

Curriculum Vitae

Oliver M. O'Reilly

<http://www.me.berkeley.edu/faculty/oreilly/index.html>

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SPECIALIZATIONS

Professor O'Reilly's interests span the fields of continuum mechanics and nonlinear dynamics. He has a broad range of specializations including directed (or Cosserat) theories of deformable bodies, constrained rigid body dynamics, contact mechanics, linear and nonlinear vibrations and linear and nonlinear dynamics of deformable bodies. He has applied these interests to a range of applications including MEMS resonators, brake squeal, the dynamics of toys, motorcycle navigation, axially moving media, artificial and natural satellites, spinal kinematics and vehicle collision dynamics. O'Reilly has co-authored over 90 archival journal articles, written three books, coauthored a book, and is a co-inventor on two patents.

EDUCATION

Ph. D. in Theoretical and Applied Mechanics (August 1990), Cornell University, Ithaca, NY.

M. Sc. in Theoretical and Applied Mechanics (August 1988), Cornell University, Ithaca, NY.

B.E. with first class honours in Mechanical Engineering (June 1985), National University of Ireland, Galway, Ireland.

EXPERIENCE

9/2020 to Present	Associate Dean for Graduate Education, Division of Computing, Data Science, and Society, University of California at Berkeley.
8/2019 to 8/2020	Chair of the Berkeley Division of the Academic Senate, University of California at Berkeley.
7/2018 to 8/2019	Vice Chair of the Berkeley Division of the Academic Senate, University of California at Berkeley.
9/2015 to 8/2020	Visiting Professor, School of Mechanical and Materials Engineering, University College Dublin, Ireland
7/2003 to Present	Professor, Department of Mechanical Engineering,

	University of California at Berkeley.
1/2009 to 6/2013	Vice Chair for Graduate Study, Department of Mechanical Engineering, University of California at Berkeley.
7/1998 to 6/2003	Associate Professor, Department of Mechanical Engineering, University of California at Berkeley.
7/1992 to 6/1998	Assistant Professor, Department of Mechanical Engineering, University of California at Berkeley.
9/1990 to 7/1992	Postdoctoral Assistant, Institut für Mechanik, Swiss Federal Institute of Technology, Zürich, Switzerland.
8/1986 to 8/1990	Research and Teaching Assistant, Department of Theoretical and Applied Mechanics, Cornell University, New York.

HONORS

Hellman Family Faculty Fund Award 1995

Pi-Tau-Sigma Excellence in Teaching Awards 1997 and 1998

University of California at Berkeley Distinguished Teaching Award 1999

Pi-Tau-Sigma Professor of the Year Award 2003

Graduate Women of Etcheverry Faculty Award for Excellence in Graduate Student
Mentoring 2006

Science Foundation Ireland, E.T.S. Walton Research Visitor Award (2007) in the
Department of Applied Mathematics at University College Cork, Ireland.

Tau-Beta-Pi Outstanding Faculty of the Year Award 2013

Visiting Professor, September 2015 – Present, School of Mechanical and Materials
Engineering, University College Dublin, Ireland.

ASME Fellow, Elected September 2015

Liviu Librescu Memorial Lecturer, February 20, 2019 at Virginia Tech.

Berkeley Faculty Service Award 2021

PROFESSIONAL SERVICE

Associate Editor, *ASME Journal of Applied Mechanics* (July 2001-June 2008).

Associate Editor, *Nonlinear Dynamics* (July 2017 - Present).

Contributing Editor, *Nonlinear Dynamics* (December 2014-April 2016).

Member of the Editorial Boards of the journals *International Journal of Nonlinear Mechanics*, *Nonlinearity*, *Regular and Chaotic Dynamics*, and *Nonlinear Dynamics and Mobile Robotics*.

Co-Organizer of *Symposium on Time-Varying Systems*, ASME 16th Biennial Conference on Vibration and Noise, Sacramento, CA, September 1997.

Co-Organizer of *Symposium on Nonlinear Dynamics and Stochastics*, ASME Winter Annual Meeting, November 1997.

Served as an reviewer for over twenty journals including *Acta Mechanica*, *Journal of Elasticity*, *ASME Journal of Applied Mechanics*, *International Journal of Solids and Structures*, *International Journal of Nonlinear Mechanics*, *Nonlinear Dynamics*, *Journal of Sound and Vibration*, *Journal of Vibration and Control*, *ASME Journal of Vibration and Acoustics*, *Mathematics and Mechanics of Solids*, *ZAMP*, *Proceedings of the Royal Society of London*, *Mechanics Research Communications*, *Journal of Vehicle System Dynamics*, *Communications in Mathematical Physics*, *Journal of Nonlinear Science*, and *Quarterly Journal of Applied Mathematics and Mechanics*. I have also served on several panels charged with reviewing proposals for the U.S. National Science Foundation, the Science Foundation of Ireland, and the Israel National Science Foundation.

