

# IVAN J. VECHETTI JR., PHD

## CURRICULUM VITAE

University of Nebraska-Lincoln  
College of Education and Human Sciences  
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## PROFESSIONAL EXPERIENCE

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- 2017-2020     **Postdoctoral Scholar**  
University of Kentucky, College of Medicine, Department of Physiology  
Area of Focus: Skeletal muscle physiology  
*Mentor:* John J. McCarthy, PhD  
*Project Title:* Exosomal myomiR regulation of adipocyte metabolism.
- 2018-2020     **Affiliate Postdoctoral Researcher**  
University of Kentucky, College of Medicine, Department of Physiology  
Area of Focus: Skeletal muscle physiology  
*Mentors:* Charlotte A. Peterson, PhD, John J. McCarthy, PhD  
*Project:* Discovery of biomarkers in muscle, urine, and blood; DoD grant.
- 2016-2017     **Postdoctoral Visiting Scholar**  
University of Kentucky, College of Medicine, Department of Physiology  
Area of Focus: MicroRNAs and skeletal muscle adaptation  
*Mentors:* John J. McCarthy, PhD and Maeli Dal-Pai-Silva, PhD (Brazil)  
*Project Title:* The effect of global depletion of microRNAs in skeletal muscle by Dicer knockout.

## EDUCATION

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- 2015           **Ph.D., Exercise Physiology**  
Sao Paulo State University, Botucatu, Sao Paulo, Brazil  
*Mentor:* Maeli Dal-Pai-Silva, PhD  
*Dissertation:* Morphological and molecular responses of skeletal muscle of aged rats submitted to physical training after atrophic stimulus.
- 2013           **Ph.D. visiting scholar** – 4 months  
University of Kentucky, College of Medicine, Department of Physiology  
Area of Focus: MicroRNAs and muscle cell  
*Mentor:* John J. McCarthy, PhD and Maeli Dal-Pai-Silva, PhD (Brazil)
- 2011           **Master of General and Applied Biology - Molecular Biology**  
Sao Paulo State University, Botucatu, Sao Paulo, Brazil  
*Mentor:* Maeli Dal-Pai-Silva, PhD  
*Thesis:* Morpho-functional adaptations and molecular responses of skeletal muscle in rats submitted to aerobic training
- 2007           **Bachelor of Physical Education**  
Integrated school of Bauru, Bauru, Sao Paulo, Brazil

## EMPLOYMENT HISTORY

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- 2014-2017    **Assistant Professor**  
Integrated School of Bauru, Brazil  
*Course:* Anatomy
- 2020-Present    **Assistant Professor**  
University of Nebraska-Lincoln  
College of Education and Human Sciences  
Department of Nutrition and Health Sciences  
*Area of Focus:* Extracellular Vesicles

## PROFESSIONAL DEVELOPMENT

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- 2019            Good Research Practices and Data Reproducibility, University of Kentucky
- 2020            Writing Winning Grant Proposals workshop
- 2021            Search Committee Training, University of Nebraska-Lincoln
- 2021            Broader Impacts Training, University of Nebraska-Lincoln
- 2021            IANR New Faculty Research Workshop, University of Nebraska-Lincoln
- 2021-2022    Scholarly Enhancement: Research and Discovery, University of Nebraska-Lincoln

## PUBLICATION IMPACT

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### Google Scholar

*h*-index:            15  
*i*10-index:         23  
Total citations:    4,091

### ResearchGate

*h*-index:            14  
Total citations:    4,868  
Publication reads: 15,406

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### U.S. National Library of Medicine MyNCBI:

[https://www.ncbi.nlm.nih.gov/myncbi/119\\_yepVsm5AX/bibliography/public/](https://www.ncbi.nlm.nih.gov/myncbi/119_yepVsm5AX/bibliography/public/)

## SCHOLARLY CONTRIBUTIONS

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### **Original peer-reviewed research articles in PubMed-indexed journals (*listed from newest to oldest*)**

1. Valentino TR, Figueiredo VC, Mobley CB, McCarthy JJ, **Vechetti IJ Jr.** Evidence of myomiR regulation of the pentose phosphate pathway during mechanical load induced hypertrophy. **Physiological Reports**. December 2021. doi: <https://doi.org/10.14814/phy2.15137>
2. Valentino TR, **Vechetti IJ Jr.**, Mobley CB, Dungan C, Golden LR, Gho J, McCarthy JJ. Dysbiosis of the Gut Microbiome Impairs Skeletal Muscle Adaptation to Exercise. *The Journal of Physiology*. 2021 Sep 26. doi: 10.1113/JP281788

