

Andrew D. Vigotsky

300 E. Superior St., Room 7-711 Phone: 914-584-9750
Chicago, IL 60611 Email: avigotsky@gmail.com
vигotsky@u.northwestern.edu
Web: <https://andrewvigotsky.com>
Twitter: @avigotsky

Education

2021 (expected) **PhD** Biomedical Engineering
Northwestern University, Evanston, IL
Advisors: Vania Apkarian, PhD and Marwan Baliki, PhD
Committee: Molly Bright, PhD and Matthew Tresch, PhD

2021 (expected) **MS** Statistics
Northwestern University, Evanston, IL

2019 (expected) **MS** Biomedical Engineering
Northwestern University, Evanston, IL
Advisors: Sabrina Lee, PhD and Elliott Rouse, PhD
Thesis: Mapping the relationships between joint stiffness, modeled muscle stiffness,
and shear-wave velocity

2015 **BS** Kinesiology
Arizona State University, Phoenix, AZ
Summa Cum Laude

Research Experience

Feb 2019—present Apkarian Pain and Passions Lab
Center for Translational Pain Research
Department of Physiology
Feinberg School of Medicine
Northwestern University, Chicago, IL
PI: Vania Apkarian, PhD

Sep 2016—Feb 2019 Neuromuscular Biomechanics Laboratory
Department of Physical Therapy and Human Movement Sciences
Feinberg School of Medicine
Northwestern University, Chicago, IL
PI: Sabrina Lee, PhD

Sep 2016—Aug 2017 Neurobionics Lab
Center for Bionic Medicine
Shirley Ryan AbilityLab, Chicago, IL
PI: Elliott Rouse, PhD

Sep 2015—Jun 2016 Human Performance Laboratory
CUNY Lehman, Bronx, NY
PI: Brad Schoenfeld, PhD

Sep 2015—May 2016 Leon Root, MD Motion Analysis Laboratory
Hospital for Special Surgery, New York, NY
PI: Howard Hillstrom, PhD

- Sep 2013—May 2015 BC Athletics, LLC
Phoenix, AZ
PI: Bret Contreras, PhD
- Aug 2013—May 2015 Movement Analysis Laboratory
Arizona State University, Phoenix, AZ
PI: Erin Feser, MS

