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Key questions defining research program:
• What are the mechanisms driving calcification in the vessels and valves?
• How do CD73 and adenosine signaling intersect with the mTOR pathway to regulate vascular homeostasis? Does autophagy protect/repair vascular calcification?
• How does telomerase contribute to calcific aortic valve disease?
• How does mechanical stress influence valve calcification?

Key words describing research program:
• Rare disease study to identify novel mechanisms of more common disease pathology
• In vitro and in vivo disease modeling
• Calcific aortic valve disease; vascular calcification
• Vascular extracellular matrix remodeling

Titles for shovel-ready research projects:
• Autophagy flux in healthy vs. calcifying vascular smooth muscle cells
• Calcification potential of vascular smooth muscle cells from the different vascular beds (aortic, coronary, iliac, femoral, and popliteal arteries
• Mechanical stress on extracellular matrix integrity and contribution to calcification
• Role of telomerase in vascular cell phenotype switching

Data sources for shovel-ready research projects:
• Primary VSMCs
• Banked histology, RNA, & protein samples
• Derived from cultured VSMCs and valve interstitial cells
• Derived from experiments with patient-derived fibroblasts