3. **Vechetti IJ Jr\***, Wen Y\*, Hoffman JF, Alimov AP, Vergara VB, Kalinich JF, Gaitens JM, Hines SE, McDiarmid MA, McCarthy JJ & Peterson CA. Urine miRNAs as potential biomarkers for systemic reactions induced by exposure to embedded metal. *Biomarkers in Medicine*. September 2021. doi: 10.2217/bmm-2021-0120
4. Valentino TR, Rule BD, Mobley CB, Nikolova-Karakashian M, **Vechetti IJ**. Skeletal Muscle Cell Growth Alters the Lipid Composition of Extracellular Vesicles. *Membranes (Basel)*. 2021 Aug 12;11(8):619. doi: 10.3390/membranes11080619.
5. von Walden F\*, **Vechetti IJ Jr\***, Englund D, Figueiredo VC, Fernandez-Gonzalo R, Murach KA, Pingel J, McCarthy JJ, Stål P, Pontén E. Reduced mitochondrial DNA and OXPHOS protein content in skeletal muscle of children with cerebral palsy. *Developmental Medicine & Child Neurology*. June 2021. DOI: 10.1111/dmcn.14964
6. Figueiredo VC, Wen Y, Alkner B, Fernandez-Gonzalo R, Norrbom J, **Vechetti IJ Jr**, Valentino T, Mobley CB, Zentner GE, Peterson CA, McCarthy JJ, Murach KA, von Walden F. Genetic and Epigenetic Regulation of Skeletal Muscle Ribosome Biogenesis with Exercise. *J Physiol*. 2021 Apr 29. doi: 10.1113/JP281244.
7. **Vechetti IJ Jr**, Peck BD, Wen Y, Walton RG, Alimov AP, Valentino TR, Dungan CM, Van Pelt DW, von Walden F, Alkner B, Peterson CA and McCarthy JJ. Mechanical overload-induced muscle-derived extracellular vesicles promote adipose lipolysis. *FASEB J*. 2021 Jun;35(6):e21644. doi: 10.1096/fj.202100242R.
8. Vann CG, Morton RW, Mobley CB, **Vechetti IJ Jr**, Ferguson BK, Haun CT, Osburn SC, Sexton CL, Fox C, Oikawa SY, McGlory C, Young KC, Phillips SM, McCarthy JJ, Roberts MD. An intron variant of the GLI Family Zinc Finger 3 (GLI3) gene differentiates resistance training-induced muscle fiber hypertrophy in younger men. *FASEB J*. 2021 May;35(5):e21587. doi: 10.1096/fj.202100113RR.
9. Murach KA, Peck BD, Policastro RA, **Vechetti IJ Jr**, Van Pelt DW, Dungan CM, Denes LT, Fu X, Brightwell CR, Zentner GE, Dupont-Versteegden EE, Richards CI, Wang ET, Smith JJ, Fry CS, McCarthy JJ, Peterson CA. Early Satellite Cell Communication Creates a Permissive Environment for Long-Term Hypertrophic Growth. *iScience*. 2021 Mar 29;24(4):102372. doi: 10.1016/j.isci.2021.102372. eCollection 2021 Apr 23.
10. WEN Y, **VECHETTI IJ JR**, ALIMOV AP, HOFFMAN JF, VERGARA VB, KALINICH JF, MCCARTHY JJ, and PETERSON CA. Time course analysis of the effect of embedded metal on skeletal muscle gene expression. *Physiol Genomics*. 2020 Oct 5. doi: 10.1152/physiolgenomics.00096.2020
11. DUNGAN CM, VALENTINO TR, **VECHETTI IJ JR**, ZDUNEK CJ, MURPHY MP, LIN A, MCCARTHY JJ, PETERSON CA. Exercise-mediated alteration of hippocampal Dicer mRNA and miRNAs is associated with lower BACE1 gene expression and A $\beta$ 1-42 in female 3xTg-AD mice. *Journal of Neurophysiology*, 2020.
12. WEN Y, **VECHETTI IJ JR**, VALENTINO TR, MCCARTHY JJ. High-Yield Skeletal Muscle Protein Recovery from TRIzol® after RNA and DNA Extraction. *BioTechniques*. 2020 Aug 11. doi: 10.2144/btn-2020-0083
13. VAN PELT D, **VECHETTI IJ JR**, LAWRENCE M, VAN PELT K, PATEL P, MILLER B, BUTTERFIELD T, AND DUPONT-VERSTEEG DEN E. Serum extracellular vesicle miR-203a-3p content is associated with skeletal muscle mass and protein turnover during disuse atrophy and regrowth. *American Journal of Physiology Cell Physiology*. 2020 Aug 1;319(2):C419-C431. doi: 10.1152/ajpcell.00223.2020.

14. MURACH KA, **VECHETTI IJ JR**, VAN PELT DW, CROW SE, DUNGAN CM, FIGUEIREDO VC, KOSMAC K, FU X, RICHARDS CI, FRY CS, MCCARTHY JJ, PETERSON CA. Fusion-Independent Satellite Cell Communication to Muscle Fibers During Load-Induced Hypertrophy. *Functions*. 2020;1(1): zqaa009. doi: 10.1093/function/zqaa009
15. FERNANDEZ GF, FERREIRA JH, **VECHETTI IJ JR**, MORAES LN, CURY SS, FREIRE PP, GUTIÉRREZ J, FERRETTI R, DAL-PAI-SILVA M, ROGATTO SR AND CARVALHO RF. MicroRNA-mRNA co-sequencing identifies transcriptional and posttranscriptional regulatory networks underlying muscle wasting in cancer cachexia. *Frontiers in Genetics*. 2020 May 29;11:541. doi: 10.3389/fgene.2020.00541.
16. ENGLUND D, MURACH KA, DUNGAN CM, FIGUEIREDO VC, **VECHETTI IJ JR**, DUPONT-VERSTEEG DEN E, MCCARTHY JJ, PETERSON CA. Depletion of resident muscle stem cells negatively impacts running volume, physical function and muscle hypertrophy in response to lifelong physical activity. *Am J Physiol Cell Physiol*. 2020 Apr 22. doi: 10.1152/ajpcell.00090.2020
17. FIGUEIREDO VC, ENGLUND DA, **VECHETTI IJ JR**, ALIMOV A, PETERSON CA, MCCARTHY JJ. Phosphorylation of eIF4E is dispensable for skeletal muscle hypertrophy. *Am J Physiol Cell Physiol*. 2019 Oct 9. doi: 10.1152/ajpcell.00380.2019
18. HOFFMAN JF, **VECHETTI IJ JR**, ALIMOV AP, KALINICH JF, MCCARTHY JJ, PETERSON CA. Hydrophobic sand is a viable method of urine collection from the rat for extracellular vesicle biomarker analysis. *Mol Genet Metab Rep*. 2019. doi: 10.1016/j.ymgmr.2019.100505
19. PARRY HA, MOBLEY CB, MUMFORD PW, ROMERO MA, HAUN CT, ZHANG Y, ROBERSON PA, ZEMPLIENI J, FERRANDO AA, **VECHETTI IJ JR**, MCCARTHY JJ, YOUNG KC, ROBERTS MD, KAVAZIS AN. Bovine Milk Extracellular Vesicles (EVs) Modification Elicits Skeletal Muscle Growth in Rats. *Front Physiol*. 2019. doi: 10.3389/fphys.2019.00436
20. **VECHETTI IJ JR**, WEN Y, CHAILLOU T, MURACH KA, ALIMOV AP, FIGUEIREDO VC, DAL-PAI-SILVA M, MCCARTHY JJ. Life-long reduction in myomiR expression does not adversely affect skeletal muscle morphology. *Scientific Reports*. 2019. doi.org/10.1038/s41598-019-41476-8
21. DUNGAN CM, MURACH KA, FRICK KK, JONES SR, CROW SE, ENGLUND DA, **VECHETTI IJ JR**, FIGUEIREDO VC, LEVITAN BM, SATIN J, MCCARTHY JJ, PETERSON CA. Elevated Myonuclear Density During Skeletal Muscle Hypertrophy In Response to Training Is Reversed During Detraining. *Am J Physiol Cell Physiol*. 2019. doi: 10.1152/ajpcell.00050.2019
22. IWATA M; ENGLUND D; WEN Y; DUNGAN C; MURACH K; **VECHETTI IJ JR**; BROOKS CM; PETERSON CA; MCCARTHY JJ. A novel tetracycline-responsive transgenic mouse strain for skeletal muscle-specific gene expression. *Skeletal Muscle*. 2018 Oct 27;8(1):33. doi: 10.1186/s13395-018-0181-y
23. OMOTO ACM, MORAES LN, GARCIA GJF, **VECHETTI IJ JR**, ROSCANI MG, CARVALHO RF AND GOBBI JIF. Paroxetine Alters Cardiac Stress Markers in Rats with Aortic Regurgitation. *European Journal of Experimental Biology*. 2018 Vol. 8 No. 3:19. doi:10.21767/2248-9215.100060.
24. FERREIRA JH, CURY SS, **VECHETTI IJ JR**, FERNANDEZ GJ, MORAES LN, ALVES CAB, FREIRE PP, FREITAS CEA, DAL-PAI-SILVA M, CARVALHO RF. Low-level laser irradiation induces a transcriptional myotube-like profile in C2C12 myoblasts. *Lasers Med Sci*. 2018 May 2. doi: 10.1007/s10103-018-2513-x

