

# Boston Claude D. Pepper Older Americans Independence Center for Function Promoting Therapies

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# Uniqueness of the Boston OAIC's Thematic Focus and Approach

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## ◆ **Thematic Focus:**

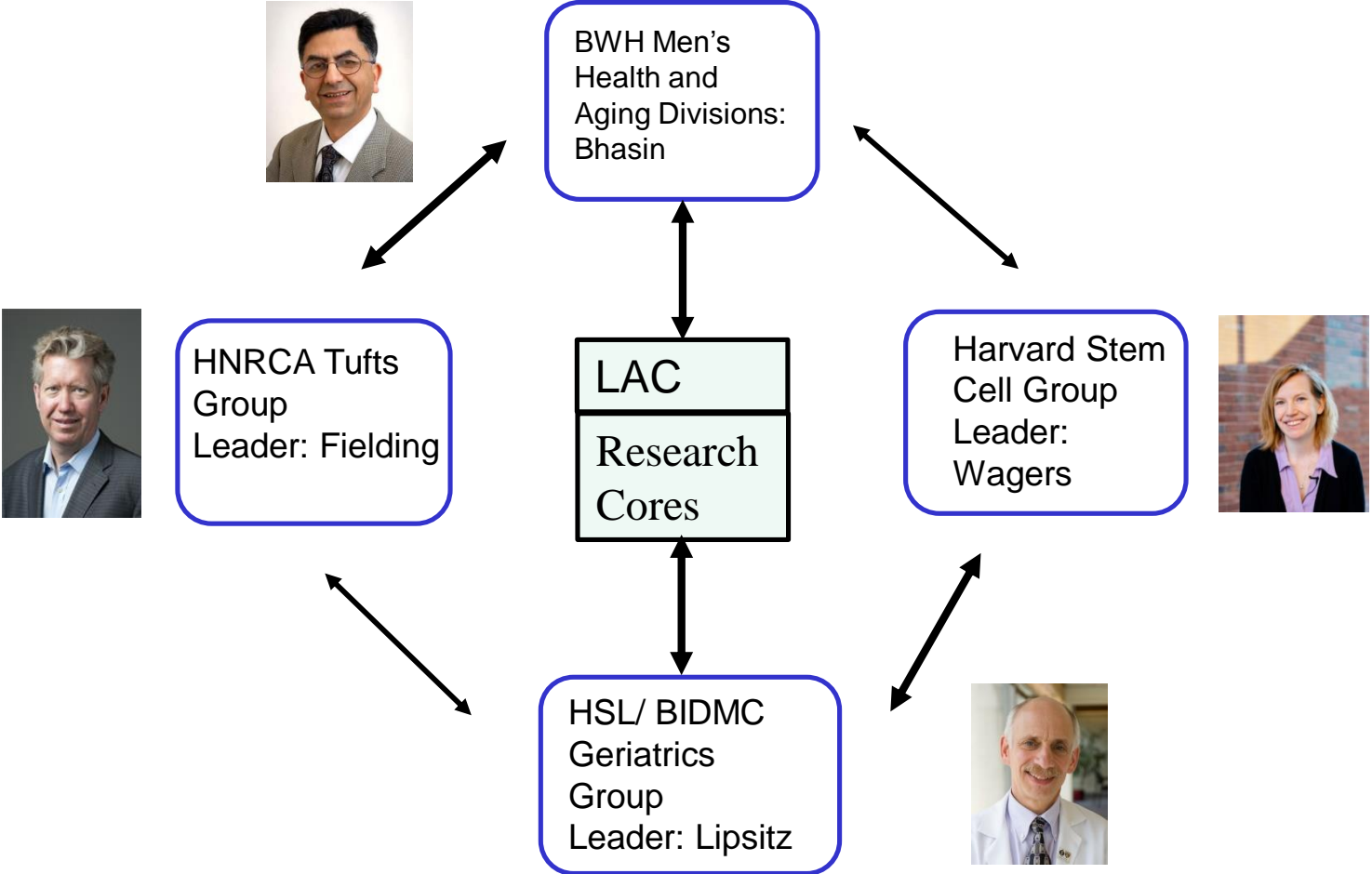
- Function promoting therapies (FPTs) to reduce the burden of functional limitations and disability in older Americans

## ◆ **Approach**

- Bridges the Spectrum of Translational Research
  - » Facilitates mechanism-based discovery, RCTs and epidemiologic research
- Interdisciplinary Nodal Research Network:
  - » Integrates scientists from various disciplines and from various academic centers in Boston (BWH, BIDMC/HSL, HNRCA, and HMS/ HSCI)

