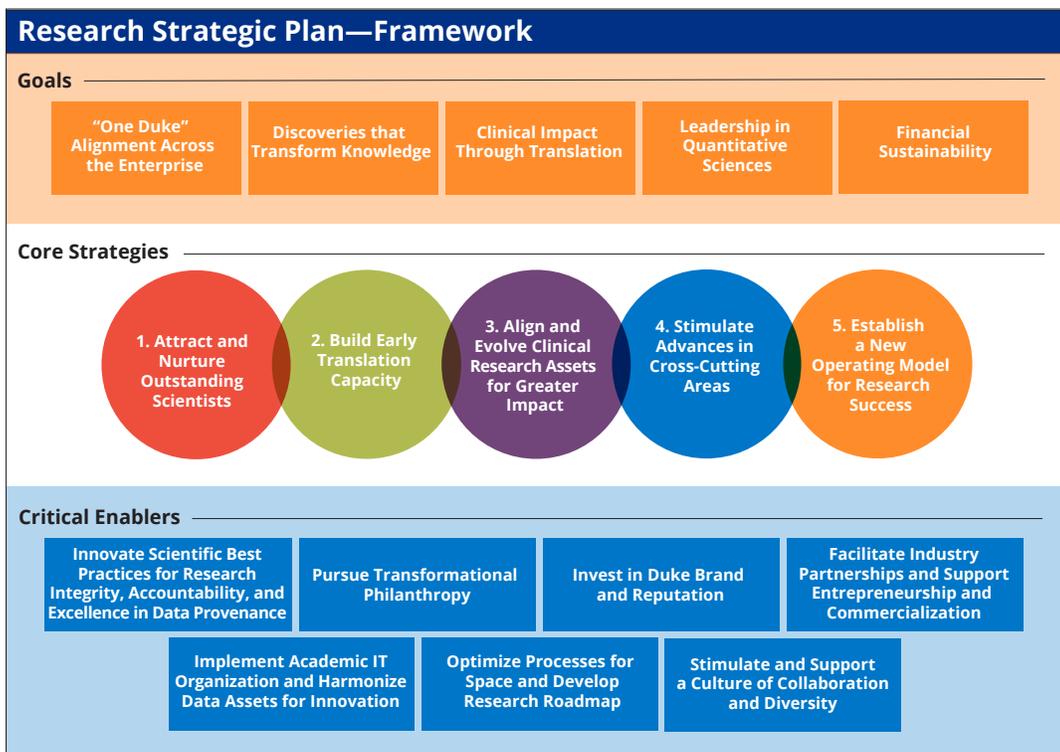
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Executive Summary

The Duke University School of Medicine (SOM) is the vibrant home for the next generation of discovery. As we look ahead, our capacity for innovation will stem from knitting together our existing strengths in fundamental basic science and deepening our growing translational capabilities, our integration with the clinical enterprise, and our unique scale and depth in clinical research. We define five broad goals that we aim to achieve over the next five years:

1. Realize the promise of “One Duke” alignment by leveraging Duke’s diverse resources and assets within the Medical School, the clinical enterprise, and the University.
2. Conduct visionary science which will transform knowledge by fostering and recruiting outstanding investigators.
3. Translate discoveries in our labs into therapies by optimizing the environment and infrastructure for early translation.
4. Achieve national leadership in the quantitative sciences by bolstering existing investments in data sciences and linking these throughout our programs.
5. Establish the foundations for the long-term financial sustainability of our research programs.

Over the past nine months, the School of Medicine engaged nearly 100 faculty, leaders and administrators in the identification and development of these research priorities. This planning effort built from the *School of Medicine Strategic Plan of 2016* and was undertaken with consideration for existing strategic efforts including Translating Duke Health, the Duke Cancer Institute Strategic Plan, the Science and Technology Initiative, Forge, and our new organization structure for academic information technology. Our research goals will enable us to fulfill the School of Medicine’s ideals of excellence, integrity, respect, diversity and inclusion, commitment to service and solving real world problems, and our stated priorities will bring a new urgency to our community in transforming discoveries into improved human health.



The Research Planning Committee initiated the process with an assessment of the current state of our biomedical research enterprise.