25. WEN Y1, MURACH KA, **VECHETTI IJ JR**, FRY CS, VICKERY CD, PETERSON CA, MCCARTHY JJ, CAMPBELL KS. MyoVision: Software for Automated High-Content Analysis of Skeletal Muscle Immunohistochemistry. *Journal of Applied Physiology* (1985). 2018 Jan 1;124(1):40-51. doi: 10.1152/jappphysiol.00762.2017
26. MORAES LN, FERNANDEZ GJ, **VECHETTI IJ JR**, FREIRE PP, SOUZA RWA, VILLACIS RAR, ROGATTO SR, REIS PP, DAL-PAI-SILVA M, CARVALHO RF. Integration of miRNA and mRNA expression profiles reveals microRNA-regulated networks during muscle wasting in cardiac cachexia. *Scientific Reports*. 2017 Aug 1;7(1):6998. doi: 10.1038/s41598-017-07236-2
27. AGUIAR AF, **VECHETTI IJ JR**, SOUZA RW, PIEDADE WP, PACAGNELLI FL, LEOPOLDO AS, CASONATTO J, DAL-PAI-SILVA M. Nitric Oxide Synthase Inhibition Impairs Muscle Regrowth Following Immobilization. *Nitric Oxide*, 2017. doi: 10.1016/j.niox.2017.07.006.
28. **VECHETTI IJ JR**, BERTAGLIA RS, FERNANDEZ GJ, DE PAULA TG, SOUZA RWA, MORAES LN, MARECO EA, FREITAS CEA, AGUIAR AF, CARVALHO RF, DAL-PAI-SILVA M. Aerobic Exercise Recovers Disuse-induced Atrophy Through the Stimulus of the LRP130/PGC-1 $\alpha$  Complex in Aged Rats. *J Gerontol A Biol Sci Med Sci*. 2016 May;71(5):601-9. doi: 10.1093/gerona/glv064
29. FREITAS CEA, BERTAGLIA RS, **VECHETTI IJ JR**, MARECO EA, SALOMÃO RAS, PAULA TG, NAI GA, CARVALHO RF, PACAGNELLI FL AND DAL-PAI M. High Final Energy Dose of Low - Level Gallium Arsenide Laser Therapy Enhances Skeletal Muscle Recovery Without a Positive Effect on Collagen Remodeling. *Photochemistry and Photobiology*. 2015;91(4):957-65. doi: 10.1111/php.12446.
30. BONAMIN F, MORAES TM, DOS SANTOS RC, KUSHIMA H, FARIA FM, SILVA MA, **VECHETTI IJ JR**, NOGUEIRA L, BAUAB TM, SOUZA-BRITO ARM, DA ROCHA LRM, HIRUMA-LIMA CA. The effect of a minor constituent of essential oil from *Citrus aurantium*: The role of  $\beta$ -myrcene in preventing peptic ulcer disease. *Chemico-Biological Interactions* (Print). 2014 Apr 5;212:11-9. doi: 10.1016/j.cbi.2014.01.009
31. SOUZA RWA, AGUIAR AF, **VECHETTI IJ JR**, PIEDADE WP, ROCHA-CAMPOS GE, DAL-PAI-SILVA M. Resistance training with excessive training load and insufficient recovery alters skeletal muscle mass-related protein expression. *Journal of Strength and Conditioning Research*. 2014 Aug;28(8):2338-45. doi: 10.1519/JSC.0000000000000421.
32. SOUZA RWA, PIEDADE WP, SOARES LC, SOUZA PAT, AGUIAR AF, **VECHETTI IJ JR**, CAMPOS DHS, FERNANDES AAH, OKOSHI K, CARVALHO RF, CICOONA AC, DAL-PAI-SILVA M. Aerobic Exercise Training Prevents Heart Failure-Induced Skeletal Muscle Atrophy by Anti-Catabolic, but Not Anabolic Actions. *Plos One*. 2014 Oct 17;9(10):e110020. doi: 10.1371/journal.pone.0110020.
33. GUTIERREZ DE PAULA T, ALMEIDA FLA, CARANI FR, **VECHETTI IJ JR**, PADOVANI CR, SALOMÃO RAS, MARECO EA, DOS SANTOS VB, DAL-PAI-SILVA M. Rearing temperature induces changes in muscle growth and gene expression in juvenile pacu (*Piaractus mesopotamicus*). *Comparative Biochemistry and Physiology. Part B: Biochemistry & Molecular Biology* (Print). 2014 Mar;169:31-7. doi: 10.1016/j.cbpb.2013.12.004.
34. **VECHETTI IJ JR**, AGUIAR A, DE SOUZA RWA, ALMEIDA FL, DE ALMEIDA DIAS H, DE AGUIAR SILVA M, CARANI F, FERRARESSO RL, CARVALHO RF, DAL-PAI-SILVA M. NFAT Isoforms Regulate Muscle Fiber Type Transition without Altering CaN during Aerobic Training. *International Journal of Sports Medicine*. 2013 Oct;34(10):861-7. doi: 10.1055/s-0032-1331758.