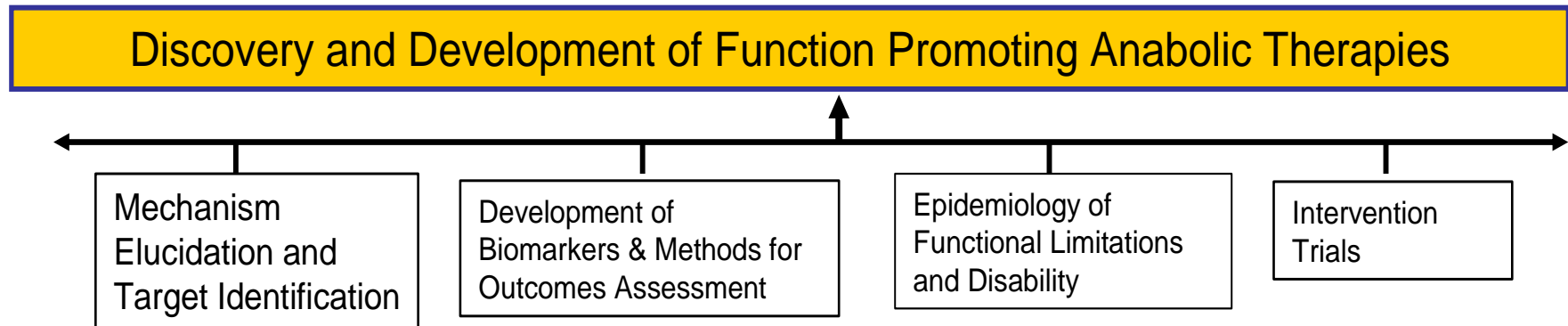


# Boston OAIC as a Nodal Research Network



# Boston OAIC – A Collaborative Network Bridges the Spectrum of Translational Research in Function Promoting Therapies

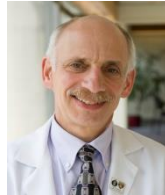
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# Collaborating Centers and Programs

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- ◆ Boston Roybal Center for Active Lifestyle Interventions (Margie Lachman, PI)
- ◆ The Glenn Center for the Biology of Aging (David Sinclair and Bruce Yanker Co-Directors)
- ◆ New England VA Geriatrics Education Clinical Center (GRECC)
- ◆ Harvard Combined Geriatrics Fellowship Program and Harvard T32 Training Grant in Gerontology
- ◆ Harvard CTSI (Lee Nadler, Program Director)



# Research Cores

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- ◆ Biostatistics, Study Design and Analytical Core
  - Director: Thomas G. Travison
- ◆ Preclinical Discovery Core
  - Director: Ravi Jasuja
- ◆ Function Assessment Core
  - Director: Roger Fielding and Thomas W. Storer



# Research Education Core

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REC Directors: Lew Lipsitz, Edward Marcantonio, Amy Wagers

## ◆ First Round of REC Awardees

- Indranil Sinha, MD; Mentors: Wagers, Bhasin
- Ariela Orkaby, MD, MPH; Mentors: Driver, Gaziano
- Michael Lustgarten, PhD; Mentor: Roger Fielding

## ◆ Second Round of REC Awardees

- Lien Quach, MD, PhD, MPH; Mentors: Bean, Trivison
- Kieran Reid, PhD.; Mentor: Fielding



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# Pilot and Exploratory Science (PESC) Projects

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PESC Co-Leaders: Doug Kiel and Monty Montano

◆ First Round:

- Donaro Rivas: MicroRNAs as predictors of anabolic response: Donato Rivas
- Dae Kim: Home-based Exercise to Improve Functional Status after Trans-catheter Aortic Valve Replacement
- Brad Manor: Optimization of Transcranial Brain Stimulation to Improve Physical Function in Older Adults
- Michael Lustgarten: Gut Microbiome and Sarcopenia

◆ Second Round:

- Rajan Singh: Mechanistic basis of differential regulation of polyamine pathway by testosterone in the prostate and androgen-responsive skeletal muscle
- Ronald L Neppi: Loss of lncRNA exacerbates aging associated function decline of skeletal muscle
- Shivani Sahni: Mediterranean diet, related antioxidants and frailty



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# Progress of the First Round of REC and PESC Awardees

Awardee	REC/PESC	Number of publications	Grants and Awards
<b>Dae Kim, MD</b> <b>HMS/ Hebrew SeniorLife</b>	PESC	12 publications	R01 award R01 pending (4%) R21 pending (8%)
<b>Brad Manor, PhD</b> <b>HMS/ BIDMC - Hebrew SeniorLife</b>	PESC	10 publications	R01 award R21 pending (5%) Marcus Appelbaum award
<b>Donato Rivas, PhD</b> <b>Tufts HNRCA</b>	PESC	8 publications	K01 award Foundation grant
<b>Ariela Orkaby, MD</b> <b>BWH/ HMS</b>	REC	18 publications	GEMSSTAR award VA Career Development Award BWH award
<b>Indranil Sinha, MD</b> <b>BWH/ HMS</b>	REC	4 publications	Beeson Award AFAR junior faculty award
<b>Michael Lustgarten, PhD</b> <b>Tufts HNRCA</b>	REC	7 publication	K01 award



