

Benjamin D. Cosgrove, Ph.D.

Associate Professor, Meinig School of Biomedical Engineering
Cornell University

159 Weill Hall, Ithaca, NY 14853-7202

t: 607-255-7271 | e: bdc68@cornell.edu | tw: @bdcosgrove | w: <http://cosgrovelab.bme.cornell.edu/>

EDUCATION

Doctor of Philosophy (Ph.D.) in Bioengineering 2003-09
Massachusetts Institute of Technology, Cambridge, MA
Thesis advisors: Douglas A. Lauffenburger, Ph.D. & Linda G. Griffith, Ph.D.
Bachelor of Biomedical Engineering (B.Bm.E.), *Summa cum laude* honors 1999-2003
University of Minnesota, Minneapolis, MN

PROFESSIONAL POSITIONS & AFFILIATIONS

Independent Faculty Member at Cornell University:

Associate Professor, Meinig School of Biomedical Engineering 2021-
Faculty Member, Genetics, Genomics and Development Graduate Field 2020-
Faculty Member, Biochemistry, Cell, and Molecular Biology Graduate Field 2015-
Faculty Member, Biomedical Engineering Graduate Field 2014-
Assistant Professor, Meinig School of Biomedical Engineering 2014-21

Pre-Cornell:

Postdoctoral Fellow, Baxter Laboratory for Stem Cell Biology 2009-14
Stanford University School of Medicine, Stanford, CA (Advisor: Helen M. Blau, Ph.D.)

HONORS, AWARDS & SCHOLARSHIPS (* = to trainee)

Swanson Teaching Excellence Award, Cornell College of Engineering 2019
Junior Faculty Travel Award, BMES Advanced Biomanufacturing Meeting 2018
*Best Poster Presentation, FASEB Conf. on Skeletal Muscle Satellite Cells 2018
Short Talk Award, FASEB Conf. on Skeletal Muscle Satellite Cells 2018
Young Innovator Award, *Cellular and Molecular Bioengineering* 2017
Rising Star Award, Biomedical Engineering Society, Cellular and Molecular
Bioengineering Special Interest Group 2015
Best Talk, Baxter Laboratory for Stem Cell Biology Retreat, Stanford University 2011
Stanford Molecular Imaging Scholar 2009-12
Graduate Research Award, Biomedical Engineering Society 2008
Benjamin Trump Award and Fellowship, Aspen Cancer Conference 2008
Whitaker Foundation Graduate Research Fellowship in Biomedical Engineering 2003-06
Biomedical Engineering Department Scholarship, University of Minnesota 2002
Dean's List, Institute of Technology, University of Minnesota 1999-2003
U2000 Scholarship, University of Minnesota 1999-2003
National Merit Scholarship 1999-2003
Richard C. Byrd Scholarship, State of Minnesota 1999-2003

PEER-REVIEWED JOURNAL ARTICLES

(key: **Cosgrove Lab authors**, BDC as corresponding author, * = equal contributions)

Independent Faculty Member at Cornell:

Pre-prints & Manuscripts under review:

29. Norris AM, Johnson CD, Zhou LY, Appu A, **McKellar DW**, **Cosgrove BD**, Kopinke D. "Hedgehog

signaling acts as cell fate determinant during adult tissue repair.” *bioRxiv* 2022.08.15.504012. [Link](#)

28. **Loiben AM***, **Kim KH***, **Soueid-Baumgarten SY***, **Aguilar VM***, **Chin Cheong J**, **Kopyto RF**, **Fraczek P**, **Fong EHH**, Mangal R, Archer LA, **Cosgrove BD**. (2020) “Long-term high-yield skeletal muscle stem cell expansion through staged perturbation of cytokine signaling in a soft hydrogel culture platform.” *bioRxiv* 2020.06.04.134056. [Link](#)

Published/Accepted:

27. **McKellar DW**, Mantri M, Hinchman M, Parker JSL, Sethupathy P, **Cosgrove BD***, De Vlaminck I.* (2022) “Spatial mapping of the total transcriptome by in situ polyadenylation.” *Nat Biotechnol*, in press. [Link](#) (Preprint: *bioRxiv* 2022.04.20.488964. [Link](#)).
- See news summary in [Nature Biotechnology](#)
 - See news report in [Cornell Chronicle](#)
26. **Lee U**, Stuelsatz P, Karaz S, **McKellar DW**, Russeil J, Deak M, De Vlaminck I, Lepper C, Deplankce B, **Cosgrove BD**, Feige JN. (2022) “A Tead1-Apelin axis directs paracrine communication from myogenic to endothelial cells in skeletal muscle.” *iScience*, 25(7): 104589. [Link](#).
25. **McKellar DW**, **Walter LD**, Song LT, Mantri M, Wang MFZ, De Vlaminck I*, **Cosgrove BD***. (2021) “Large-scale integration of single-cell transcriptomic data captures transitional progenitor cell states in mouse skeletal muscle regeneration.” *Communications Biology* 4: 1280. [Link](#) (Pre-print: *bioRxiv* 2020.12.01.407460 [Link](#)). scMuscle Data Viewer Website: [Link](#).
- See news report in [Cornell Chronicle](#)
24. Chovatiya G, Ghuwalewala S, **Walter LD**, **Cosgrove BD**, Tumber T. (2020) “High resolution single cell transcriptomics reveals heterogeneity of self-renewing hair follicle stem cells.” *Experimental Dermatology*, 30(4): 457-471. [Link](#).
23. Gheller BJ, Blum JE, Lim EW, Handzlik MK, **Fong EHH**, Ko AC, Khanna S, Gheller ME, Bender EL, Alexander MS, Stover PJ, Field MS, **Cosgrove BD**, Metallo CM, Thalacker-Mercer AE. (2020) “Extracellular serine and glycine are required for mouse and human skeletal muscle stem and progenitor cell function.” *Molecular Metabolism* 43: 101106. [Link](#) (Pre-print: *bioRxiv* 833798 [Link](#)).
22. **De Micheli AJ**, Swanson JB, Disser NP, Martinez LM, Walker NR, Olivier D, **Cosgrove BD**, Mendias CL. (2020) “A single-cell transcriptional atlas identifies extensive heterogeneity in the cellular composition of mouse Achilles tendons.” *American Journal of Physiology-Cell Physiology* 319(5): C885-C894 [Link](#) (Pre-print: *bioRxiv* 801266 [Link](#)).
21. Gheller BJ, Blum JE, **Fong EHH**, Malysheva O, **Cosgrove BD**, Thalacker-Mercer AE. (2020) “A defined N6-methyladenosine (m6A) profile conferred by METTL3 regulates muscle stem cell/myoblast state transitions.” *Cell Death Discovery* 6: 95. [Link](#).
20. Fu DJ, **De Micheli AJ**, Bidarimath M, Ellenson LH, **Cosgrove BD**, Flesken-Nikitin A, Nikitin A. (2020) “Cells expressing PAX8 are the main source of homeostatic regeneration of adult endometrial epithelium and give rise to serous endometrial carcinoma.” *Disease Models & Mechanisms* 13: dmm047035. [Link](#) (Pre-print: *bioRxiv* 853994 [Link](#)).
19. **De Micheli AJ**, Spector JA, Elemento O, **Cosgrove BD**. (2020) “A reference single-cell transcriptomic atlas of human skeletal muscle tissue reveals bifurcated muscle stem cell populations.” *Skeletal Muscle* 10: 19. [Link](#) (Pre-print: *bioRxiv* 2020.01.21.914713 [Link](#)).
18. **De Micheli AJ**, **Laurilliard EJ**, **Heinke CL**, Ravichandran H, **Fraczek P**, **Soueid-Baumgarten S**, De Vlaminck I, Elemento O, **Cosgrove BD**. (2020) “Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration.” *Cell Reports* 30(10): 3583-3596.E5. [Link](#) (Pre-print: *bioRxiv* 671032. [Link](#)).
- See news report in [Cornell Chronicle](#)