Journal Publications

1. Taber CB, **Vigotsky A**, Nuckols G, Haun CT. (2019). Exercise-induced myofibrillar hypertrophy is a contributory cause of gains in muscle strength. *Sports Medicine*, 1-5. doi:10.1007/s40279-019-01107-8
2. Haun CT, Vann CG, Roberts BM, **Vigotsky AD**, Schoenfeld BJ, Roberts MD. (2019) A Critical Evaluation of the Biological Construct Skeletal Muscle Hypertrophy: Size Matters but So Does the Measurement. *Frontiers in Physiology*. 10:247. doi: 10.3389/fphys.2019.00247
3. Dello Iacono A, **Vigotsky AD**, Laver L, Halperin I. (2019) Beneficial Effects of Small-Sided Games as a Conclusive Part of Warm-up Routines in Young Elite Handball Players. *J Strength Cond Res*. doi:10.1519/JSC.0000000000002983
4. Lahti J, Hegyi A, **Vigotsky AD**, Ahtiainen JP. (2018). Effects of barbell back squat stance width on sagittal and frontal hip and knee kinetics. *Scand J Med Sci Sports*. doi:10.1111/sms.13305
5. **Vigotsky AD**, Rouse EJ, Lee SSM. (2018). In vivo relationship between joint stiffness, joint-based estimates of muscle stiffness, and shear-wave velocity. *Conference Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society*. doi:10.1109/EMBC.2018.8512484
6. **Vigotsky AD**, Schoenfeld BJ, Than C, Brown JM. (2018) Methods matter: the relationship between strength and hypertrophy depends on methods of measurement and analysis. *PeerJ*, 6, e5071. doi:10.7717/peerj.5071
7. Schoenfeld BJ, **Vigotsky A**, Contreras B, Golden S, Alto A, Larson R, Winkelmann N, Paoli A. (2018). Differential effects of attentional focus strategies during long-term resistance training. *European Journal of Sport Science*. doi: 10.1080/17461391.2018.1447020
8. **Vigotsky AD**, Bryanton MA, Nuckols G, Beardsley C, Contreras B, Evans J, Schoenfeld BJ. (2018). Biomechanical, anthropometric, and psychological determinants of barbell back squat strength. *Journal of Strength and Conditioning Research*. doi: 10.1519/JSC.0000000000002535
9. Halperin I, Wulf G **Vigotsky AD**, Schoenfeld BJ, Behm D. (2018). Autonomy: a missing ingredient of a successful program? *Strength and Conditioning Journal*. doi: 10.1519/SSC.0000000000000383
10. **Vigotsky AD**, Halperin I, Lehman GJ, Trajano GS, Vieira TM. (2018). Interpreting Signal Amplitudes in Surface Electromyography Studies in Sport and Rehabilitation Sciences. *Frontiers in Physiology*, 8, 985. doi: 10.3389/fphys.2017.00985
11. Monteiro ER, **Vigotsky AD**, Novaes JDS, Škarabot J. (2018). Acute effects of different anterior thigh self-massage on hip range-of-motion in trained men. *The International Journal of Sports Physical Therapy*, 13(1), 104–113. doi:10.26603/ijsp20180104
12. Schoenfeld BJ, Ogborn D, **Vigotsky AD**, Franchi M, Krieger J. (2017). Hypertrophic effects of concentric versus eccentric muscle actions: A systematic review and meta-analysis. *Journal of Strength and Conditioning Research*. Epub ahead of print.
13. Monteiro ER, **Vigotsky AD**, Škarabot J, Brown AF, Gomes TM, Novaes JDS. (2017). Acute effects of different foam rolling volumes in the inter-set rest period on maximum repetition performance. *Hong Kong Physiotherapy Journal*, 36, 57–62. doi: 10.1016/j.hkpj.2017.03.001
14. Zweifel MB, **Vigotsky AD**, Contreras B, Simiyu WWN. (2017). Effects of 6-week squat, deadlift, or hip thrust training program on speed, power, agility, and strength in experienced lifters: A pilot study. *Journal of Trainology*, 6(1).
15. Steele J, Fisher J, Skivington M, Dunn C, Arnold J, Tew G, Batterham AM, Nunan D, O’Driscoll JM, Mann S, Beedie C, Jobson S, Smith D, **Vigotsky A**, Phillips S, Estabrooks P, Winett R. (2017). A higher effort-based paradigm in physical activity and exercise for public health: making the case for a greater emphasis on resistance training. *BMC Public Health*, 17, 300. doi: 10.1186/s12889-017-4209-8
16. Monteiro ER, Škarabot J, **Vigotsky AD**, Brown AF, Gomes TM, Novaes JDS. (2017). Acute effects of different self-massage volumes on FMSTM overhead deep squat performance. *The International Journal of Sports Physical Therapy*.
17. Monteiro ER, Škarabot J, **Vigotsky AD**, Brown AF, Gomes TM, Novaes JDS. (2017). Maximum repetition performance after different antagonist foam rolling volumes in the inter-set rest period. *The International Journal of Sports Physical Therapy*, 12(1), 1-9.
18. **Vigotsky AD**, Beardsley C, Contreras B, Steele J, Ogborn D, Phillips SM. (2017). Greater Electromyographic