## Progress of the Second Round of REC and PESC Awardees

Awardee	REC/ PESC	Publications	Grants and Awards
Lien Quach, MD, PhD, MPH GRECC VA	REC	5 publications	DoD award
Kieran Reid, PhD Tufts HNRCA	REC	10 publications	UG3/NIH award Tufts award HNRCA award
Shivani Sahni, PhD HMS/ Hebrew SeniorLife	PESC	5 publications	R01 (Co-I) Foundation award
Ranjan Singh, PhD HMS/ BWH	PESC		R01 pending
Ron Nepl, PhD HMS/ BWH	PESC	1 publication	R01 submitted



# Developmental Projects

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## ◆ First Round:

- Determination of MCIDs for Late Life Function and Disability Index (Latham, Jette)
- Using 7T MR Spectroscopy to Assess Muscle Function, Quality and Energetics (Jasuja, Balschi, Mukundan)
- A Flexible Trial Management and Randomization System (Travison)

## ◆ Second Round:

- Clinical Outcome Assessment for Evaluating Therapeutic Interventions in Older Adults: Marcia Testa, MPH, PhD; Donald C. Simonson, MD, MPH, ScD



# Organizational Structures to Coordination and Cohesion

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- ◆ Monthly Executive Committee meetings
- ◆ OAIC Conferences:
  - OAIC Monthly Conference/ Pepper Visiting Professor
  - Quarterly Special Seminars/ Symposia
  - ARIES
- ◆ Harvard Combined Geriatrics Fellowship Program and Harvard T32 Training Grant in Gerontology
- ◆ Dense collaborations across the nodal network
- ◆ Distribution of leadership positions and funding cross the nodes:
  - REC and PESC awards distributed across nodes
  - Drs. Lipsitz (HSL/ BIDMC) and Fielding (HNRCA) Associate Directors
  - All nodes represented on the Executive Committee



# Productive and Collaborative Nodal Leadership

## Major New Awards by Senior Pepper investigators

<b>Lew Lipsitz, MD</b>	Kent Award, new R01
<b>Shalender Bhasin, MD</b>	Hooton Foundation 2018 Legacy Award; 2 R01s, R13; Appointed to NIA Council
<b>Monty Montano, PhD</b>	Appointed to ACTG HIV and Aging Working Group
<b>Amy Wagers, PhD</b>	2 R01s, DP1, R13; Recipient of NIH Director's Pioneer Award
<b>Ravi Jasuja, PhD</b>	SBIR grant
<b>Tom Trivison, PhD</b>	Promoted to Associate Professor
<b>Roger Fielding, PhD</b>	Appointed Associate Director of the Jean Mayer USDA Human Nutrition Research Center on Aging
<b>Douglas Kiel, MD</b>	R13; Administrative Supplement