17. Gheller BJ, Blum J, **Soueid-Baumgarten S**, Bender E, **Cosgrove BD**, Thalacker-Mercer A. (2019) "Isolation, culture, characterization, and differentiation human muscle progenitor cells from the skeletal muscle biopsy procedure." *Journal of Visualized Experiments* 150: e59580. [Link](#)
16. Apoorva F, **Loiben AM**, Shah AB, Purwada A, Fontan L, Goldstein R, Kirby BJ, Melnick AM, **Cosgrove BD**, Singh A. (2018) "How biophysical forces regulate human B cell lymphomas." *Cell Reports* 23(2): 499-511. [Link](#)
 - See news report in [Cornell Chronicle](#)
15. **Loiben AM**, **Soueid-Baumgarten S**, **Kopyto RF**, **Bhattacharya D**, **Kim JC**, **Cosgrove BD**. (2017) "Data-modeling identifies conflicting signaling axes governing myoblast proliferation and differentiation responses to diverse ligand stimuli." *Cellular and Molecular Bioengineering* 10(5): 433-450. [Link](#)
 - 2017 *CMBE* Young Innovator Award Issue
14. Blau HM, **Cosgrove BD***, Ho AT*. (2015) "The central role of muscle stem cells in regenerative failure with aging." *Nature Medicine* 21(8): 854-862. [Link](#)

Pre-Cornell:

13. Sleep E*, **Cosgrove BD***, McClendon MT, Preslar AT, Chen CH, Sangji MH, Pérez CMR, Haynes RD, Meade TJ, Blau HM, Stupp SI. (2017) "Injectable biomimetic liquid crystalline scaffolds enhance muscle stem cell transplantation." *Proceedings of the National Academy of Science USA* 114(38): E7919-E7928. (*Equal contributions) [Link](#)
12. Porpiglia E, Samusik N, Ho ATV, **Cosgrove BD**, Mai T, Davis KL, Jager A, Nolan GP, Bendall SC, Fantl WJ, Blau HM. (2017) "High-resolution myogenic lineage mapping by single-cell mass cytometry." *Nature Cell Biology* 19(5): 558-567. [Link](#)
11. **Cosgrove BD**, Gilbert PM, Porpiglia E, Mourkioti F, Lee SP, Corbel SY, Llewellyn ME, Delp SL, Blau HM. (2014) "Rejuvenation of the muscle stem cell population restores strength to injured aged muscles." *Nature Medicine* 20(3): 255-264. [Link](#)
 - See news reports in [Nature Medicine News and Views](#), [Science Editor's Choice](#), [Nature Research Highlights](#), [Faculty of 1000 Recommendation](#), [Regenerative Medicine Research Highlights](#), [Inside Stanford Medicine](#), [Men's Journal](#)
10. Gardner MK, Sprague BL, Pearson CG, **Cosgrove BD**, Bicek AD, Bloom K, Salmon ED, Odde DJ. (2010) "Model convolution: a computational approach to digital image interpretation." *Cellular and Molecular Bioengineering* 3(2): 163-170. [Link](#)
9. Alexopoulos LG, Saez-Rodriguez J, **Cosgrove BD**, Lauffenburger DA, Sorger PK. (2010) "Networks inferred from biochemical data reveal profound differences in toll-like receptor and inflammatory signaling between normal and transformed hepatocytes." *Molecular & Cellular Proteomics* 9(9): 1849-65. [Link](#)
8. **Cosgrove BD**, Alexopoulos LG, Hang T, Hendriks BS, Sorger PK, Griffith LG, Lauffenburger DA. (2010) "Cytokine-associated drug toxicity in human hepatocytes is associated with signaling network dysregulation." *Molecular BioSystems* 6(7): 1195-206. [Link](#)
7. **Cosgrove BD**, Sacco A, Gilbert PM, Blau HM. (2009) "A home away from home: challenges and opportunities in engineering in vitro muscle satellite cell niches." *Differentiation* 78(2-3): 185-94. [Link](#)
6. **Cosgrove BD**, Alexopoulos LG, Saez-Rodriguez J, Griffith LG, Lauffenburger DA. (2009) "A multipathway phosphoproteomic signaling network model of idiosyncratic drug- and inflammatory cytokine-induced toxicity in human hepatocytes." *Conference Proceedings of the IEEE Engineering in Medicine & Biology Society* 5452-5. [Link](#)