- Responses Do Not Imply Greater Motor Unit Recruitment and ‘Hypertrophic Potential’ Cannot Be Inferred. *Journal of Strength and Conditioning Research*. 31(1), e1-e4. doi: 10.1519/JSC.0000000000001249
19. Schoenfeld BJ, Contreras B, **Vigotsky AD**, Peterson M. (2016). Differential Effects of Heavy Versus Moderate Loads on Measures of Strength and Hypertrophy in Resistance-Trained Men. *Journal of Sports Science and Medicine*, 15, 715–722.
 20. Rossi FE, Schoenfeld BJ, Ocetnik S, Young J, **Vigotsky AD**, Contreras B, Krieger JW, Miller MG, Cholewa J. (2016). Strength, body composition, and functional outcomes in the squat versus leg press exercises. *J Sport Med Phys Fit*.
 21. Halperin I, **Vigotsky AD**. (2016). The mind—muscle connection in resistance training: friend or foe?. *European Journal of Applied Physiology*, 116(4), 863-4. doi: 10.1007/s00421-016-3341-y
 22. **Vigotsky AD**, Lehman GJ, Beardsley C, Contreras B, Chung B, Feser EH. (2016). The modified Thomas test is not a valid measure of hip extension unless pelvic tilt is controlled. *PeerJ*, 4, e2325. doi: 10.7717/peerj.2325
 23. Contreras B, **Vigotsky AD**, Schoenfeld BJ, Beardsley C, Cronin J. (2016). Effects of a six-week hip thrust versus front squat resistance training program on performance in adolescent males: A randomized-controlled trial. *Journal of Strength and Conditioning Research*, 31(4), 999–1008. doi: 10.1519/JSC.0000000000001510
 24. Schoenfeld BJ, Contreras B, **Vigotsky AD**, Ogborn D, Tiryaki-Sonmez G. (2016). Upper body muscle activation during low- versus high-load resistance exercise in the bench press. *Isokinetics and Exercise Science*. doi: 10.3233/IES-160620
 25. Schoenfeld BJ, Ogborn D, Contreras B, Cappaert T, Ribeiro AS, Alvar, BA, **Vigotsky AD**. (2016). A comparison of increases in volume load over 8 weeks of low- versus high-load resistance training. *Asian Journal of Sports Medicine*, 7(2), e29247. doi: 10.5812/asjms.29247
 26. **Vigotsky AD**, Ogborn D, Phillips SM. (2016). Motor unit recruitment cannot be inferred from surface EMG amplitude and basic reporting standards must be adhered to. *European Journal of Applied Physiology*, 116(3), 657-8. doi: 10.1007/s00421-015-3314-6
 27. Contreras B, **Vigotsky AD**, Schoenfeld BJ, Beardsley C, Cronin J. (2016). A comparison of gluteus maximus, biceps femoris, and vastus lateralis EMG amplitude in the parallel, full, and front squat variations in resistance trained females. *Journal of applied biomechanics*, 32(1), 16-22. doi: 10.1123/jab.2015-0113
 28. Contreras B, **Vigotsky AD**, Schoenfeld BJ, Beardsley C, Cronin J. (2015). A comparison of gluteus maximus, biceps femoris, and vastus lateralis EMG amplitude in the barbell, banded, and American hip thrust variations. *Journal of Applied Biomechanics*, 32(3), 254-260. doi: 10.1123/jab.2015-0091
 29. **Vigotsky AD**, Bruhns RP. (2015). The Role of Descending Modulation In Manual Therapy and Its Analgesic Implications: A Narrative Review. *Pain Research and Treatment*, 2015, 327307. doi: 10.1155/2015/292805
 30. **Vigotsky AD**, Contreras B, Beardsley C. (2015). Biomechanical implications of skeletal muscle hypertrophy and atrophy: a musculoskeletal model. *PeerJ*, 3, e1462. doi: 10.7717/peerj.1462
 31. Patterson JM, **Vigotsky AD**, Oppenheimer NE, Feser EH. (2015). Differences in unilateral chest press muscle activation and kinematics on a stable versus unstable surface while holding one versus two dumbbells. *PeerJ*, 3, e1365. doi: 10.7717/peerj.1365
 32. **Vigotsky AD**, Lehman GJ, Contreras B, Beardsley C, Chung B, Feser EH. (2015). Acute effects of anterior thigh foam rolling on hip extension, knee flexion, and rectus femoris length in the modified Thomas test. *PeerJ*, 3, e1281. doi: 10.7717/peerj.1281
 33. Contreras B, **Vigotsky AD**, Schoenfeld BJ, Beardsley C, Cronin J. (2015). A comparison of two gluteus maximus EMG maximum voluntary isometric contraction positions. *PeerJ*, 3, e1261. doi: 10.7717/peerj.1261
 34. Contreras B, **Vigotsky AD**, Schoenfeld BJ, Beardsley C, Cronin J. (2015). A comparison of gluteus maximus, biceps femoris, and vastus lateralis EMG activity in the back squat and barbell hip thrust exercises. *Journal of applied biomechanics*, 31(6), 452-8. doi: 10.1123/jab.2014-0301
 35. **Vigotsky AD**. (2015). A comment on the statistical analyses and purported effects in Mohr et al. *Journal of sport rehabilitation*, 24(2), 89. doi: 10.1123/JSR.2015-0019
 36. **Vigotsky AD**, Harper EN, Ryan DR, Contreras B. (2015). Effects of load on good morning kinematics and EMG activity. *PeerJ*, 3, e708. doi: 10.7717/peerj.708