# Productive Leadership: 2018 Publications in Major Journals

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- ◆ Bischoff-Ferrari HA, Bhasin S, Manson JE. *JAMA*. 2018;319(15):1552-1553.
- ◆ Bhasin S, Apovian CM, Travison TG, Pencina K, Moore LL, Huang G, Campbell WW, Li Z, Howland AS, Chen R, Knapp PE, Singer MR, Shah M, Secinaro K, Eder RV, Hally K, Schram H, Bearup R, Beleva YM, McCarthy AC, Woodbury E, McKinnon J, Fleck G, Storer TW, Basaria S. *JAMA Intern Med*. 2018;178:530-541.
- ◆ Bhasin S, Seidman S. *JAMA Psychiatry*. 2018 Nov 14. doi: 10.1001/jamapsychiatry.2018.2661.
- ◆ Bhasin S, Ellenberg SS, Storer TW, Basaria S, Pahor M, Stephens-Shields AJ, Cauley JA, Ensrud KE, Farrar JT, Cella D, Matsumoto AM, Cunningham GR, Swerdloff RS, Wang C, Lewis CE, Molitch ME, Barrett-Connor E, Crandall JP, Hou X, Preston P, Cifelli D, Snyder PJ, Gill TM. *Lancet Diabetes Endocrinol*. 2018;6:879-890.
- ◆ Kim DH, Afilalo J, Shi SM, Popma JJ, Khabbaz KR, Laham RJ, Grodstein F, Guibone K, Lux E, Lipsitz LA. *JAMA Intern Med*. 2019 Feb 4. doi: 10.1001/jamainternmed.2018.6738
- ◆ Berry SD, Rothbaum RR, Kiel DP, Lee Y, Mitchell SL. *JAMA Intern Med*. 2018;178(6):774-780.
- ◆ Samelson EJ, Broe KE, Xu H, Yang L, Boyd S, Biver E, Szulc P, Adachi J, Amin S, Atkinson E, Berger C, Burt L, Chapurlat R, Chevalley T, Ferrari S, Goltzman D, Hanley DA, Hannan MT, Khosla S, Liu CT, Lorentzon M, Mellstrom D, Merle B, Nethander M, Rizzoli R, Sornay-Rendu E, Van Rietbergen B, Sundh D, Wong AKO, Ohlsson C, Demissie S, Kiel DP, Bouxsein ML. *Lancet Diabetes Endocrinol*. 2019 Jan;7(1):34-43. doi: 10.1016/S2213-8587(18)30308-5. Epub 2018 Nov 28.
- ◆ Goldstein JM, Tabebordbar M, Zhu K, Wang LD, Messemer KA, Peacker B, Ashrafi Kakhki S, Gonzalez-Celeiro M, Shwartz Y, Cheng JKW, Xiao R, Barungi T, Albright C, Hsu YC, Vandenberghe LH, Wagers AJ. *Cell Rep*. 2019;27(4):1254-1264.e7.
- ◆ Rao TN, Gupta MK, Softic S, Wang LD, Jang YC, Thomou T, Bezy O, Kulkarni RN, Kahn CR, Wagers AJ. *EMBO J*. 2018;37(24).
- ◆ Bar-Nur O, Gerli MFM, Di Stefano B, Almada AE, Galvin A, Coffey A, Huebner AJ, Feige P, Verheul C, Cheung P, Payzin-Dogru D, Paisant S, Anselmo A, Sadreyev RI, Ott HC, Tajbakhsh S, Rudnicki MA, Wagers AJ, Hochedlinger K. *Stem Cell Reports*. 2018;10:1505-1521.



# Collaboration Across OAICs

<b>Collaborative Initiative (Funding)</b>	<b>Other Collaborating OAICs and Investigators</b>	<b>Purpose</b>
<b>The STRIDE Study (NIA and PCORI )</b>	Yale, UCLA, Maryland, Mount Sinai, Wake Forest, Pittsburgh; UTMB, Johns Hopkins, Michigan, Florida	This is the largest multi-center, randomized clinical effectiveness trial of a fall injury prevention strategy.
<b>The T Trials (NIA)</b>	Yale (Gill); Pittsburgh (Cauley); Florida (Pahor)	The T Trials is the largest MIA-funded multi-center coordinated set of 7 efficacy trials.
<b>The ENERGISE Trial (NIA)</b>	Florida (Pahor, PI); Pittsburgh (Newman); Wake Forest (Espeland, Kritchevsky); Tufts (Fielding)	The ENERGISE Trial is an RCT of anti-inflammatory intervention.
<b>Sarcopenia II Initiative (FNIH)</b>	Maryland (Magaziner, Orwig); Pittsburgh OAIC (Greenspan, Newman, Pereira); Wake Forest (Kritchevsky); Hopkins (Liu)	An FNIH-funded Consortium to develop an evidence-based definition of sarcopenia.
<b>Muscle Mass and Strength Cut-Points for Sarcopenia</b>	Maryland (Magaziner); Florida (Pahor, Mannini); Pittsburg (Newman, Greenspan); Hopkins (Xue, Brown),	To establish muscle mass and strength cutpoints to identify older adults at risk for mobility limitations.
<b>CFAR</b>	Montano (BWH); Brown (JHMI); Justice (Yale)	To establish a CFAR research collaboration on HIV and Aging



# LAC Oversight of Human Subjects Research

Candidate	Award type	IRB approval	Reviewed by the SMC	Safety Monitor or DSMB established/ report received
<b>Year 2017 awardees</b>				
Dae Kim, MD	PESC	Approved	Yes	Safety Monitor designated; report
Brad Manor, PhD	PESC	Approved	Yes	Safety Monitor designated: report
Donato Rivas, PhD	PESC	Approved	Yes	Two Safety Monitors designated: report
Ariela Orkaby, MD	REC	Approved	Yes	Not required since secondary data analysis
Indranil Sinha, MD	REC	No human subjects	Yes	Not required since no human subjects
Michael Lustgarten, PhD	REC	Approved	Yes	Safety Monitor designated: report
<b>Year 2018 awardees</b>				
Lien Quach, MD, PhD, MPH	PESC	Approved	Yes	Not required since secondary data analysis
Kieran Reid, PhD	PESC	Approved	Yes	DSMB established: report
Shivani Sahni, PhD	REC	Approved	Yes	Not required since secondary data analysis
Rajan Singh, PhD	REC	No human subjects	Yes	Not required since no human subjects
Ron Neppi, PhD	REC	No human subjects	Yes	Not required since no human subjects