COURSES AND SEMINARS TAUGHT

<i>ME24-2: Mechanics and Movies,</i>	This is a freshman seminar which discusses the portrayal of, and analysis of, various scenes in movies. The realism of action sequences is of particular interest as is the inherent difficulties encountered in simulating and animating certain scenes.
<i>ME 104: Engineering Mechanics II,</i>	This is a sophomore/junior level course on the engineering dynamics of particles and rigid bodies.
<i>ME 170: Engineering Mechanics III,</i>	This is a senior/first year graduate level course on the dynamics of particles and rigid bodies. It emphasizes three-dimensional motions of rigid bodies
<i>ME 175: Intermediate Dynamics,</i>	This is a senior/first year graduate level course on the dynamics of particles and rigid bodies. It emphasizes a differentio-geometric approach to Lagrange's equations of motion for systems of particles and rigid bodies.
<i>ME271: Calculus of Variations, & Optimal Control</i>	This is a graduate level course on the necessary and sufficient conditions for extrema and optimal control problems.
<i>ME275: Advanced Dynamics,</i>	This is a graduate level course on the Hamiltonian dynamics of discrete mechanical systems.
<i>ME290A: Nonlinear Dynamics of Continuous Systems</i>	This is a graduate level course on the nonlinear dynamics of strings and rods. In this course, the student learns modern Cosserat theories of rods and how they can be used to analyze various physical systems ranging from biological filaments to mechanical structures.
<i>ME298A: Rotations in Navigation And Mechanics</i>	This is a graduate level seminar which discusses various representations of rotations and how they are used in mechanics and navigation. For instance, The Wahba-Davenport method of using Euler-Rodrigues parameters to obtain the optimal estimate of attitude and strapdown inertial navigation are discussed.

TEACHING EVALUATIONS

<i>COURSE</i>	<i>SEMESTER</i>	<i>TEACHING EFFECTIVENESS (?/7.00)</i>	<i>COURSE WORTH (?/7.00)</i>
ME175	FALL 2018	6.75 [6.54]	6.27 [5.66]
ME290A	SPRING 2018	6.5 [5.89]	6.25 [5.74]
ME104	SPRING 2018	6.53 [5.55]	5.99 [5.29]
ME175	FALL 2017	6.83 [5.68]	6.57 [5.64]
ME275	SPRING 2017	6.73 [5.99]	6.0 [5.74]
ME175	FALL 2016	6.4 3[5.93]	6.0 [5.79]
ME104	SPRING 2016	6.6 [5.4,1]	6.5 [5.2,1]
ME290A	SPRING 2016	6.2 [6.1,13]	6.6 [6.1,6]
ME175	FALL 2015	6.8 [5.9,1]	6.6 [5.9,1]
ME275	SPRING 2015	6.9 [5.8,1]	6.3 [5.8,9]
ME104	SPRING 2015	6.6 [5.3,1]	6.5 [5.1,1]
ME175	FALL 2014	6.7 [5.8,1]	6.7 [6.0,1]
ME175	FALL 2013	6.6 [6.1,3]	6.3 [6.1,4]
ME104	FALL 2012	6.3 [5.1,2]	5.9 [5.1,3]
ME175	FALL 2012	6.8 [5.5,2]	6.6 [5.7,2]
ME275	SPRING 2012	6.7 [6.1,4]	6.5 [5.8,6]
ME175	FALL 2011	6.6 [5.8,1]	5.9 [5.8,5]
ME104	SPRING 2011	6.5 [5.2,1]	6.2 [5.0,1]
ME275	FALL 2010	6.8 [5.89,1]	6.7 [5.88,2]
ME175	FALL 2009	6.7 [6.0, 1]	6.5 [6.0,2]
ME104	SPRING 2009	6.6 [5.4,1]	6.4 [5.3,1]
ME275	SPRING 2009	6.4 [5.7,2]	5.9 [5.7,8]
ME175	FALL 2008	6.6 [5.7,2]	6.4 [5.6,1]
ME290A	SPRING 2008	6.8 [5.4, 1]	6.4 [5.5,1]
ME175	FALL 2007	6.8 [5.49, 1]	6.7 [5.64, 1]
ME104	FALL 2007	6.6 [5.41, 1]	6.6 [5.34, 1]

