GWENAELLE BEGUE, Ph.D.

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Molecular biology researcher experienced in studying the effects of exercise, aging, and pharmacological agents on cells, rodent, and human muscle physiology. My current research focus is on the exercise-induced molecular adaptations and epigenetic changes of skeletal muscle in athletes, elderly, and clinical populations. My international teaching experience encompasses lab mentorship, academic teaching, and professional research presentations.

Exercise & Muscle Biology Research	Exercise Protocol Development	Project & Relationship Management
In Vitro, Ex & In Vivo Approaches	Data Analysis & Interpretation	Technical Writing & Presentation
Epigenetics & Biochemical Assays	Human Research Studies	Training & Academic Teaching

EDUCATION

- **Licensed Phlebotomist of California State (CPT I),** *Phlebotomy Training Specialist, USA* 2020
- **Doctor of Philosophy (PhD),** *Exercise Biology*, Montpellier University, France 2013
  Graduated "With Distinction"
- **Master of Science (MS)**, *Exercise Biology, Montpellier University, France* 2009
- **Bachelor of Science (BS)**, *Exercise Physiology, Montpellier University, France* 2007

CURRENT POSITION

Assistant Professor (Tenure-Track), *Exercise Biology*, California State University, Sacramento, USA 08/2018 - Present

- Instructing and assessing undergraduate and graduate course content in Exercise Physiology and Sport Nutrition
- Coordinating, supervising and managing research program as Director for Integrative Exercise Biology laboratory (IEBL) focused on understanding blood cells and skeletal muscle adaptations with exercise from the whole body to the gene.
- Committing to department and university services: department budget and exercise science committee, Institutional Review Board, university internal grant reviewer, faculty Marshall at commencement ceremony.

TEACHING EXPERIENCE

Assistant Professor (Non-Tenure-Track), *Exercise Physiology,* Ball State University, Muncie, IN, USA 2014- 2015
Lecturer (part-time), *Exercise Physiology,* Montpellier University, Montpellier, France 2012- 2013
Teaching Assistant, *Exercise Science,* Montpellier University, Montpellier, France 2009- 2012

RESEARCH EXPERIENCE

Director of Integrative Exercise Biology Laboratory (IEBL), *Kinesiology,* Sacramento State, USA 08/2018-present
Building a brand-new molecular biology research lab from scratch in the Kinesiology department since August 2018
Future and ongoing collaborative research projects:

– The effects of an exercise intervention on physical, mental and muscle health in Chronic Kidney Disease with diabetes. *Principal investigator (PI): Baback Roshanravan, MD; Co-PIs: Javier Lopez, MD; Tae Youn, RN UC Davis; Dr. Begue, CSU Sacramento*
– The Effects Of Menstrual Cycle Phase On Muscular Performance And Repair After Resistance Exercise-Induced Muscle Damage. *Principal investigator (PI); Dr. Begue & Dr. Casazza; Master Student: Summer Guerra; CSU Sacramento*
– The effects of exercise on individuals with Parkinson's disease (PD) and Parkinson-related disorders. *Principal investigator (PI): Dr. Brown; Co-PIs: Dr. Begue, Dr. Casazza, and Dr. Moore; CSU Sacramento*

Postdoctoral Research Associate, *Exercise Genomics*, Ball State University, USA 12/2013 – 07/2018
Muscle Fiber-Type Specific DNA Methylation Assessment in Humans
Doctor of Philosophy, *Exercise Biology*, Montpellier University, France 10/2009 – 04/2013
Protein Balance and Muscular Phenotype
Master of Science, *Exercise Biology, Montpellier University, France* 10/2007 – 07/2009
Role of Interleukin-6 (IL-6) & Satellite Cells in Skeletal Muscle Exercise-Induced Hypertrophy in Rats