National Research Context

- Over the past 15 years, NIH funding (in inflation-adjusted terms) is down 11%, whereas private research funding from large foundations and philanthropists has increased, requiring schools to diversify their funding sources;
- There is robust competition amongst the research-intensive institutions, and now also with industry, for talent. Winners in this competition will have a strategic advantage in conducting the best science, securing funding, and creating societal impact;
- Technological advances are enabling new competitors and new types of research (e.g. virtual trials, artificial intelligence). Medical schools that do not invest in new types of research platforms will not be able to compete at the highest levels.

Duke Considerations

- **National Reputation:** Duke School of Medicine is consistently ranked in the top 10 of research intensive schools by both US News & World Report and NIH funding. While Duke has a number of prominent faculty recognized for their achievements through prestigious awards and memberships, many peer institutions outperform us in this regard.
- **Research Portfolio Trends:** Approximately 70% of the School's budget is from sponsored funds. SOM research expenditures increased 25% from \$591M to \$741M from FY08 to FY17 and funding has significantly diversified, with NIH comprising less than 50% of overall funding in FY17 compared to 61% in FY08.
- **NIH Research Funding Trends:** Duke ranks 8th in total NIH funding, with 6 clinical departments in the top 10. Since FY08, Duke experienced a slight decline in NIH expenditures, from \$359M to \$348M in FY17 as the portfolio mix diversified. Duke has one of the highest ratios of dollars awarded per principal investigator among the top 20 NIH funded academic medical centers.
- **Faculty Demographics:** Approximately one-third of our faculty reported $\geq 50\%$ research effort in 2016. We are dependent on late-career investigators, a cohort which has increased by $>35\%$ over the last 5 years and now generates 25% of total research funding. Our future success will depend on our ability to develop our outstanding junior and mid-career investigators while also competing at the highest level for talent.
- **Clinical Trials:** New clinical trial approvals with Duke as a site have remained flat since 2012, and only about 2% of Duke patients participate in clinical research.
- **Entrepreneurship and Commercialization:** Despite recent improvement, Duke lags behind peers in tech transfer and commercialization activities such as invention disclosures, patents, and license agreements and income.
- **Initiatives at Peer institutions:** Many of our peers have secured significant gifts and investments on the order of \$50-100M+ to support new research initiatives, showing that "Big Ideas" can generate transformational philanthropy or investment.

Priority # 1: Attract and Nurture Outstanding Scientists

Duke will attract and retain leading investigators of unique talent and imagination. As the quality of our faculty determine the future of the institution, we will prioritize our ability to recruit and nurture the best faculty. We will also assist them to effectively promote their excellence.

1.1 Complete priority recruitments of outstanding basic and translational faculty investigators through new initiatives during the next five years.

- Strengthen the basic sciences and enable discovery through recruitment of visionary, internationally renowned, diverse scientists at all academic levels through the campus-wide Science and Technology Initiative.
- Strategically expand capacity by hiring top faculty through targeted initiatives supporting Duke Health priorities, such as Translating Duke Health and selected partnership hires.
- Develop the cadre of physician scientists through both recruitments and development opportunities and enhance their impact on basic knowledge and translation.

1.2 Commit to best practices and processes for recruitment and promote a culture of collaboration for talent acquisition.

- Recruitments utilizing institutional resources will employ recruitment best practices, including systematic national searches, with the goal of hiring only top candidates. We will re-institute the partnership hiring program between the SOM and academic units as determined by institutional priorities.
- Encourage faculty to actively search for top recruits using networks and peer relationships while ensuring diversity of faculty as a top institutional priority.
- Enhance success of recruitments by sharing best practices across Departments, pairing those with less recruitment experience with more experienced leaders in recruitment, and tapping into Dean's Office expertise.
- Assemble startup packages that are competitive with top research institutions.
- Accelerate focused philanthropy so as to increase the number of endowed professorships for mid-career and senior faculty.
- Highlight contributions to recruitment during the annual review process.

1.3 Promote a culture that nurtures investigators and provide the support needed to accelerate outstanding careers in science.

- Enhance new investigator experience through targeted orientation and early networking.
- Enhance mentorship programs for outstanding early-career investigators, including those available through the Office for Faculty Development.
- Establish junior endowed professorships to recognize the most outstanding early-career investigators.
- Assess opportunities for tenure-based reinvestment models.
- Promote internal and external recognition of our outstanding junior and mid-career investigators.
- Ensure continued focus on a diverse and inclusive environment that facilitates the opportunity for all investigators to conduct exemplary science.