35. AGUIAR AF, **VECHETTI IJ JR**, SOUZA RWA, CASTAN EP, AGUIAR RCM, PADOVANI CR, CARVALHO RF, DAL-PAI-SILVA M. Myogenin, MyoD and IGF-I Regulate Muscle Mass but not Fiber-type Conversion during Resistance Training in Rats. *International Journal of Sports Medicine*. 2013 Apr;34(4):293-301. doi: 10.1055/s-0032-1321895.
36. AGUIAR e SILVA MA, **VECHETTI IJ JR**, NASCIMENTO AF, FURTADO KS, AZEVEDO L, RIBEIRO DA, BARBISAN LF. Effects of swim training on liver carcinogenesis in male Wistar rats fed a low-fat or high-fat diet. *Applied Physiology, Nutrition and Metabolism (Print)*, 2012 Dec;37(6):1101-9. doi: 10.1139/h2012-129.
37. AGUIAR AF, SOUZA RWA, AGUIAR DH, MILANEZI RC, **VECHETTI IJ JR**, DAL-PAI-SILVA M. Creatine does not promote hypertrophy in skeletal muscle in supplemented compared with non-supplemented rats subjected to a similar workload. *Nutrition Research* 2011 Aug;31(8):652-7. doi: 10.1016/j.nutres.2011.08.006.

\* Denotes equal contribution.

#### Peer-reviewed review articles in PubMed-indexed journals (*listed from newest to oldest*)

1. Mobley CB, **VECHETTI IJ JR**, Valentino TR, McCarthy JJ. CORP: The use of transgenic mice for studying skeletal muscle physiology. *J Appl Physiol* (1985). 2020 May 1;128(5):1227-1239. doi: 10.1152/jappphysiol.00021.2020
2. **VECHETTI IJ JR**, Valentino TR, Mobley CB, McCarthy JJ. The role of extracellular vesicles in skeletal muscle and systematic adaptation to exercise. *J Physiol*. 2020 Jan 15. doi: 10.1113/JP278929
3. **VECHETTI IJ JR**. Emerging role of extracellular vesicles in the regulation of skeletal muscle adaptation. *J Appl Physiol* (1985). 2019. doi: 10.1152/jappphysiol.00914.2018
4. CLOTILDE THÉRY, KENNETH W WITWER, ELENA AIKAWA, MARIA JOSE ALCARAZ,JOHNATHON D ANDERSON, RAMAROSON ANDRIANTSITOHAINA, ANNA ANTONIOU, TANINA ARAB, FABIENNEARCHER, GEORGIA K ATKIN-SMITH, D CRAIG AYRE, JEAN-MARIE BACH, DANIEL BACHURSKI, HOSSEINBAHARVAND, LEONORA BALAJ, SHAWN BALDACCHINO, NATALIE N BAUER, AMY A BAXTER, MARY BEBAWY,CARLA BECKHAM, APOLONIJA BEDINA ZAVEC, ABDERRAHIM BENMOUSSA, ANNA C BERARDI, PAOLOBERGESE, EWA BIELSKA, CHERIE BLENKIRON, SYLWIA BOBIS-WOZOWICZ, ERIC BOILARD, WILFRID BOIREAU,ANTONELLA BONGIOVANNI, FRANCESC E BORRÀS, STEFFI BOSCH, CHANTAL M BOULANGER, XANDRA BREAKFIELD,ANDREW M BREGGIO, MEADHBH Á BRENNAN, DAVID R BRIGSTOCK, ALAIN BRISSON, MARIKE LD BROEKMAN,JACQUELINE F BROMBERG, PAULINA BRYL-GÓRECKA, SHILPA BUCH, AMY H BUCK, DYLAN BURGER, SARABUSATTO, DOMINIK BUSCHMANN, BENEDETTA BUSSOLATI, EDIT I BUZÁS, JAMES BRYAN BYRD, GIOVANNICAMUSSI, DAVID RF CARTER, SARAH CARUSO, LAWRENCE W CHAMLEY, YU-TING CHANG, AMRITA DATTACHAUDHURI, CHIHCHEN CHEN, SHUAI CHEN, LESLEY CHENG, ANDREW R CHIN, ALED CLAYTON, STEFANOP CLERICI, ALEX COCKS, EMANUELE COCUCCI, ROBERT J COFFEY, ANABELA CORDEIRO-DA-SILVA, YVONNECOUCH, FRANK AW COUMANS, BETH COYLE, ROSSELLA CRESCITELLI, MIRIA FERREIRA CRIADO, CRISLYND'SOUZA-SCHOREY, SAUMYA DAS, PAOLA DE CANDIA, ELIEZER F DE SANTANA JUNIOR, OLIVIER DEWEVER, HERNANDO A DEL PORTILLO,