5. Lee JH, **Cosgrove BD**, Lauffenburger DA, Han J. (2009) "Microfluidic concentration-enhanced cellular kinase activity assay." *Journal of the American Chemical Society* 131(30): 10340-1. [Link](#)
4. Pritchard JR, **Cosgrove BD**, Hemann MT, Griffith LG, Wands JR, Lauffenburger DA. (2009) "Three-kinase inhibitor combination recreates multipathway effects of a geldanamycin analogue on hepatocellular carcinoma cell death." *Molecular Cancer Therapeutics* 8(8): 2183-92. [Link](#)
3. **Cosgrove BD**, King BM, Hasan MA, Alexopoulos LG, Farazi PA, Hendriks BS, Griffith LG, Sorger PK, Tidor B, Xu JJ, Lauffenburger DA. (2009) "Synergistic drug-cytokine induction of hepatocellular death as an in vitro approach for the study of inflammation-associated idiosyncratic drug hepatotoxicity." *Toxicology & Applied Pharmacology* 237(3)-317-30. [Link](#)
2. **Cosgrove BD**, Griffith LG, Lauffenburger DA. (2008) "Fusing tissue engineering and systems biology toward fulfilling their promise." *Cellular and Molecular Bioengineering* 1(1): 33-41. [Link](#)
1. **Cosgrove BD**, Cheng C, Pritchard JR, Stolz DB, Lauffenburger DA, Griffith LG. (2008) "An inducible autocrine cascade regulates rat hepatocyte proliferation and apoptosis responses to tumor necrosis factor-alpha." *Hepatology* 48(1): 276-288. [Link](#)

BOOK CHAPTERS

Independent Faculty Member at Cornell:

2. **Aguilar VM, Cosgrove BD**. (2017) "Microcontact-printed hydrogel microwell arrays for clonal muscle stem cell cultures." in Methods in Molecular Biology: Skeletal Muscle Development, ed: Ryall J. Humana Press. pp. 75-92. [Link](#)

Pre-Cornell:

1. **Cosgrove BD**, Blau HM. (2010). "Skeletal muscle stem cells." In Principles of Regenerative Medicine, 2nd edition, eds: Lanza RP, Atala A, Thomson JA, Nerem RM. Academic Press. pp. 347-363.

ACTIVITY RECORDS

Google Scholar: <https://scholar.google.com/citations?user=P57BYMYAAAAJ&hl=en>

Citations: 1844, H-index: 17, Average citations per item: 71

NCBI: <https://www.ncbi.nlm.nih.gov/myncbi/benjamin.cosgrove.1/bibliography/public/>

ORCID: <http://orcid.org/0000-0003-2164-350X>

ResearcherID: <http://www.researcherid.com/rid/A-9810-2016>

RESEARCH SUPPORT

Current (as Independent Faculty at Cornell):

CZI Pediatric Networks for the Human Cell Atlas "Pediatric Cell Atlas of Skeletal Muscle" Role: Co-Principal Investigator Funding to BDC: \$760,541 DC	10/01/21-09/30/24
Cornell Genomics Innovation Seed Grant "Genomic Technologies to Profile the Complete Transcriptome in Single Nuclei" Role: Co-Principal Investigator Funding to BDC: \$7,500 DC	06/15/21-06/14/22
NIH/NCI R01 Award (R01CA248524) "Endometrial epithelial stem cells and cancer" Role: Co-Investigator Funding to BDC: \$219,232 DC	06/01/21-05/31/26
NIH/NCI R01 Award (R01CA260115) "Cancer-prone cell states of the fallopian tubal epithelium" Role: Co-Investigator Funding to BDC: \$179,137 DC	05/01/21-04/30/26

NIH/NCI R01 Award (R01CA238745) 05/01/20-04/30/25
 “Biomaterials-based malignant immune tissues to study BCR and TLR signaling in lymphoma”
 Role: Co-Investigator | Funding to BDC: \$39,551 DC

NIH/NIA R01 Award (R01AG058630) 09/30/18-05/31/23
 “Revealing muscle stem cell heterogeneity in mice and humans through deep single-cell analysis”
 Role: Principal Investigator | Funding to BDC: \$2,061,068 DC

Completed (as Independent Faculty at Cornell):

NIH/NIBIB R21 Trailblazer Award (R21EB024747) 04/01/18-03/31/21
 “Three-dimensional mechano-microscopy of the stem cell niche”
 Role: Co-Investigator | Funding to BDC: \$199,844 DC

Glenn Medical Research Foundation and American Federation for Aging Research Grant for Junior Faculty 07/01/18-06/30/20
 “Single-cell dissociation of muscle stem cell dysfunction in human aging”
 Role: Principal Investigator | Funding to BDC: \$92,593 DC

NIH/NIAMS R21 Award (R21AR072265) 07/01/18-06/30/20
 “Combinatorial biomimetic systems to enable high-throughput evaluation and expansion of genome edited dystrophic muscle stem cells”
 Role: Principal Investigator | Funding to BDC: \$215,600 DC

Cornell University Start-up Funds 07/01/14-06/30/19
 Role: Principal Investigator

Cornell Center on the Physics of Cancer Metabolism Pilot Project Grant 08/01/17-07/31/18
 “Single-cell deep-profiling of signaling and genomic alterations mediating the evolution of chemotherapeutic resistance in breast cancer”
 Role: Co-Principal Investigator | Funding to BDC: \$50,000 DC