1.4. Construct and market a postdoc experience that serves as a differentiator.

- Coalesce the postdoctoral community to understand their needs and identify opportunities to nurture their community.
- Expand, communicate, and fully leverage career development resources in conjunction with the Office of Postdoctoral Services.
- Design unique opportunities not available elsewhere that attract stellar candidates, such as joint engineering/medicine, data science training, incentive/award opportunities, and innovation and entrepreneurship experience. Provide support for T32 grant applications.
- Facilitate multidisciplinary mentoring with PIs from multiple departments.

Priority #2: Build Early Translation Capacity

Establish an environment that enables Early Translation to thrive across research platforms that integrate basic scientists, clinical investigators, and clinicians.

Duke's breadth across the full continuum from bench research to clinical delivery is a distinguishing characteristic and provides a significant opportunity for differentiation in the future – if these components can align and interlock. However, while Duke has a well-developed early phase research unit and a broad spectrum of disease-relevant research, we have not yet optimized capacity for early translation to therapies or to commercialize for broader societal impact.

2.1 Expand the collection, provide seamless access, and strengthen the governance of biobanking and genomics resources.

- Realize our long-held aspiration for seamless access by our faculty to the biospecimen resources across our enterprise. Establish a governance and leadership structure to implement and provide ongoing oversight of biobanking services.
- Complete the assessment and implementation plans of our biobanking services and incorporate any changes for the field and approaches at Duke including needs for Translating Duke Health or other emerging areas of interest.
- Establish documentation and protocols for investigators on how to incorporate biospecimen requirements into their grant proposals.
- Adopt and implement a centralized laboratory information management system (LIMS), to include a central biospecimen directory.
- Integrate electronic health record (EHR) clinical datasets with biorepository and bioinformatics datasets to advance the use of biomarkers in early translational research.
- Identify a vendor to establish a genomics repository integrated with Translating Duke Health, Learning Health Units, and/or other areas of interest.

2.2 Expand access to bioinformatics expertise to query and analyze large “omics” data sets, clinical data sets, and integrate biomarker analyses.

- Conduct SOM-wide evaluation of opportunities to increase visibility, integration of, and access to Duke's bioinformatics expertise and expand staff resources if needed.
- Incorporate assessment of the bioinformatics needs into the recruitment of the Biostatistics and Bioinformatics Chair.
- Address market competitiveness of salaries for core facility bioinformaticians & biostatisticians to recruit and retain strong candidates (including Duke's own graduate students).

2.3 Expand access to early drug discovery and Good Manufacturing Practice (GMP) facilities and Good Laboratory Practice (GLP) support.

- Conduct full inventory of relevant resources available across campus.
- Pursue collaborative opportunities with the Department of Chemistry, including the possibility of partnering on growth and development of the existing small molecule synthesis facility.
- Explore partnerships to expand access to small molecule screening facilities.
- Explore GMP expansion options (through development, mobile, or contract) for proof of concept up to phase I. GLP capability will address the need for preclinical animal and proof of concept work that sponsors are demanding.
- Expand the scope and capabilities of the Pharmacokinetics/Pharmacodynamics (PK/PD) core lab.
- Provide regulatory support for GLP studies.

2.4 Increase the number of T1 clinical trials, selectively recruit additional basic and translational scientists, and facilitate the participation of clinicians.

- Create translational research toolkit for investigators that includes a roadmap of detailed steps on how to translate Duke bench research to clinical trials in humans.
- Provide support to expand translational research training programs.
- Promote programmatic co-location of basic and translational investigators to encourage collaboration on specific organ/disease-based research where possible.
- Enhance basic/translational interaction through competitive pilot projects and seed funding.
- Evaluate and, where needed, implement incentives and approaches for clinician participation in enrollment.

2.5 Encourage and facilitate Duke investigators' abilities to pursue and secure external research partnerships and commercialization opportunities with industry and venture capital.