TANGUY DEMARET, SARAH DEVILLE, ANDREW DEVITT, BERT DHONDT, DOLORES DI VIZIO, LOTHAR C DIETERICH, VINCENZA DOLO, ANA PAULA DOMINGUEZ RUBIO, MASSIMODOMINICI, MAURICIO R DOURADO, TOM AP DRIEDONKS, FILIPE V DUARTE, HEATHER M DUNCAN, RAMONM EICHENBERGER, KARIN EKSTRÖM, SAMIR EL ANDALOUSSI, CELINE ELIE-CAILLE, UTA ERDBRÜGGER, JUANM FALCÓN-PÉREZ, FARAH FATIMA, JASON E FISH, MIGUEL FLORES-BELLVER, ANDRÁS FÖRSÖNITS, ANNIEFRELET-BARRAND, FABIA FRICKE, GREGOR FUHRMANN, SUSANNE GABRIELSSON, ANA GÁMEZ-VALERO, CHRISGARDINER, KATHRIN GÄRTNER, RAPHAEL GAUDIN, YONG SONG GHO, BERND GIEBEL, CAROLINE GILBERT, MARIO GIMONA, ILARIA GIUSTI, DEBORAH CI GOBERDHAN, ANDRÉ GÖRGENS, SHARON M GORSKI, DAVIDW GREENING, JULIA CHRISTINA GROSS, ALICE GUALERZI, GOPAL N GUPTA, DAKOTA GUSTAFSON, AASEHANDBERG, REKA A HARASZTI, PAUL HARRISON, HARGITA HEGYESI, AN HENDRIX, ANDREW F HILL, FREDH HOCHBERG, KARL F HOFFMANN, BETH HOLDER, HARRY HOLTHOFER, BAHARAK HOSSEINKHANI, GUOKUHU, YIYAO HUANG, VERONICA HUBER, STUART HUNT, AHMED GAMAL-ELDIN IBRAHIM, TSUNEYA IKEZU, JAMEEL M INAL, MUSTAFA ISIN, ALENA IVANOVA, HANNAH K JACKSON, SOREN JACOBSEN, STEVEN MJAY, MUTHUVEL JAYACHANDRAN, GUIDO JENSTER, LANZHOU JIANG, SUZANNE M JOHNSON, JENNIFER CJONES, AMBROSE JONG, TIJANA JOVANOVIC-TALISMAN, STEPHANIE JUNG, RAGHU KALLURI, SHIN-ICHIKANO, SUKHBIR KAUR, YUMI KAWAMURA, EVAN T KELLER, DELARAM KHAMARI, ELENA KHOMYAKOVA, ANASTASIA KHVOROVA, PETER KIERULF, KWANG PYO KIM, THOMAS KISLINGER, MIKAEL KLINGEBORN, DAVIDJ KLINKE II, MIROSLAW KORNEK, MAJA M KOSANOVIĆ, ÁRPÁD FERENC KOVÁCS, EVA-MARIA KRÄMER-ALBERS, SUSANNE KRASEMANN, MIRJA KRAUSE, IGOR V KUROCHKIN, GINA D KUSUMA, SÖREN KUYPERS, SAARA LAITINEN, SCOTT M LANGEVIN, LUCIA R LANGUINO, JOANNE LANNIGAN, CECILIA LÄSSER, LOUISEC LAURENT, GREGORY LAVIEU, ELISA LÁZARO-IBÁÑEZ, SOAZIG LE LAY, MYUNG-SHIN LEE, YI XIN FIONALEE, DEBORA S LEMOS, METKA LENASSI, ALEKSANDRA LESZCZYNSKA, ISAAC TS LI, KE LIAO, STEN FLIBREGTS, ERZSEBET LIGETI, REBECCA LIM, SAI KIANG LIM, AIJA LINĒ, KAREN LINNEMANNSTÖNS, ALICIALLORENTE, CATHERINE A LOMBARD, MAGDALENA J LORENOWICZ, ÁKOS M LÖRINCZ, JAN LÖTVALL, JASONLOVETT, MICHELLE C LOWRY, XAVIER LOYER, QUAN LU, BARBARA LUKOMSKA, TARAL R LUNAVAT, SYBREN LN MAAS, HARMEET MALHI, ANTONIO MARCILLA, JACOPO MARIANI, JAVIER MARISCAL, ELENA S MARTENS-UZUNOVA, LORENA MARTIN-JAULAR, M CARMEN MARTINEZ, VILMA REGINA MARTINS, MATHILDE MATHIEU, SURESH MATHIVANAN, MARCO MAUGERI, LYNDA K MCGINNIS, MARK J MCVEY, DAVID G MECKES JR, KATIEL MEEHAN, INGE MERTENS, VALENTINA R MINCIACCHI, ANDREAS MÖLLER, MALENE MØLLER JØRGENSEN, AIZEA MORALES-KASTRESANA, JESS MORHAYIM, FRANÇOIS MULLIER, MAURIZIO MURACA, LUCA MUSANTE, VERONIKA MUSSACK, DILLON C MUTH, KATHRYN H MYBURGH, TANBIR NAJRANA, MUHAMMAD NAWAZ, IRINANAZARENKO, PETER NEJSUM, CHRISTIAN NERI, TOMMASO NERI, RIENK NIEUWLAND, LEONARDO NIMRICHTER, JOHN P NOLAN, ESTHER NM NOLTE-'T HOEN, NICOLE NOREN HOOTEN, LORRAINE O'DRISCOLL, TINA O'GRADY, ANA O'LOGHLEN, TAKAHIRO OCHIYA, MARTIN OLIVIER, ALBERTO ORTIZ, LUIS A ORTIZ, XABIER OSTEIKOETXEA, OLE OSTEGAARD, MATIAS OSTROWSKI, JAESUNG PARK, D. MICHIEL PEGTEL, HECTOR PEINADO, FRANCESCAPERUT, MICHAEL W PFAFFL, DONALD G PHINNEY, BARTIJN CH PIETERS, RYAN C PINK, DAVID S PISETSKY, ELKE POGGE VON STRANDMANN, IVA POLAKOVICOVA, IVAN KH POON, BONITA H POWELL, ILARIA PRADA, LYNNPULLIAM, PETER QUESENBERRY, ANNALISA RADEGHIERI, ROBERT L