Cornell University Stem Cell Program Seed Grant 04/01/17-03/31/18
 “Mechano-signaling control of invasive breast cancer stem cell phenotypes in obesity-associated microenvironments”
 Role: Co-Principal Investigator | Funding to BDC: \$7,500 DC

NIH/NIA Administrative Supplement for Diversity (R00AG042491-S1) 04/15/16-04/30/17
 “Ex vivo rejuvenation and expansion of muscle stem cells from aged mice”
 Role: Principal Investigator | Funding to BDC: \$49,333 DC

NIH/NIA Pathway to Independence Award, Independent Phase (R00AG042491) 09/30/14-04/30/17
 “Ex vivo rejuvenation and expansion of muscle stem cells from aged mice”
 Role: Principal Investigator | Funding to BDC: \$499,452 DC

Cornell University Center for Vertebrate Genomics Seed Grant 11/26/14-11/25/15
 “Single-cell mitochondrial DNA heteroplasmy in human muscle stem cells”
 Role: Co-Investigator | Funding to BDC: \$2,000 DC

Pre-Cornell:

NIH/NIA Pathway to Independence Award, Mentored Phase (K99AG042491) 08/01/12-06/01/14
 “Ex vivo rejuvenation and expansion of muscle stem cells from aged mice”
 Role: PI/Postdoctoral Fellow | Funding to BDC: \$176,664 DC

Stanford Molecular Imaging Scholars Postdoctoral Fellowship 01/05/09-01/04/12
 Role: Postdoctoral Fellow

Whitaker Foundation Graduate Research Fellowship in Biomedical Engineering 09/01/03-08/31/06
 Role: Predoctoral Fellow

INVITED SEMINARS & LECTURES*Independent Faculty Member at Cornell:*

Ottawa Hospital Research Institute, University of Ottawa Seminar	2021
Leiden University Medical Center, Department of Human Genetics Seminar	2021
Ohio St. Univ./Nationwide Children's Hospital, Ctr. for Muscle Health & Neurom. Dis. Seminar	2020
Binghamton University, Department of Biomedical Engineering Seminar* [*postponed due to COVID-19]	2020
University of Michigan, Department of Biomedical Engineering Seminar	2020
Syracuse University, Department of Biomedical Engineering Seminar	2020
Pre-Tenure Bioengineering Faculty e-Seminar Series	2020
Muscle Science Talks Global Zoom Seminar	2020
Universitat Pompeu Fabra (UPF; Barcelona)	2019
University of Rochester, Department of Biomedical Engineering Seminar	2019
Pennsylvania State University, Department of Biomedical Engineering Seminar	2019
University at Buffalo, Department of Chemical and Biological Engineering Seminar	2018
Hospital for Special Surgery (New York City, NY), Orthopaedic Soft Tissue Research Meeting	2017
University of Illinois at Urbana-Champaign, Department of Bioengineering Seminar	2017
Biomedical Engineering Society (BMES) Annual Mtg., CMBE Young Investigator Session	2017
Harvard Medical School, Department of Genetics Seminar	2017
AIChE/Soc. for Biological Engineering (SBE) Intl. Conference on Stem Cell Engineering	2016
Northeast Biomedical Engineering Conference (NEBEC)	2015
Western New York Flow Cytometry User Group Meeting	2015
Rensselaer Ctr. for Stem Cell Research, Bioengineering and Stem Cell Research Symposium	2015
Neural Stem Cell Institute (Rensselaer, NY) Seminar Series	2014
NIH National Institute on Aging, Division of Aging Biology, New Investigators Forum	2014

Pre-Cornell:

University of California at San Francisco, Dept. of Bioengineering & Therapeutic Sciences	2013
University of California at Berkeley, Department of Bioengineering	2013
Princess Margaret Cancer Centre (Toronto), Ontario Cancer Institute	2013
Cornell University, Department of Biomedical Engineering Seminar	2013
University of Illinois at Chicago, Department of Bioengineering Seminar	2013
University of Illinois at Urbana-Champaign, Department of Chemical Engineering	2013
Washington University School of Medicine, Department of Orthopediac Surgery	2013
Northeastern University, Department of Chemical Engineering	2013
University of Minnesota, Department of Biomedical Engineering	2012
University of Wisconsin, Department of Biomedical Engineering	2012
University of Southern California, Department of Biomedical Engineering	2012
Keystone Symposium: Omics Meets Cell Biology (Invited Platform Talk)	2009

REFEREED CONFERENCE PROCEEDINGS & ABSTRACTS

(key: **Cosgrove Lab authors**, presenting author, * = equal contributions)

Independent Faculty Member at Cornell:

35. BMES Cellular and Molecular Bioengineering Conference (Talk) Laurilliard EJ, Cosgrove BD. "Dissecting endothelial cell-muscle stem cell communication in skeletal muscle regeneration through in vivo single-cell transcriptomics and in vitro models."	2022
34. CZI Single-Cell Biology Annual Meeting (Talk) Cosgrove BD.	2021