- Establish uniformity/standardization of partnership umbrella agreements.
- Implement mechanism(s) to mitigate the impact of Duke's current UBIT (Unrelated Business Income and Tax) restrictions on investigator-industry partnerships.
- Provide business development expertise to support investigators' ability to execute partnerships through the Office of Licensing and Ventures (OLV) and Innovation & Entrepreneurship (I&E).
- Organize a periodic Duke - industry "Expo" to bring together T0/T1 investigators, industry sponsors, angel investors, and venture capital firms to highlight Duke's capabilities and discuss industry needs.
- Partner with investors/industry partners to secure biotechnology incubator or accelerator space.
- Explore opportunities to expand pre-human clinical studies through partnership with the North Carolina State College of Veterinary Medicine.

Position Duke as the leading academic institution for impact and innovation in clinical research.

The role for consumers and patients in clinical research is rapidly evolving. Social media, crowd-sourcing, wearable and digital technologies will all profoundly influence this evolution. New clinical trial networks are being developed which take advantage of these innovations. To continue as a national leader in clinical research, Duke will need to more closely align its various clinical research assets (e.g. DCRI, DOCR, CTSI, and others), lead in innovating new research networks, differentiate its site based research by integrating deeply with the clinical enterprise, and implement necessary interventions to improve clinical research financial results.

3.1 Integrate clinical research assets from across Duke to achieve enhanced impact.

- Form a Coordinating Council for clinical research, representing major organizational units, as the enterprise-wide governance body for clinical research.
- Identify areas of synergy/unnecessary duplication across operating units and define the optimal role of each unit in executing the overall clinical research mission.
- Align the CTSI's priorities and resources with the SOM research strategic plan.
- Promote and value clinical research involvement by Duke faculty through balanced scorecards, clinical research RVU calculations, and recognition for clinical research contributions during the APT process, even when not a study PI.
- Accelerate opportunities for participant engagement while continuously improving their experience and value.
- Enhance position in cancer clinical research by growing enrollment in existing studies and initiating new high-impact trials.

3.2 Realize the potential for the Learning Health System model through Learning Health Units.

- Design the architecture and establish the goals, prioritization schema and processes for Learning Health Units by integrating key assets from Clinical Service Units, Clinical Research Units, and Data Science Units that will establish a continuous, embedded research and development engine to advance health outcomes.
- Pilot Learning Health Units, which may begin with one or more from Surgery, Primary Care, Pediatrics, Orthopedics, or Cardiology.
- Become the site of choice for clinical research participation and promote "First Duke" approach to multi-site trials through successful integration with clinical enterprise service lines.

3.3 Implement portfolio management approach for clinical research.

- Improve financial and scientific return on investment of Duke's clinical research enterprise by implementing portfolio management of clinical research and improving financial data transparency at the clinician, Clinical Research Unit, and leadership levels.
- Build on new Clinical Research Management System to develop information systems and metrics to enable portfolio management. Develop ability to create consolidated financial reports with granular study-level data.
- Create "breakthrough status designation" for high-impact studies to enable administrative/operational prioritization.

3.4. Form a new national health-system based implementation science network.

- Form national implementation science network of leading health systems and disease-based research networks to enable large-scale implementation science research.
- Prioritize national networks for participation where Duke can play a unique role given the strengths of the DCRI.
- Leverage available "big data" and lead in data science innovation.

3.5. Solidify and expand local, regional, and virtual clinical research networks to expand participation in clinical research and accelerate evidence generation.

- Solidify and expand current network in North Carolina and border states building on existing clinical relationships (e.g. Heart Care Plus+, Cancer Care Plus+, Duke Cancer Network and Duke Heart Network).
- Accelerate research participation at Duke and with regional partners by achieving high levels of cohort enrollment in priority research and clinical areas with an initial target of doubling the rate of participation.
- Assess DCRI role in local/regional clinical research network.
- Forge strategic partnerships with leading technology companies to conduct virtual trials that facilitate researching new interventions and implementing novel methods of data collection, recruitment, and participant engagement.

Duke will capitalize on strengths and investments in cross-cutting thematic areas that provide an opportunity to accelerate impact in discovery science and clinical care across disciplines and diseases.

Research breakthroughs are increasingly occurring at the convergence of various disciplines. Our School of Medicine will build on existing strengths and investments in transdisciplinary collaborations to accelerate our pace of discovery and amplify our impact. Recognizing the dynamic nature of scientific discovery, we will regularly scan for emerging opportunities where Duke can lead.

4.1 Leverage investments in data science, research information technology, and informatics faculty to offer energy and expertise to translate clinical, social, and administrative data into insight, innovation, healthcare, and health.