RAFFAI, STEFANIA RAIMONDO, JANUSZRAC, MARCEL I RAMIREZ, GRAÇA RAPOSO, MORSI S RAYYAN, NETA REGEV-RUDZKI, FRANZ L RICKLEFS, PAUL D ROBBINS, DAVID D ROBERTS, SILVIA C RODRIGUES, EVA ROHDE, SOPHIE ROME, KASPER MAROUSCHOP, AURELIA RUGHETTI, ASHLEY E RUSSELL, PAULA SAÁ, SUSMITA SAHOO, EDISON SALAS-HUENULEO, CATHERINE SÁNCHEZ, JULIE A SAUGSTAD, MEIKE J SAUL, RAYMOND M SCHIFFELERS, RAPHAEL SCHNEIDER, TINE HIORTH SCHØYEN, AARON SCOTT, ERIOMINA SHAHAJ, SHIVANI SHARMA, OLGA SHATNYEVA, FAEZEHSHEKARI, GANESH VILAS SHELKE, ASHOK K SHETTY, KIYOTAKA SHIBA, PIA R-M SILJANDER, ANDREIA MSILVA, AGATA SKOWRONEK, ORMAN L SNYDER II, RODRIGO PEDRO SOARES, BARBARA W SÓDAR, CAROLINASOEKMADJI, JAVIER SOTILLO, PHILIP D STAHL, WILLEM STOORVOGEL, SHANNON L STOTT, ERWIN F STRASSER, SIMON SWIFT, HIDETOSHI TAHARA, MUNEESEH TEWARI, KATE TIMMS, SWASTI TIWARI, ROCHELLE TIXEIRA, MERCEDES TKACH, WEI SEONG TOH, RICHARD TOMASINI, ANA CLAUDIA TORRECILHAS, JUAN PABLO TOSAR, VASILIS TOXAVIDIS, LORENA URBANELLI, PIETER VADER, BAS WM VAN BALKOM, SUSANNE G VAN DER GREIN AN VAN DEUN, MARTIJN JC VAN HERWIJNEN, KENDALL VAN KEUREN-JENSEN, GUILLAUME VAN NIEL, MARTINE VAN ROYEN, ANDRE J VAN WIJNEN, M HELENA VASCONCELOS, **IVAN J VECHETTI JR**, TIAGO D VEIT, LAURAJ VELLA, ÉMILIE VELOT, FREDERIK J VERWEIJ, BEATE VESTAD, JOSE L VIÑAS, TAMÁS VISNOVITZ, KRISZTINAV VUKMAN, JESSICA WAHLGREN, DIONYSIOS C WATSON, MARCA HM WAUBEN, ALISSA WEAVER, JASON PWEBBER, VIKTORIA WEBER, ANN M WEHMAN, DANIEL J WEISS, JOSHUA A WELSH, SEBASTIAN WENDT, ASAM WHEELOCK, ZOLTÁN WIENER, LEONIE WITTE, JOY WOLFRAM, ANGELIKI XAGORARI, PATRICIA XANDER, JINGXU, XIAOMEI YAN, MARÍA YÁÑEZ-MÓ, HANG YIN, YUANA YUANA, VALENTINA ZAPPULLI, JANA ZARUBOVA, VYTAUTAS ŽĖKAS, JIAN-YE ZHANG, ZEZHOU ZHAO, LEI ZHENG, ALEXANDER R ZHEUTLIN, ANTJE M ZICKLER, PASCALE ZIMMERMANN, ANGELA M ZIVKOVIC, DAVIDE ZOCCO & EWA K ZUBA-SURMA. Minimal information for studies of extracellular vesicles 2018 (MISEV2018): a position statement of the International Society for Extracellular Vesicles and update of the MISEV2014 guidelines. *Journal of Extracellular Vesicles* (2019), 8:1, 1535750, DOI: 10.1080/20013078.2018.1535750

## Articles under review

1. Wen Y, **Vechetti IJ Jr**, Alimov AP, Valentino T, Hoffman JF, Vergara VB, Kalinich JF, Zhang XD, McCarthy JJ, and Peterson CA. Machine learning identifies predictive biomarkers of renal tubular damage induced by embedded metal exposure preceding renal functional deficit. Submitted to **Journal of American Society of Nephrology** in November 2021.
2. Wackerhage H, **Vechetti IJ**, Baumert P, Gehlert S, Becker L, Jaspers RT, Angelis MH. Does a hypertrophying muscle fibre reprogram its metabolism similar to a cancer cell? Submitted to **Sports Medicine** in December 2021.
3. Nilsson A, Nerhall AM, **Vechetti IJ**, Fornander L, Wiklund S, Alkner B, Schilcher J, Walden FV. A prophylactic dose of Tinzaparin does not influence qPCR-based assessment of circulating levels of miRNA in humans. Submitted to **Plos One** in December 2021
4. Engel LE, Souza FLA, Giometti IC, Okoshi K, Mariano TB, Ferreira NZ, Pinheiro DG, Floriano RS, Aguiar AF, Cicogna AC, **Vechetti IJ**, Pacagnelli FL. The high-intensity interval training mitigates the cardiac remodeling in spontaneously hypertensive rats. Submitted to **Life Sciences** in December 2021



**Invited Lectures and Meeting presentations**

1. **Exosomal myomiR regulation of adipocyte metabolism – 2017**  
American Society of Exosomes and Microvesicles, Pacific Grove, CA
2. **Exosomal myomiR regulation of adipocyte metabolism – 2018**  
APS Intersociety Meeting: The Integrative Biology of Exercise, San Diego, CA
3. **Emerging role of extracellular vesicles in the regulation of skeletal muscle adaptation – 2020**  
Discipline: Signaling pathways that control skeletal muscle phenotype – UNESP, Brazil