- “Large-scale single-cell data compendia for exploring skeletal muscle cell communication in mice and humans.”
33. Biomedical Engineering Society Annual Meeting (Talk) 2021
Heinke CL, Cosgrove BD.
“Engineered biomimetic niche reveals Notch ligand-specific muscle stem cell fate regulation.”
 32. Biomedical Engineering Society Annual Meeting (Talk) 2021
McKellar DW, De Vlaminck I, Cosgrove BD.
“Spatiotemporal muscle cell interaction mapping by large-scale single-cell transcriptomic integration.”
 31. Orthopaedic Research Society Annual Meeting (Invited Talk in Muscle Res. Int. Group) 2021
Cosgrove BD.
“Dissecting stem cell regulation in skeletal muscle regeneration and aging through single-cell transcriptomics.”
 30. International Scientific Conference on Cultured Meat (Invited Keynote Talk) 2020
Cosgrove BD.
“Leveraging single-cell transcriptomics to improve muscle stem cell manufacturing and therapies.”
 29. AIChE International Conference on Stem Cell Engineering (Invited Talk) 2019
Cosgrove BD.
“Engineering better skeletal muscle stem cell therapies.”
 28. Biomedical Engineering Society Annual Meeting (Talk) 2019
De Micheli AJ, De Vlaminck I, Elemento O, Cosgrove BD.
“Single-cell hierarchical analysis identifies heterotypic ligand-receptor communication.”
 27. Society for Muscle Biology: Frontiers in Myogenesis (Talk) 2019
De Micheli AJ, Cosgrove BD.
“Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration.”
 26. Biomedical Engineering Society Annual Meeting (Talk) 2018
De Micheli AJ, Soueid-Baumgarten S, Fraczek P, Cosgrove BD.
“Reconstructing a hierarchical cellular atlas of skeletal muscle regeneration through single-cell RNA-sequencing.”
 25. Biomedical Engineering Society Annual Meeting (Talk) 2018
Kim KH, Loiben AM, Soueid-Baumgarten S, Aguilar VM, Fraczek P, Cosgrove BD.
“Engineering microenvironments to achieve long-term, clinical-scale skeletal muscle stem cell expansion.”
 24. BMES Advanced Biomanufacturing Meeting (Talk) 2018
Kim KH, Loiben AM, Soueid-Baumgarten S, Aguilar VM, Fraczek P, Cosgrove BD.
“Engineering microenvironments to achieve long-term, clinical-scale skeletal muscle stem cell expansion.”
 23. FASEB Conference on Skeletal Muscle Satellite Cells and Regeneration (Talk, Poster) 2018
De Micheli AJ, Soueid-Baumgarten S, Nassab RA, De Vlaminck I, Cosgrove BD. “Unbiased reconstruction of a cellular atlas in muscle regeneration through single-cell RNA-sequencing.”
 22. Biomedical Engineering Society Annual Meeting (Talk) 2017
De Micheli AJ, Soueid-Baumgarten S, Munson BP, Cosgrove BD. “Interrogation of muscle stem cell-niche interactions using artificial 3D niche micro-gels and single-cell RNA-sequencing.”
 21. Biomedical Engineering Society Annual Meeting (Poster) 2017
Loiben AM, Soueid-Baumgarten S, Bhattacharya D, Kopyto RF, Kim JC, Cosgrove BD.

“Construction of a data-model to identify conflicting signaling axes governing myoblast cell-fate responses to diverse ligands.”

20. Orthopaedic Research Society Upstate NY Regional Symposium (Poster) 2017
Soueid-Baumgarten S, De Micheli AJ, Loiben AM, Aguilar VM, Cosgrove BD.
 “Bioengineering approaches to overcome skeletal muscle stem cell dysfunction in aging.”
19. Biomedical Engineering Society Annual Meeting (Talk) 2016
Soueid-Baumgarten S, Chen FM, Munson BP, Cosgrove BD. “Illumination of muscle stem cell functional diversity from hierarchically-organized single-cell RNA-sequencing.”

Pre-Cornell:

18. Society for Biomaterials Annual Meeting (Talk) 2017
 17. BMES Annual Meeting (Talk) 2016
 16. Gordon Research Conf. on Signal Transduction by Engineered Extracellular Matrices (Talk) 2016
 15. Empire State Stem Cell Board (NYSTEM) Annual Meeting (Poster) 2016
 14. BMES Cellular and Molecular Bioengineering Conference (Talk) 2016
 13. BMES Cellular and Molecular Bioengineering Conference (Talk, * *Rising Star Award*) 2015
 12. BMES Annual Meeting (Talk) 2013
 11. Cold Spring Harbor Meeting on Molecular Genetics of Aging (Talk) 2012
 10. BMES Annual Meeting (Talk) 2011
 9. Gordon Research Conference on Myogenesis (Talk) 2011
 8. International Society for Stem Cell Research Conference (Poster) 2011
 7. IEEE Engineering in Medicine and Biology Conference (Talk) 2009
 6. BMES Annual Meeting (Talk) 2008
 5. FASEB Conference on Liver Growth, Development and Disease (Poster) 2008
 4. Aspen Cancer Conference (Poster) 2008
 3. Engineering Cell Biology Conference (Poster) 2007
 2. Systems Biology of Mammalian Cells Conference (Talk) 2006
 1. National Conference on Undergraduate Research (Poster) 2003

INTERNAL SEMINARS & LECTURES

Independent Faculty Member at Cornell:

- Cornell Dept. of Molecular Biology and Genetics, Field of Genetics, Genomics & Dev. Seminar 2020
 Cornell Nutritional Science, Field Seminar 2018
 Cornell Stem Cell Program, Biannual Stem Cell Symposium (Keynote) 2017
 Cornell College of Engineering, Layman’s Research Seminar to Administration 2016
 Cornell Stem Cell Program, Biannual Stem Cell Retreat 2016
 Cornell Meinig School of BME, Vision Presentation to the Provost Kotlikoff 2016
 Cornell Keck Biomembrane Program Retreat 2015
 Cornell Stem Cell Program, Work-in-progress Seminar 2015
 Cornell Dept. of Molecular Biology and Genetics, Field of Biochem., Mol. & Cell Biol. Seminar 2015
 Cornell Aging, Inflammation and Metabolism Seminar 2015
 Cornell Meinig School of BME, External Advisory Board Meeting 2014

TEACHING

Lead instruction as independent faculty member at Cornell:

<u>Semester</u>	<u>Course #</u>	<u>Course title</u>	<u>Units</u>	<u>Level</u>	<u>Students</u>
F21	BME 5/6110	Stem Cell Engineering	3	GR, elective	49
S21	BME 3110	Cellular Systems Biology	3	UG, required	21
F20	BME 6110	Stem Cell Engineering	3	GR, elective	32
S20	BME 3110	Cellular Systems Biology	3	UG, required	24

F19	BME 6110	Stem Cell Engineering	3	GR, elective	21
S19	BME 3110	Cellular Systems Biology	3	UG, required	19
F18	BME 6110	Stem Cell Engineering	3	GR, elective	24
S18	BME 3110	Cellular Systems Biology	3	UG, required	26
F17	BME 6110	Stem Cell Engineering	3	GR, elective	17
S17	BME 3110	Cellular Systems Biology	3	UG, required	9
S16	BME 6110	Stem Cell Engineering	3	GR, elective	22
F14-S17	BME 7900	BME Seminar Series	1	GR, required	63 on avg.