- Capitalize on new Vice Dean for Data Science and Information Technology position to coordinate data science initiatives and opportunities for greatest impact.
- Coordinate with the University Quantitative Initiative and +Data Science program.
- Promote data liquidity and access by establishing thoughtful governance to revise and modernize how Duke stores, curates, and accesses data.
- Expand and accelerate Duke Health's data and analytics capacity by establishing a Data Science Accelerator to stimulate advanced use of data science methodologies and tools and bridge the transition to a mature research IT environment.
- Increase engagement of clinical and quantitative faculty and staff across the School of Medicine, University, and Health System through design workshops led by Forge. The emphasis will be to identify actionable questions and healthcare delivery pain points.
- Enable data science learning and workforce development through incorporation and mentoring of trainees across many disciplines and levels of the Duke landscape, spanning undergraduates, master's-level students, doctoral candidates, medical residents, and postdoctoral scholars and fellows. Trainees are embedded on vertically led project teams and develop hands-on skills in research methods and team science.
- Catalyze Forge to initiate collaboration across the Duke Clinical Research Institute, the Duke Cancer Institute, and the Departments of Population Health and Biostatistics and Bioinformatics to ensure that high quality data science comprises a central element of multicenter clinical studies, "big data" and "big population" projects led by Duke faculty.
- Outsource, insource, and partner with technology leaders, engage person-powered networks, and apply modern research methods to answer population health and healthcare delivery questions to ensure Duke remains competitive in a rapidly evolving field. Leverage the Data Science Accelerator to generate scalable and licensable technologies that will diffuse outward from Duke to reach other systems and populations.
- Systematically identify and disseminate trusted health information ("fact checking") related to actionable health data science, establishing a trusted venue for information and dialogue about health data science.

4.2 Accelerate discoveries and their impact on patient lives through Translating Duke Health.

- Advance TDH efforts in priority areas – cardiovascular health, brain resilience and repair, early life factors influencing health, understanding and controlling the immune system, and brain metastases.
- Align SOM research strategic plan with TDH priorities in the following areas – recruiting faculty who can help to advance TDH objectives and achieving breakthroughs in foundational science, early translation, clinical research, precision medicine, genetics and genomics, and medicine - engineering research.
- The Research Planning Committee identified engineering the human immune system as a thematic priority that leverages Duke’s existing strength and in which we can make significant advances. We will coordinate a transformational effort in this area, supported by philanthropy and external investment.

4.3 Achieve research breakthroughs at the convergence of medicine and engineering by promoting collaboration between faculty, trainees and students in the Schools of Medicine and Engineering.

- Invest in growing research program in five prioritized areas:
 - Applying Artificial Intelligence/Machine Learning/Data Science to imaging and other device data streams.
 - Applied robotics & novel medical devices to address unmet needs in medical procedures.
 - Stem cell biology, regeneration, engineering of organoid systems, and microphysiologic systems.
 - Biomaterials.
 - Genomics and computational biology – genome editing, synthetic genomics – in coordination with the Duke Genomic Medicine Collaboratory.
- Promote more purposeful interactions between the medicine and engineering faculty. Solidify the commitment to, and streamline the joint hiring process for, medicine-engineering recruitments.
- Expand BioDesign efforts to “bridge the valley of death in medicine-engineering design” linking to Duke-wide Innovation & Entrepreneurship (I&E) initiatives.
- Create a competitive joint graduate-student/postdoc/fellows program.
- Promote industry partnerships for research and support commercialization efforts for Duke medicine and engineering innovations and companies.

4.4 Innovate in precision medicine, genetics, and genomics to achieve distinguished impact in genomics based discoveries, research methods, and translation to clinical care.

- Launch the *Duke Genomic Medicine Collaboratory* as the nexus for the genetics and genomics community at Duke.
- Deepen our precision medicine, genetics, and genomics research for populations that Duke is uniquely positioned to serve, including rare and undiagnosed diseases, patients and families in Duke’s risk-based arrangements, and populations unique to North Carolina.
- Enhance Duke’s emerging technology and information platforms to support precision medicine analytics.
- Enhance Duke’s role as the leader in deep phenotyping in rare and undiagnosed diseases to facilitate breakthroughs in diagnosis and treatment.
- Improve functional genomics infrastructure to the point of international prominence.
- Encourage bi-directional or “retro-translational” research collaborations for which Duke is particularly distinguished among peers.
- Identify national vendors for wide-scale genomics integrated with Duke Health and/or TDH programs (pilot with ~ 10,000 with larger goal for scale).

