

EPSCoR
NEW HAMPSHIRE

*Advancing the State's Research
Competitiveness in Science and Engineering*

NH BioMade
Advancing Biomaterials



Outreach and Education

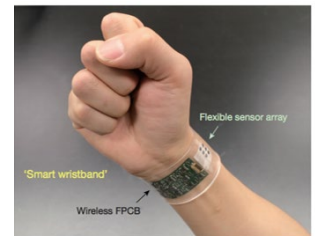
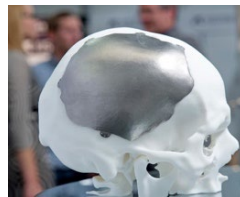
- ❖ Seed grants for new research
- ❖ Student training, internships
- ❖ Collaborations with industry
- ❖ Access to university labs and equipment
- ❖ Professional development training
- ❖ Scholarships for community college graduates to transfer to 4-year programs
- ❖ Teacher training, new courses

Results to Date

- ✓ 66 publications
- ✓ 2 patents (9 pending)
- ✓ \$8.2 MM in new research grants
- ✓ 88 students

Biomaterials such as those used in implants and tissue engineering have stringent and sometimes conflicting specifications. The strength, wear resistance, and porosity of fabricated biomaterials should be similar to human body tissues and parts, yet most currently available technologies cannot meet those requirements.

NH BioMade scientists and engineers are developing new techniques for manufacturing materials used in joint implants, trauma surgery, tissue regeneration, and biosensors for diagnosis and treatment.



Examples of biomaterials used in trauma repair, joint implants, and wearable sensors.



The New Hampshire Center for Multiscale Modeling and Manufacturing of Biomaterials (NH BioMade) is funded by NSF EPSCoR RII Track-1 award 1757371.

NH BioMade Partners



Great Bay
Community College
Portsmouth / Rochester





Pathways to Success

Undergraduate students receive scholarships and internships, conduct research, write papers and give presentations at national conferences.



Recent EPSCoR Awards

Project	Institution	EPSCoR Program	Duration	Amount
<i>New Hampshire Center for Multiscale Modeling and Manufacturing of Biomaterials (NH Bio-Made)</i>	UNH	NSF RII Track-1	2018-2023	\$20,000,000
<i>Advancing Manufacturing and Biotechnology through an On-Demand Sensor Platform: Investments in the Development of Engineering Principles and the Future Workforce</i>	UNH	NSF RII Track-2	2022-2026	\$5,997,238
<i>Computational Methods and Autonomous Robotics Systems for Modeling and Predicting Harmful Cyanobacterial Blooms</i>	Dartmouth	NSF RII Track-2	2019-2023	\$5,989,336
<i>SitS: FroSen: Novel soil frost sensing systems for tracking freeze-thaw cycles and their implications for ecosystem carbon and nutrient dynamics</i>	UNH	USDA AFRI	2021-2025	\$1,119,160
<i>High-Strength, High-Ductility, High Entropy Alloys with High-Efficiency Native Oxide Solar Absorbers for Concentrating Solar Power Systems</i>	Dartmouth	DOE Lab Partnership	2020-2023	\$749,969
<i>Miniaturization of Instrumentation and Electronics for CubeSats</i>	UNH	NASA	2019-2022	\$400,000

EPSCoR Awards to NH, 2004-2021

(\$K)	NSF	NASA	USDA	Energy	Defense	Total
Total	98,847	6,979	12,067	6,564	3,682	128,139
Total by institution						
UNH	67,769	2,839	10,180	4,654	1,391	86,834
Dartmouth	25,888	2,573	1,888	1,910	2,290	34,549
PUIs, CCSNH	3,654	365				4,018
Industry	1,191	499				1,690
Nonprofit	345	145				489
National Lab		559				559

NH EPSCoR State Director
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