Guest instruction as independent faculty member at Cornell:

<u>Semester</u>	<u>Course #</u>	<u>Course title</u>	<u>Level</u>	<u>Lead instructor</u>
F21	BME 4190	Laboratory for Mol., Cell & Syst. Eng.	UG	C. Fischbach-Teschl
F20	BME 4190	Laboratory for Mol., Cell & Syst. Eng.	UG	C. Fischbach-Teschl
S20	BME 1310	Intro to Biomed. Eng.	UG	J. Butcher
F19	BME 6120	Precision & Genomic Medicine	GR	I. De Vlaminck
F19	BME 4190	Laboratory for Mol., Cell & Syst. Eng.	UG	C. Fischbach-Teschl
S19	BioMG 7940	Current topics: Stem Cells & Cancer	GR	P. Sethupathy
F18	BME 6120	Precision & Genomic Medicine	GR	I. De Vlaminck
F18	BME 4190	Laboratory for Mol., Cell & Syst. Eng.	UG	C. Fischbach-Teschl
S18	BioMG 4450	Stem Cell Biology	UG/GR	T. Tumber
S18	BioMG 7940	Current topics: Stem Cells & Cancer	GR	P. Sethupathy
F17	BME 4190	Laboratory for Mol., Cell & Syst. Eng.	UG	C. Fischbach-Teschl
F16	BioMG 8370	Probs. in Biochem., Mol. & Cell Bio.	GR	Y. Mao
F15	BME 7710	Fundamentals of BME Research	GR	S. Adie
F15	BioMG 8370	Probs. in Biochem., Mol. & Cell Bio.	GR	Y. Mao
F14	BME 7710	Fundamentals of BME Research	GR	S. Adie

Instruction pre-Cornell:

<u>Year</u>	<u>Institution</u>	<u>Course title</u>	<u>Role</u>
2011	Stanford	Perform., Development & Adaptation of Skeletal Muscle	Guest lecturer (2x)
2011	Stanford	Multi-modality Imaging in Living Subjects	Guest lecturer (2x)
2006	M.I.T.	Molecular and Engineering Aspects of Biotechnology	Teaching assistant

TRAINEE SUPERVISION

Postdoctoral fellows:

<u>Name</u>	<u>URM/F</u>	<u>Year(s)</u>	<u>Current position</u>
Sharon Soueid-Baumgarten	F	2014-18	Staff, ATVIO Biotech Ltd. (Israel)

Doctoral students:

<u>Name</u>	<u>Program</u>	<u>URM/F</u>	<u>Year(s)</u>	<u>Current position</u>
Matalin Pirtz *	BME Ph.D.	F	2021-27 (exp'd)	-
Coulter Ralston *	BME Ph.D.	-	2021-27 (exp'd)	-
Jessica Orton	BME Ph.D.	F	2020-26 (exp'd)	-
Lauren Walter	GGD Ph.D.	F	2019-25 (exp'd)	-
Emily Laurilliard	BME Ph.D.	F	2018-24 (exp'd)	-
David McKellar **	BME Ph.D.	-	2018-24 (exp'd)	-
Paula Petrella	BMCB Ph.D.	F	2017-23 (exp'd)	-
Charles Heinke	BME Ph.D.	-	2017-23 (exp'd)	-
Umji Lee ***	EPFL Ph.D.	F	2019-21	Postdoc., Harvard Med. Sch.
Alexander Loiben	BME Ph.D.	-	2014-20	Postdoc., Univ. of Washington
Andrea De Micheli	BME Ph.D.	-	2015-20	Postdoc., Univ. Child.'s Hosp. Zurich

* Jointly supervised with A. Nikitin.

** Jointly supervised with I. De Vlaminck.

*** Visiting student from EPFL Bioengineering program. Jointly supervised with J. Feige (EPFL).

Master's students:

<u>Name</u>	<u>Program</u>	<u>URM/F</u>	<u>Year(s)</u>	<u>Current position</u>
Brianna Watson	BME M.Eng.	URM,F	2021-22 (exp'd)	-
Chris Twombly	BME M.Eng.	-	2019-20	Staff, Lenovo
Fan Wei	BME M.Eng.	-	2019-20	Ph.D. student, Univ. of So. Calif.
Lauren Slowskei	BME M.Eng.	F	2019	Staff, GenVivo
Gabrielle Ravelo	BME M.Eng.	F	2018	Staff, Lyell Immunopharma
Kun Ho Kim	BME M.Eng.	-	2017-18	Ph.D. student, Purdue Univ.
Victor Aguilar	BME M.S.	URM	2014-17	Ph.D. student, Univ. of Ill.-Chicago
Prashant Hariharan	BME M.Eng.	-	2015-16	Ph.D. student, Wayne St. Univ.
Brenton Munson	BME M.Eng.	-	2014-15	Ph.D. student, U. of Cal.-San Diego
Francis Chen	BME M.Eng.	-	2014-15	Ph.D. student, Chinese Univ.-H.K.