Strengthen SOM's organizational structure and operations to best support the future of academic medicine.

The future of research will require a new operating model. Its features will be: a nimble and responsive administrative structure that provides appropriate expertise to critical functions; financial discipline; aligned resources with the clinical enterprise; and scalable core resources.

5.1 Improve interface with the clinical enterprise to deliver on our renewed focus on clinical research and a new intensity for precision medicine, genetics, and genomics.

- Promote leadership alignment of the clinical enterprise and SOM to realize the learning health system vision through joint appointments which embed research expertise and accountability within the clinical delivery system.
- Achieve high alignment and integration for clinical research; data science and information technology; and precision medicine, genetics, and genomics implementation.

5.2 Address research financial deficit and build long-term sustainability.

- Conduct assessment of School's structural financial deficit and identify levers to improve the School's financial position.
- Identify opportunities to both reduce our operational expenses (e.g. by streamlining redundant services and sun-setting those services where the value is no longer optimal) and to increase our revenues (e.g. through new philanthropy, industry partnerships, and continued success in sponsored research).

5.3 Transform our system of operational support and strengthen oversight of research administration.

- Duke's research portfolio is increasingly complex. The prevailing operating model of centralized and de-centralized activities and services under various management centers must be reconsidered and appropriate adjustments evaluated to maximize service, efficiency, and compliance.
- One initial step will be to review functions and resources which can be aggregated into larger research administrative operating units so as to achieve efficiency and utilization of appropriate expertise.

5.4 Ensure appropriate allocation of resources to cutting edge technology that facilitates research.

- Form a Cores Scientific Advisory Committee to advise on the proactive development of new core resources and identify cores that should be sunset.

Successful execution of this plan requires upgrades to underlying infrastructure and processes that support our faculty’s research. We have prioritized efforts in the following areas which will be required for us to implement our strategic initiatives.

Critical Enabler	Requirements
Innovate and Implement Scientific Best Practices for Research Integrity, Accountability, and Excellence in Data Provenance	<ul style="list-style-type: none"> • Promote the development of IT solutions to enhance data integrity and sharing. • Select enterprise wide solutions to electronic data archiving (e.g. laboratory notebooks) for data management and review. • Conduct a national roundtable discussion with research leaders from peer institutions on the topic of laboratory culture, advancing scientific integrity, open science, and data reproducibility. • Meet human resource needs in the Research Integrity Office. • Add research integrity as a segment to each “Research Day”. • Expand Responsible Conduct of Research training.
Pursue Transformational Philanthropy	<ul style="list-style-type: none"> • Continue to execute plans from Duke Health Development and Alumni Affairs review. • Align Development efforts with SOM strategic priorities. • Position Duke for transformational philanthropy through focused development efforts around visionary ideas for transforming knowledge and realizing health improvement.
Invest in Duke Brand and Reputation	<ul style="list-style-type: none"> • Significantly expand internal and external PR and marketing efforts to create ‘buzz’ around Duke’s successes. • Engage key stakeholders (Boards, donors, volunteers) in communicating our successes and advancing our mission. • Celebrate the accomplishments of outstanding investigators.
Facilitate Industry Partnerships and Support Entrepreneurship and Commercialization	<ul style="list-style-type: none"> • Create senior-level business development role for cultivation of institutional partnerships with top companies in collaboration with campus. • Strengthen partnerships with OLV and I&E to support company formation and out-licensing of innovations. • Enhance relationships with Duke alumni entrepreneurs and venture capitalists. • Assess Duke’s commercialization and licensing policies to identify opportunities for changes that would incentivize entrepreneurial endeavors.
Implement Academic IT Organization and Harmonize Data Assets for Innovation	<ul style="list-style-type: none"> • Implement 5 components of Research IT Governance and Organization plan: 1) Instill an organizational culture which values the integration of research and clinical information technology; 2) Build a strong governance process; 3) Establish an Academic Computing Organization; 4) Expand Research IT Infrastructure Services; 5) Expand and Accelerate Duke Health’s Data and Analytics Capacity
Optimize Processes for Space and Develop Research Roadmap	<ul style="list-style-type: none"> • Enhance the efficiency of space utilization by implementing a formal space governance structure, policy and measures. • Develop and communicate an “interactive research roadmap” that clearly identifies resources available to researchers from various operating units.
Stimulate and Support a Culture of Collaboration and Diversity	<ul style="list-style-type: none"> • Promote a culture of collaboration in which multidisciplinary and diverse perspectives are incorporated to enhance results. • Leverage data from the Diversity and Engagement Survey to develop mechanisms for enhancing our culture of diversity and inclusion. • Launch and execute the Science and Technology Initiative in alignment with campus. • Facilitate multi-unit recruitments.