**Abstract Presentations at National/International Conferences**

- 2019 Van Pelt, DW, **Vechetti IJ Jr**, Confides AL, Hunt ER, Butterfield TA, Dupont-Versteegden EE. Reduced Extracellular Vesicle Biogenesis Contributes to Disuse-Induced Skeletal Muscle Atrophy. 2019 Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL.
- 2019 Englund DA, Murach KA, Dungan CM, Figueiredo VC, **Vechetti IJ Jr**, Dupont-Versteegden EE, McCarthy JJ, Peterson CA. Depletion of resident muscle stem cells inhibits muscle fiber hypertrophy induced by lifelong physical activity. 2019 Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL.
- 2018 Englund DA, Murach KA, Dungan CM, Figueiredo VC, **Vechetti IJ Jr**, Dupont-Versteegden EE, McCarthy JJ, Peterson CA. Satellite Cells Mediate Muscle Fiber Size in Response to Lifelong Exercise. 2018 APS Intersociety Meeting: The Integrative Biology of Exercise, San Diego, CA.
- 2017 **Vechetti IJ Jr**, Wen Y, Peterson CA, McCarthy JJ. Exosomal myomiR regulation of adipocyte metabolism. American Society for Exosomes and Microvesicles, Pacific Grove, CA.
- 2016 **Vechetti IJ Jr**, Wen Y, Murach K, Peterson L, Ming G, Dal-Pai-Silva M, McCarthy JJ. Life-long reduction in myomiR expression does not adversely affect skeletal muscle morphology. 2016 APS Intersociety Meeting: The Integrative Biology of Exercise, Phoenix, AZ.
- 2014 OMOTO, A. C. M.; **Vechetti IJ Jr**; MORAES, L. N.; ROSCANI, M. G.; MATSUBARA, L. S.; MATSUBARA, B. B.; Carvalho, RF; GOBBI, J.I. Paroxetine and myosin isoforms in aortic regurgitation: Role for improvement in contractility. PanAmerican Congress of Physiological Sciences: Physiology without Borders, Foz do Iguacu.
- Vechetti IJ Jr**; BERTAGLIA RS; PAULA, T. G.; SILVA, M.D.P. Exercise training promote a decrease in catabolic changes but did not change anabolic factors in plantaris muscle of old rats after immobilization-induced atrophy. European Muscle Conference, Salzburg.
- BERTAGLIA RS; **Vechetti IJ Jr**; DIAS, H. B. A.; Carvalho, RF; SILVA, M.D.P. Differential response to Myogenic Regulatory Factors (MRFs) in fast and slow muscles of rats after atrophic stimulus following aerobic exercise. New directions in biology and disease of skeletal muscle, Illinois.
- 2013 MORAES, L. N. ; SOUZA, R.W.A. ; ROGATTO, S. R. ; VILLACIS, R. ; **Vechetti IJ Jr**; BERTAGLIA RS ; FREIRE, P. P. ; REIS, P. P. ; SILVA, M.D.P. ; Carvalho, RF. Integrated miRNA and mRNA expression profiling in skeletal muscle wasting in rats with cardiac cachexia. EMBO Workshop, Ascona.

2012 FELISBINO, S. L.; SAROBO, C.; LACORTE, L. M.; MARTINS, M.; RINALDI, J. C.; **Vechetti IJ Jr**; MOROZ, A.; SCARANO, W. R.; DELELLA, F. K. Chronic caffeine intake increases androgenic stimuli, epithelial cell proliferation and hyperplasia in rat ventral prostate. 10th International Congress on Cell Biology and 16th Meeting of the Brazilian Society for Cell Biology, Rio de Janeiro.

AGUIAR, A.F.; **Vechetti IJ Jr**; ALMEIDA, FLA; DAL-PAI-SILVA, MAELI . NFATc3 regulates muscle fiber-type transition independently from the activation of calcineurin (CaN) during long-term endurance training in rats. The integrative Biology of Exercise. Bethesda, Maryland.

BERTAGLIA, R. S.; **Vechetti IJ Jr**; Prado, P.H.; DIAS, H. B. A.; Carvalho, RF; DAL-PAI-SILVA, M. Aerobic training enhances the regenerative process after muscle atrophic stimulus. 10th International Congress on Cell Biology and 16th Meeting of the Brazilian Society of Cell Biology, Rio de Janeiro.

2011 SILVA, M.D.P.; **Vechetti IJ Jr**; AGUIAR, A.F.; DIAS, H. B. A.; ALMEIDA, FLA; CARANI, FR. Long-term endurance training modifies skeletal muscle phenotype and does not alter calcineurin (CaN) gene expression. EMBO Myogenesis Conference Series.

## FUNDING

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### Active

NIH  
(1P20GM104320) The role of muscle-derived extracellular vesicles in adipocyte Metabolism". PI: Ivan Vechetti (3 person months calendar). 8/17/2020 – 5/31/2023. \$683,088 (Direct Costs \$450,000). Aims:

1. Determine whether the lipid composition of skeletal muscle extracellular vesicles is altered in response to a hypertrophic stimulus.
2. Determine whether mEVs stimulate adipocyte lipolysis through PKC activation.
3. Determine whether extracellular vesicles in response to a hypertrophic stimulus can induce fat loss through an enhanced lipolysis in obese mice.

### Pending

NIH/NIAMS  
(GRANT13479458) The role of glucose-6-phosphate dehydrogenase in skeletal muscle growth. PI: Ivan Vechetti (3 person months calendar). 07/01/2022 – 06/30/2027. \$2,371.280 (Direct Costs \$1,699.315). Aims:

1. Determine the necessity of G6pd for skeletal muscle hypertrophy.
2. Mechanistically test if changes in G6pd expression are sufficient to induce muscle cell growth.
3. Evaluate the role of miR-1 in the activation of G6pd during skeletal muscle hypertrophy.

### Requested but not funded

NIH/NIDDK  
(1R01DK129584-01) The effects of obesity in the lipid composition of skeletal muscle-derived Extracellular Vesicles. PI: Ivan Vechetti (3 person months calendar). 09/01/2021 – 08/31/2025. \$1,457.774 (Direct Costs \$969,383). Aims:

1. Determine whether the lipid composition of plasma-derived and organ-derived EVs from lean and obese subjects are significantly different.
2. Determine whether obesity attenuates the efficiency of skmEVs to facilitate adipose tissue lipolysis.