Undergraduate students and high school teachers:

<u>Name</u>	<u>Program</u>	<u>URM/F</u>	<u>Year(s)</u>	<u>Current position</u>
Shaili Lakhota	BME B.S.	F	2020-	-
Raina Kikani	BME B.S.	F	2020-	-
Nicholas Chan	Biol. Sci. B.S.	-	2020-	-
Tony Shen	H.S. student	-	2019	-
Jason Chen	Biol. Sci. B.S.	-	2019-	-
Leo Song *	Biol. Sci. B.S.	-	2019-	-
Ally Dalaya	Biol. Sci. B.S.	F	2018-20	Ph.D. student, Arizona Plant Path.
Paula Phillips	H.S. teacher	F	2018	-
J. C. Cheong	Biol. Sci. B.S.	URM	2017-20	Ph.D. student, Columbia CMBS
Isabella Mercado	Chem. B.S.	URM,F	2017-18	-
Paula Frazcek	BME B.S.	F	2017-19	Ph.D. student, Michigan BME
Ashritha Bheemidi	Biol. Eng. B.S.	F	2017-19	M.Eng. student, Cornell Eng. Mgmt.
Ryan Asmus	H.S. teacher	-	2017	-
Nancy Mejia	Biol. Sci. B.S.	URM,F	2016	-
Ruth Kopyto	Biol. Sci. B.S.	F	2016-19	Ph.D. student, Weill Cornell
Joseph Kim	BME B.S.	-	2015-17	M.S. student, Cornell Comp. Info Sci.
Hilarie Sit	Biol. Eng. B.S.	F	2015-17	Ph.D. student, Cornell Civ. Env. Eng.
M. Safwan Jalal	Biol. Sci. B.S.	-	2015-17	M.D. candidate, SUNY Upstate Med.
Grace Livermore	Biol. Eng. B.S.	F	2015-16	Staff, W.L. Gore

AWARDS TO TRAINEES

<u>Name</u>	<u>Award</u>	<u>Year(s)</u>
C. Ralston	NSF Graduate Research Fellowship	2022-25
J. Orton	NSF Graduate Research Fellowship, Honorable Mention	2022
E. Laurilliard	BMES-CMBE Conference Graduate Student Travel Award	2022
P. Petrella	Cell Sympos. on Overcoming Ther. Resistance in Cancer, Workshop Prize	2021
D. McKellar	Cornell NIH T32 Immune-Engineering Predoctoral Fellowship	2021-22
D. McKellar	Cornell Stem Cell Program Symposium Best Talk Award	2021
R. Kikani	Cornell Rawlings Presidential Research Scholarship	2021-
E. Laurilliard	Cornell Coll. of Eng. Garcia Graduate Excellence in Mentoring Award	2021
R. Kikani	2 nd Best Poster (Undergraduate), ASEE St. Lawrence Sectional Conference	2021
B. Watson	Cornell Engineering GEM Fellowship	2021
R. Kikani	Cornell Engineering Learning Initiatives Fellowship	2021
S. Lakhota	Cornell Rawlings Presidential Research Scholarship	2021-

L. Walter	Cornell NIH T32 Vertebrate Developmental Genomics Predoc. Fellowship	2021
P. Petrella	Cornell NYSTEM Predoctoral Fellowship	2020-21
N. Chan	Cornell Rawlings Presidential Research Scholarship	2020-
N. Chan	Cornell CALS Alumni Association Research Scholarship	2020
U. Lee	Swiss National Science Foundation (SNSF) Doc.Mobility Fellowship	2019-21
P. Petrella	Cornell Cancer Symposium Poster Award	2019
P. Petrella	Cornell Stem Cell Program Symposium 3 rd Place Poster Award	2019
P. Fraczek	Cornell BME Undergraduate Honors Thesis	2019
R. Kopyto	Cornell Biology Undergraduate Honors Thesis	2019
D. McKellar	NSF Graduate Research Fellowship, Honorable Mention	2019
P. Fraczek	Cornell Engineering Learning Initiatives Fellowship	2017-18
A. De Micheli	Best Poster Presentation, FASEB Conf. on Skeletal Muscle Satellite Cells	2018
A. Loiben	NSF Quantitative Cell Biology Network Cell Modeling Hackathon Fellowship	2018
J. C. Cheong	Cornell Rawlings Presidential Research Scholarship	2017-20
A. De Micheli	US Department of Education GAANN Fellowship	2017-18
A. De Micheli	Univ. of Penn. Single-Cell RNA-sequencing Workshop Travel Award	2017
A. Loiben	Roberta G. and John B. DeVries Graduate Fellowship	2017
I. Mercado	Cornell/HHMI CHAMPS Scholarship	2017
M. S. Jalal	Cornell Biology Undergraduate Honors Thesis (<i>cum laude</i>)	2017
V. Aguilar	NSF Graduate Research Fellowship, Honorable Mention	2016
N. Mejia	Cornell/HHMI CHAMPS Scholarship	2016
R. Kopyto	Cornell Rawlings Presidential Research Scholarship	2016-19
J. Kim	Cornell Rawlings Presidential Research Scholarship	2015-17
H. Sit	Cornell Rawlings Presidential Research Scholarship	2015-17
A. Loiben	US Department of Education GAANN Fellowship	2015-16
V. Aguilar	Roberta G. and John B. DeVries Graduate Fellowship	2015-16
B. Munson	BME Master's of Engineering Teaching Assistant of the Year	2015
V. Aguilar	Cornell Dean's Excellence Fellowship	2014-15