The development of the Research Strategic Plan was guided by the Research Planning Committee. Seven Working Groups were formed to develop recommendations on planning priorities – Recruitment; Early Translation; Clinical Research; Medicine and Engineering; Infrastructure; Precision Medicine, Genetics, and Genomics; and Engineering the Immune System. Working Group membership represented diverse perspectives across SOM and Duke Health.

Research Planning Committee

Mary Klotman, MD, Chair
Ebony Boulware, MD
Blanche Capel, PhD
Lesley Curtis, PhD
Geoff Ginsburg, MD, PhD
Simon Gregory, PhD
Bart Haynes, MD
Adrian Hernandez, MD
Kim Johnson, MD

Allan Kirk, MD, PhD
Bob Lefkowitz, MD
Steve Lisberger, PhD
Donald McDonnell, PhD
Paul Modrich, PhD
Chris Newgard, PhD
Sallie Permar, MD, PhD
Eric Peterson, MD
Raphael Valdivia, PhD

1: New Strategies to Recruit the Best

Chairs: Raphael Valdivia & Steve Lisberger

2: Enrich the Environment for Early Translation to Accelerate Discoveries Into the Clinical Stage

Chairs: Donald McDonnell & Geeta Swamy

3: Future of Clinical Research

Chairs: Adrian Hernandez & Heather Whitson

4: Innovating at Convergence of Medicine & Engineering

Chairs: Geoff Ginsburg & Kathy Nightingale

5: Infrastructure Planning

Chair: Scott Gibson

6: Precision Medicine, Genetics, and Genomics

Chairs: Simon Gregory & Al La Spada

7: Engineering the Immune System

Chairs: Bart Haynes & Georgia Tomaras

The development of the plan was facilitated and supported by Stacy Palmer, Associate Dean for Strategic Planning and Chief of Staff; Scott Gibson, Executive Vice Dean for Administration; and Tom Enders, Jared Augenstein, Zerrin Cetin and Jan Norris of Manatt Health Strategies.

Research Planning Committee

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Jiaoti Huang

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Sallie Permar

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Enrich the Environment for Early Translation to Accelerate Discoveries Into the Clinical Stage

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Future of Clinical Research

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Jeff Ferranti

Dan George

Shelley Hwang

Kim Johnson

Jennifer Li

Tom Owens

Michael Pencina

Eric Peterson

Linda Sutton

Anthony Viera

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Innovating at Convergence of Medicine & Engineering

**Chairs: Geoff Ginsburg
& Kathy Nightingale**

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Tosh Chilkoti

Greg Crawford

Ken Gall

Katie Garman

Joe Izatt

Nandan Lad

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George Truskey

Infrastructure Planning

Chairs: Scott Gibson

Coleen Cunningham

Tom Denny

Joanna Downer

Jen Ellis

Mike Krangel

Todd Leovic

Paul Modrich

Moria Montalbano

Scott Palmer

Geeta Swamy

Georgia Tomaras

Laurianne Torres

Raphael Valdivia

Precision Medicine, Genetics, and Genomics

Chairs: Simon Gregory

& Al La Spada

Suresh Balu

Geoff Ginsburg

Nico Katsanis

Warren Kibbe

Priya Kishnani

Doug Marchuck

Lori Orlando

Tim Reddy

Dev Sangvai

Svati Shah

Vandana Shashi

Greg Wray

Engineering the Immune System

Chairs: Bart Haynes

& Georgia Tomaras

Todd Bradley

Simon Gregory

Mike Kastan

Allan Kirk

Mike Krangel

Joanne Kurtzberg

Qi-jing Li

Donald McDonnell

Smita Nair

John Rawls

Kevin Saunders

Kevin Wiehe