<i>ME170</i>	<i>FALL 2006</i>	<i>6.5 [5.4, 1]</i>	<i>6.5 [5.5, 1]</i>
<i>ME175</i>	<i>SPRING 2006</i>	<i>6.7 [5.6, 1]</i>	<i>6.5 [5.6, 1]</i>
<i>ME104</i>	<i>FALL 2005</i>	<i>6.5 [5.1, 1]</i>	<i>6.3 [5.0, 1]</i>
<i>ME290A</i>	<i>SPRING 2005</i>	<i>7.00 [5.95, 1]</i>	<i>6.5 [5.82, 1]</i>
<i>ME170</i>	<i>FALL 2004</i>	<i>6.00 [5.69, 3]</i>	<i>5.8 [5.8, 5]</i>
<i>ME175</i>	<i>SPRING 2004</i>	<i>6.6 [5.92, 1]</i>	<i>6.5 [5.92, 1]</i>
<i>ME275</i>	<i>SPRING 2004</i>	<i>6.5 [5.83, 2]</i>	<i>6.2 [5.88, 4]</i>
<i>ME104</i>	<i>FALL 2003</i>	<i>6.4 [5.28, 1]</i>	<i>6.2 [5.42, 1]</i>
<i>ME170</i>	<i>FALL 2002</i>	<i>6.2 [5.78, 2]</i>	<i>6.0 [5.83, 2]</i>
<i>ME290A</i>	<i>FALL 2002</i>	<i>6.3 [5.86, 3]</i>	<i>5.0 [5.75, 12]</i>
<i>ME175</i>	<i>SPRING 2001</i>	<i>6.8 [5.5, 1]</i>	<i>6.4 [5.7, 2]</i>
<i>ME104</i>	<i>FALL 2000</i>	<i>6.6 [5.2, 1]</i>	<i>6.2 [5.3, 1]</i>
<i>ME170</i>	<i>FALL 2000</i>	<i>6.1 [5.6, 2]</i>	<i>5.8 [5.6, 4]</i>

Numbers in [] indicate departmental average (/7) and (when available) the ranking of this course compared to comparable courses taught in the Department of Mechanical Engineering at U. C. Berkeley during the same semester. Summaries of (anonymous) written comments and evaluations prior to 2000 available upon request.

Starting in Fall 2016, end-of-semester course evaluations were conducted using an online system. Comparative rankings were not made available.

MASTERS STUDENTS CHAIRED

Carlos Casarez (M.S. conferred 2016)

Miguel Christophy (M.S. conferred 2010)

Christopher Diamond (M.S. conferred 2013)

Paul Drazin (M.S. conferred 2013)

Eva A. Kanso (M.S. conferred 1999)

Nur Adila Faruk Senan (M.S. conferred 2008)

Nathaniel Goldberg (M.S. conferred 2019)

Evan Hemingway (M.S. conferred 2016)

Wayne Huang (M.S. conferred 2006)

Elaine Kwan (M.S. conferred 2019)

Avery J. Jutkowitz (M.S. conferred 2003)

Nathan M. Kinkaid (M. S. conferred 2001)

Todd A. Lauderdale (M. S. conferred 2001)

Tom Libby (M.S. conferred 2012)

David Aaron Moody (M.S. conferred 2009)

Thomas R. Nordenholz (M.S. conferred 1995)

Alyssa Novelia (M.S. conferred 2015)

Jeun Jye Ong (M.S. conferred 2003)

Bayram Orazov (M.S. conferred 2007)

Daniel Martinez Peters (M.S. conferred 2009)

Benjamin L. Thoma (M. S. conferred 2000)

Timothy N. Treserras (M. S. conferred 2006)

Peter C. Varadi (M.S. conferred 1996)

DOCTORAL STUDENTS SUPERVISED

Christopher Daily-Diamond (Ph.D. conferred 2017) *Rapid Onset Impulsive Loading: Three Dynamical Case Studies*

Paul Drazin (Ph.D. conferred 2017) *Modeling and Analysis of Elements in Structural Mechanics*

Carlos Casarez (Ph.D. conferred 2018) *Tail-Augmented Self-Righting and Turning of a Dynamic Legged Millirobot*

Nur Adila Faruk Senan (Ph.D. conferred 2011) *The Intervertebral Joint as a Stiffness Matrix: Theory, Practice, and Application*

Evan G. Hemingway (Ph.D. conferred 2020) *Cosserat Curves: Descriptions of Peristalsis and a Discrete Model*

Patrick Kessler (Ph.D. conferred 2007) *On the Encirclement of Curves*

Hyung-Taek Kim (Ph.D. conferred 2019) *The Dynamics of Flexible Risers Transporting Fluids in Subsea Environments*

Nathan M. Kinkaid (Ph.D. conferred 2005) *On the Nonlinear Dynamics of Disc Brake Squeal*

Todd A. Lauderdale (Ph.D. conferred 2005) *An Electromagnetic Rod Theory with MEMS Applications*