- NIH/NIAMS  
(1R01DK130983-01) Analysis of extracellular vesicle-induced metabolic adaptations by CRISPR/Cas9-mediated gene editing. PI: Ivan Vechetti (3 person months calendar). 12/01/2021–11/30/2026. \$2,374,435 (Direct Costs \$1,591,620). Aims:
1. Determine whether the Integrin beta 5 is required to skmEV uptake in metabolic cells after a hypertrophic stimulus.
  2. Determine the trophism between skmEVs and metabolic organs after muscle hypertrophy.
  3. Determine whether the manipulation of TSG101 in skeletal muscle affects whole-body metabolism.

## **TEACHING EXPERIENCE**

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- 2009-2011 Human Anatomy  
School of Biomedicine, Integrated School of Bauru, Brazil
- 2021-Present Extracellular Vesicles  
University of Nebraska-Lincoln

## **STUDENT MENTORING & TRAINING**

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### **1. Role as Primary Advisor for Students**

#### Master's students

- Shengyi Fei (Department of Nutrition and Health Sciences, UNL) -Fall 2021

### **2. Member of graduate committees (*other than as Chair*)**

#### Master's students

- Peter Kish (Krolinska Institute, Sweden) M.S. -2020  
(Mentor: Janos Zempleni)
- Mariah McCashland (Department of Nutrition and Health Sciences, UNL) M.S. -2021  
(Mentor: Janos Zempleni)
- Tesha Kerr (Department of Nutrition and Health Sciences, UNL) M.S. -2020-2021  
(Mentor: Janos Zempleni)
- Leticia Estevam Engel (Unoeste, Brazil) -2021  
(Mentor: Francis Lopes Pacagnelli)

#### Ph.D. students

- Afsana Khanam (Department of Nutrition and Health Sciences, UNL) Ph.D. -2020  
(Mentor: Janos Zempleni)
- Xingzhi (Alan) Li (Department of Nutrition and Health Sciences, UNL) Ph.D. -2021  
(Mentor: Jiujiu Yu)

### **3. Research Training**

#### Graduate Students

- Leslie Golden Department of Physiology, UK (Doctoral) 2019-2020
- Jensen Gho Department of Kinesiology, UK (Masters) 2019-2020
- Taylor Valentino Department of Physiology, UK (Doctoral) 2018-2020

- Laura Peterson Department of Physiology, UK (Doctoral) 2016-2020
- Tassiana Paula Department of Morphology, UNESP, Brazil, (Masters and Doctoral) 2011-2015
- Bruno Duran Department of Morphology, UNESP, Brazil) (Masters) 2011-2015
- Ana C. Omoto Department of Morphology, UNESP, Brazil) (Masters) 2013-2015
- Warlen Piedade Department of Morphology, UNESP, Brazil) (Masters) 2011-2014
- Jessica Valente Department of Morphology, UNESP, Brazil) (Undergraduate and Masters) 2011-2015
- Franciele Mosele Department of Morphology, UNESP, Brazil) (Undergraduate and Masters) 2011-2015

#### Undergraduate

- Filipe Goulart Department of Nutrition and Health Sciences, UNL (2021-Present)
- Blake Rule Department of Nutrition and Health Sciences, UNL (2021-Present)
- Jennifer Wayland Department of Physiology, UK (2017-2018)

### **MEMBERSHIPS AND AWARDS**

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#### **1. Professional Organization Memberships**

2017-Present International Society for Extracellular Vesicles  
 2020-Present American Society for Exosomes and Microvesicles

#### **2. Professional and Academic Awards**

2021 Editor's choice at Journal of Physiology: **Dysbiosis of the gut microbiome impairs mouse skeletal muscle adaptation to exercise.**

2020 Cover image for the article: Independent Satellite Cell Communication to Muscle Fibers During Load-Induced Hypertrophy.

2020 Image of the week from the American Physiological Society for the article: Depletion of resident muscle stem cells negatively impacts running volume, physical function, and muscle fiber hypertrophy in response to lifelong physical activity.

2019 Image of the week from the American Physiological Society for the article: Elevated myonuclear density during skeletal muscle hypertrophy in response to training is reversed during detraining.

2019 Dean's Distinguished Lecture

2016 Visiting Scholar award

2013 Visiting Scholar award

2011 PhD's scholar award

2009 Master's scholar award

### **PROFESSIONAL SERVICE**

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#### **1. Manuscript Reviews**

Acta Physiologica (2) Journal of Physiology and Biochemistry (1)  
 Journal of Cellular Biochemistry (5)  
 The FASEB Journal (1)  
 Journal of the International Society of Sports Nutrition (5)

Plos One (2)  
Cells (10)  
International Journal of Molecular Science (4)  
Journal of Applied Physiology (3)  
American Journal of Physiology-Regulatory, Integrative and Comparative Physiology (1)  
Molecular Biology Reports (2)  
Journal of Clinical Medicine (1)  
Applied Sciences (1)  
Scientific Reports (4)  
Medicine & Science in Sports & Exercise (7)  
Experimental and Molecular Pathology (1)  
Frontiers in Physiology (2)  
Cell & Tissue Research (1)  
Free Radical Biology (1)  
The Journal of Physiology (2)

## 2. Reviewer for Funding Agencies

American Institute for Cancer Research (panel member August 2020)  
NPOD Seed grant (October 2021)

## 3. University

### Domestic

Search Committee for an Assistant Professor (with a focus on inflammation and metabolic syndrome)  
(Department of Nutrition and Health Sciences), 2021-2022

Chair's Advisory Council, 2021-2023

Judge at the Student/Postdoctoral Fellow Poster Award Competition by the Nebraska Center for the  
Prevention of Obesity Diseases through Dietary Molecules, 2021

Judge at the Student/Postdoctoral Fellow Poster Award Competition by the Nebraska Center for the  
Prevention of Obesity Diseases through Dietary Molecules, 2020

### International

Judge at the Student/Postdoctoral Fellow Poster Award Competition by University of Western São  
Paulo (Unoeste), 2021

## 4. Editorial Boards

Guest Editor “Interorgan crosstalk during exercise in health and disease: extracellular vesicles as new  
kids on the block” for Frontiers in Physiology, 2021

## **RELEVANT SKILLS**

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Fluent in English and Portuguese (native)