GRANTS, AWARDS & FELLOWSHIPS

- Research and Creative Activity (RCA) grant, CSU Sacramento, July 2020-May 2021
  - *Exercise-Induced Brain-Boosting Molecule in Patients with Parkinson's Disease; Awardees: Dr. Begue and Dr. Brown*
  - *Effects of Menstrual Cycle Phase on Muscular Performance and Repair After Resistance Exercise-Induced Muscle Damage. Awardees: Dr. Casazza and Dr. Begue*
- Oral Presentation Award (1st place), Indiana Physiological Society Annual Conference, Upland (IN) 2018
- American Physiological Society travel award to attend the Integrated Biology of Exercise meeting in Phoenix (AZ) 2016
- Young Investigator Award for poster presentation at the French Kinesiology Society Annual Conference in Grenoble 2013
- Doctoral Research Fellowship at the Metabolism and Muscle Dynamic Laboratory (Montpellier, France) 2009-2012

PROFESSIONAL MEMBERSHIPS

- American College of Sports Medicine (ACSM) 2014 – Present
- American Physiological Society (APS) 2014 – Present

SELECTED PROFESSIONAL PRESENTATIONS & CONFERENCES

- Integrative Physiology of Exercise, ACSM Conference, San Diego (CA, USA), 2018
  G. Begue, U. Raue, B. Jemiolo, K. Minchev, T. Trappe, S. Trappe. **Epigenetic and transcriptomic signatures of human slow- and fast-twitch muscle fibers across the lifespan.** (Poster)
  G. Begue, B. Jemiolo, U. Raue, K. Minchev, H. Finch, T. Trappe, S. Trappe. **Muscle Fiber-Type Specific DNA Domain with Lifelong Exercise.** (Poster)
- International Biochemistry of Exercise Congress (IBEC), Stockholm (Sweden), 2012
  G.Begue, B. Vernus, M. Combette, R.Candau, G.Py. **Eccentric contractions induced proteolysis through autophagy lysosomal system in rat.** (Poster)
- First International Congress of Translational Research in Human Nutrition, Clermont-Ferrand (France), 2010
  G. Begue, O. Galbes, A. Douillard, B. Rossano, F. Favier, G.Py. **Role of interleukin 6 (IL-6) in strength training muscle adaptations.** (Poster)

SELECTED PUBLICATIONS

1. Rubenstein A , Smith G, Raue U, **Begue G**, Minchev K, Ruf-Zamojski F, Nair V, Zhou L, Zaslavsky E, Trappe T, Trappe S and Sealfon S. **Single-cell transcriptional profiles in human skeletal muscle**. Nature Scientific Reports. 2019
2. Gries K, Minchev K, Raue U, Grosicki G, **Begue G**, Finch WH, Graham B, Trappe T, and Trappe S. **Single Muscle Fiber Contractile Properties in Lifelong Aerobic Exercising Women**. J Appl Physiol (1985). 2019
3. **Begue G**, Raue U, Jemiolo B, Trappe SW. **DNA Methylation Assessment from Human Slow- and Fast-Twitch Skeletal Muscle Fibers**. J Appl Physiol (1985). 2017
4. Britto FA, **Begue G**, Rossano B, Docquier A, Vernus B, Sar C, Ferry A, Bonnieu A, Ollendorff V, Favier FB. **REDD1 deletion prevents dexamethasone-induced skeletal muscle atrophy.** Am J Physiol Endocrinol Metab. 2014
5. **Begue G**, Douillard A, Galbes O, Rossano B, Vernus B, Candau R, Py G. **Early activation of rat skeletal muscle IL-6/STAT1/STAT3 dependent gene expression in resistance exercise linked to hypertrophy**. PLoS One. 2013
6. Douillard A, Galbes O, **Begue G**, Rossano B, Levin J, Vernus B, Bonnieu A, Candau R, Py G **Calpastatin overexpression in the skeletal muscle of mice prevents clenbuterol-induced muscle hypertrophy and phenotypic shift.** Clin Exp Pharmacol Physiol. 2012