DOCTORAL THESIS COMMITTEE MEMBER

<u>Name</u>	<u>Program</u>	<u>Committee Chairperson(s)</u>	<u>Year(s)</u>
E. Wagner	BME	S. Jiang	2021-
M. Huang	BME	M. van der Meulen	2021-
J. Stangeland	BME	I. Brito	2021-
E. Maloney	BME	N. Andarawis-Puri	2021-
M. Pacheco	BME	N. Andarawis-Puri	2021-
A. Benvie	Nut. Sci.	D. Berry	2020-
T. McNeil	BME	M. van der Meulen	2020-
D. Abetov	BMCB	A. Nikitin	2019-
A. Hovland	GGD	M. Simoes-Costa	2019-
M. Maurer	BME	J. Lammerding	2019-21
X. Wang	BEE	M. Ma	2018-21
L. An	BMCB	A. White	2018-
K. Driscoll	BME	J. Butcher	2018-
M. Whitman	BME	C. Fischbach-Teschl	2018-
A. Shimpi	BME	C. Fischbach-Teschl	2017-
A. Brunson	BBS	J. Cheetham	2017-18
K. Wellerling	MAE	B. Kirby	2016-21
T. Kosciuk	BMCB	H. Lin	2016-20
A. Earle	BME	J. Lammerding	2015-18
H. Pan	Biophysics	M. Paszek	2015-20

D. Bassen	BME	J. Butcher & J. Varner	2014-19
K. Wang	BME	D. Gourdon	2015

EXTERNAL THESIS EXAMINER

<u>Name</u>	<u>Program</u>	<u>Committee Chair</u>	<u>Year(s)</u>
M. Owen	Harvard Genetics	S. Gaudet	2016-17

ACADEMIC SERVICE*University*

Reviewer, Trans-campus Multi-Investigator Seed Grants	2021
Co-organizer, Trans-campus Single Cell Working Group	2019-
Biotechnology Resource Center FACS Core Advisory Board	2019-
Presidential Life Sciences Fellowship Committee	2019-
Provost's Committee on Flow Cytometry Infrastructure	2018-19
Assistant chair, Seminars and Symposia Committee, Cornell Stem Cell Program	2016-
Panelist, Office of Sponsored Programs, NIH K-Award Workshop	2016

College of Engineering

Faculty lead/Project director, College of Engineering CATALYST Academy	2021
Review panelist, College of Engineering Project Team Shen Impact Awards	2020
Participant, College of Engineering website working group	2018
Faculty academic advisor, College of Engineering unaffiliated students (ENGRG 1050)	2015-20

Meinig School of Biomedical Engineering

Faculty member, TA Awards Committee	2022
Faculty member, BME Tenure-Track Faculty Search Committee	2017-18
Faculty advisor, Cornell BMES Undergraduate Student Chapter	2017
Faculty academic advisor, Affiliated BME Major students	2017-
Faculty organizer, BME PhD student work-in-progress seminars	2016-17
Faculty organizer, Cellular Environments Working Group	2015-17
Faculty advisor, Cornell BMES Graduate Student Chapter	2015-
Faculty organizer, BME Seminar Series	2015-17
Faculty member, BME PhD Program Admissions Committee	2014-17

Other

Faculty member, BMCB PhD Program Admissions Committee	2018-
---	-------

INSTRUCTIONAL PRESENTATIONS

Cornell NYSTEM RET Program: "Adult stem cells and aging."	2017,18
Cornell Office of Sponsored Projects (OSP): "How to write a successful NIH K99 proposal."	2016
Cornell BME Graduate Program: "A practical guide to finding a faculty job."	2014

PROFESSIONAL OUTREACH

Faculty host, Cornell CATALYST Academy	2021
Faculty host, Cornell NYSTEM Research Experiences for Teachers (RET) Program	2017,18
Faculty host, Cornell 4H Career Explorations University U Program	2018
Faculty host, Cornell 4H Career Explorations Focus for Teens Camp	2017
Faculty host, Expanding Your Horizons Workshop: "Engineering the Human Body"	2017

EXTERNAL SERVICE*Professional/Research Societies*

Abstract review co-chair, BMES Cellular and Molecular Bioengineering Conference	2022
---	------

Council member, Cellular & Molecular Bioengineering SIG, BMES	2021-
Program committee co-chair, Muscle Science Talks Global Zoom Seminar Series	2020-
Session co-chair, Computational Systems Biology Track, BMES Annual Meeting	2018
Track co-chair, Stem Cell Engineering Track, BMES Annual Meeting	2017
Abstract & award reviewer, BMES Cellular and Molecular Bioengineering Meeting	2016-
Abstract reviewer, AIChE/SBE International Conference on Stem Cell Engineering (ICSCE)	2016
Session chair, Computational Stem Cell Biology Track, AIChE/SBE ICSCE	2016
Abstract reviewer, BMES Annual Meeting	2015-

Grant Reviewing

New Harvest Fellowship Program	2021
Swiss National Science Foundation, SPARK Program	2020
NIH Special Emphasis Panel for NIAMS	2020
NIH Special Emphasis Panel for Musculoskeletal, Oral and Skin Sciences	2019
NIH Review Panel for "Novel Cell Non-Autonomous Mechanisms of Aging (R01)" RFA	2018
NSF BME Program: Biomanufacturing, Cellular & Molecular Engineering Panel	2017
University of Toronto Medicine by Design (MbD) Initiative Panel	2016
Ontario Institute for Regenerative Medicine (OIRM) Disease Team Grant Panel	2016,18

Journal Peer Reviewer

Cell Stem Cell, Cell Reports, Cell Systems, Cellular and Molecular Bioengineering, Communications Biology, Development, eLife, Integrative Biology, Matrix Biology, Nature Aging, Nature Communications, NPJ Regenerative Medicine, Science Advances, Stem Cell Reports, Tissue Engineering Part B, Trends in Biotechnology	various
---	---------

PROFESSIONAL MEMBERSHIPS

Member, Gerontological Society of America (GSA)	2019-
Member, Orthopedic Research Society (ORS)	2017-
Member, Society for Biomaterials (SfB)	2017-
Member, Society for Biological Engineering (SBE)	2016-
Member, American Institute for Chemical Engineers (AIChE)	2016-
Member, BMES Cellular and Molecular Bioengineering Special Interest Group	2016-
Member, Biomedical Engineering Society (BMES)	2008-
Member, International Society for Stem Cell Research (ISSCR)	2010-11
Member, IEEE Engineering in Medicine and Biology Society (IEEE EMBS)	2009