Refereed Abstracts

1. **Vigotsky AD**, Rouse EJ, Lee SSM. (2018). In vivo relationship between joint stiffness, joint-based estimates of muscle stiffness, and shear-wave velocity. American Society of Biomechanics 42nd Annual Meeting. Podium.
2. **Vigotsky AD**, Kraszewski AP. (2017). A Three-Dimensional Mesh Wrapping Model of the Gluteus Maximus. American Society of Biomechanics 41st Annual Meeting. Poster.
3. Michalopoulos N, Mamalakis M, Chrysikos T, Katsini C, Raptis G, **Vigotsky A**. (2016). A Personalised Monitoring and Recommendation Framework for Kinetic Dysfunctions: The Trendelenburg Gait. 20th Pan-

Hellenic Conference on Informatics. Podium.

4. **Vigotsky AD**, Bryanton MA. (2016). Relative Muscle Contributions to Net Joint Moments in The Barbell Back Squat. American Society of Biomechanics 40th Annual Meeting. Poster.
5. **Vigotsky AD**, Contreras B. (2015). Biceps brachii and brachialis cross-sectional areas are major determinants of muscle moment arms. American Society of Biomechanics 39th Annual Meeting. Poster.

Other Abstracts

1. **Vigotsky AD**, Rouse EJ, Lee SSM. (2018). Relationship between plantar flexor mechanical properties and ankle joint stiffness. Eighth Annual Movement and Rehabilitation Science (MRS) Training Day. Poster.
2. **Vigotsky AD**, Rouse EJ, Lee SSM. (2018). Relationship between plantar flexor mechanical properties and ankle joint stiffness. 14th Annual Lewis Landsberg Research Day. Poster.

Professional Memberships

2019—present	International Society of Biomechanics
2018—2019	IEEE Engineering in Medicine and Biology Society
2018—2019	Institute of Electrical and Electronics Engineers
2016—present	International Society for Electrophysiology and Kinesiology
2016—present	American Physiology Society
2015—present	American Society of Biomechanics
2013—2015	National Strength and Conditioning Association

Honors and Awards

2019	The Graduate School Conference Travel Grant Amount: \$600 USD
2019	International Society of Biomechanics Student Congress Travel Grant Amount: \$600 USD
2018	American Society of Biomechanics Doctoral Student Presentation Competition Finalist Abstract: <i>In vivo</i> relationship between joint stiffness, joint-based estimates of muscle stiffness, and shear-wave velocity
2018	The Graduate School Conference Travel Grant Amount: \$600 USD
2018	American Society of Biomechanics Student Travel Award Amount: \$250 USD
2017	National Science Foundation Graduate Research Fellowship Amount: \$138,000 USD
2017	American Society of Biomechanics Grant-In-Aid Award Amount: \$2,000 USD Project: <i>In vivo</i> relationship between shear-wave velocity, joint stiffness, and joint-based estimates of muscle stiffness
2015	American Kinesiology Association Undergraduate Scholar Award

Professional Service

2018—present	Student Representative, Executive Board, American Society of Biomechanics
2017—2018	Social Subcommittee, Student Committee, American Society of Biomechanics
2016—2017	Biomechanics Advocacy Subcommittee, Student Committee, American Society of Biomechanics

***Ad Hoc* Reviewer**

PeerJ; European Journal of Sports Science; Journal of Sports Science and Medicine; Journal of Sports Sciences; Journal of Strength and Conditioning Research; Applied Bionics and Biomechanics; Sports Medicine Open; Sports Medicine; Applied Physiology, Nutrition, and Metabolism; International Journal of Sports Physiology and Performance; PLOS ONE; Journal of Trainology

Editorial Positions

2018—present Review Editor, SportRxiv
In charge of establishing guidelines for, and screening papers that are uploaded to, an Open Science Framework-based pre-print server for sport and exercise science articles.

Statistical Packages

concurve Computes and Plots Confidence (Consonance) Intervals, P-Values, and S-Values to Form Consonance Curves (Functions)
<https://cran.r-project.org/web/packages/concurve/>