David A. Moody (Ph.D. conferred 2011) *A Quantification of Deep Core Trunk Muscles Impact on Lumbar Lordosis and Spine Stability*

Thomas R. Nordenholz (Ph.D. conferred 1998) *The Stability of Steady Motions of Pseudo-Rigid Bodies*

Alyssa Novelia (Ph. D. conferred 2018)	<i>Discrete Elastic Rods for Simulating Soft Robotic Limbs</i>
Bayram Orazov (Ph.D. conferred 2011)	<i>A Novel Excitation Scheme for an Ocean Wave Energy Converter</i>
Daniel M. Peters (Ph.D. conferred 2011)	<i>Nonlinear Stability Criteria for Elastic Rod Structures</i>
Timothy N. Tresierras (Ph. D. conferred 2009)	<i>Modeling Plant Growth Using a Modified Elastica Theory</i>
Jeffrey S. Turcotte (Ph. D. conferred 1996)	<i>Approximate Theories of Elastic Rods with Applications</i>
Peter C. Varadi (Ph. D. conferred 1999)	<i>On the Nonlinear Stability of Rotating Rods</i>
Xuance Zhou (Ph. D. conferred 2015)	<i>Models and Analysis of Locomotion and Gripping in Soft Robots</i>

UNIVERSITY SERVICE

Chair Berkeley Division of the Academic Senate ('19-'20)

Vice Chair Berkeley Division of the Academic Senate ('18-'19)

Chair Academic Senate's Committee on Teaching ('05-'06, '06-'07, '16-'17, and '17-'18 Academic Years)

Co-Chair Academic Senate's Committee on Teaching ('07-'08 Academic Year)

Co-Chair Executive Committee for the Celebration of 150 Years of Women at U. C. Berkeley ('19-'20 and '20-'21 Academic Years)

Co-Chair Task Force Committee for the Celebration of 150 Years of Women at U. C. Berkeley ('18-'19 Academic Year)

Chair Academic Senate's Committee on Special Scholarships ('99-'00 & '00-'01 Academic Years)

Co-Chair Joint Administration-Senate Task Force on Teaching Evaluations ('07-'08 and '08-'09 Academic Years)

Co-Chair Joint Administration-Senate Task Force on Instructional Resilience (Spring Semester 2020)

Chair Student Information Systems (SIS) Faculty Advisory Committee ('16-'17 and '17-'18 Academic Years)

Elected Member of Divisional Council of the Berkeley Division of the Academic Senate ('08-'09, '09-'10, '13-'14, and '14-'15 Academic Years)

Member KALX Radio Policy Advisory Board ('00-'01 through '15-'16 Academic Years)

Member On the Same Page Advisory Committee ('13-'14 through to '15-'16 Academic Years)

Member Academic Senate's Committee on Teaching ('03-'04 and '04-'05 Academic Years and Fall '08)

Member Academic Senate's Committee on Special Scholarships ('98-'99 Academic Year)

Member Academic Senate's Graduate Student Instructor Teaching and Mentoring Task Force (Fall 2002).

Member Academic Senate's Steering Committee of the Center for Faculty Leadership and Outreach ('00-'01 Academic Year)

Member Reading and Composition Task Force ('07-'08 Academic Year)

Member College of Letters & Sciences Advisory Board for College Writing Program ('12-'13 Academic Year)

DEPARTMENTAL & COLLEGE SERVICE

Vice Chair for Graduate Studies ('09-'10, '10-'11, '11-'12 & '12-'13 Academic Years)

Chair Drake Scholarship Committee ('98-'99, '01-'02 & '03-'04 Academic Years)

Chair Student Prizes Committee ('07-'08 and '08-'09 Academic Years)

Secretary of the College of Engineering Faculty ('16-'17 and '17-'18 Academic Years)

Member College of Engineering Graduate Study Committee ('09-'10, '11-'12 & '12-'13 Academic Years)

Member College of Engineering Student Relations Committee ('09-'10 Academic Year)

Member Policy Committee ('00-'01 Academic Year)

Member Drake Scholarship Committee ('08-'09 Academic Year)

Member Committee for Undergraduate Study ('93-'94 & '94-'95 Academic Years)

Member Committee on Undergraduate Admissions ('94-'95 & '16-'17 Academic Years)

Member Committee for Preliminary Examinations ('93-'94 & '97-'98 Academic Years)

Chair Committee for Preliminary Examinations ('05-'06 Academic Year)

Chair Graduate Study Committee ('09-'10, '10-'11, '11-'12 & '12-'13 Academic Years)

Chair Committee on Web & Communication ('16-'17 & '18-'19 Academic Years)

Chair Committee on Faculty Awards ('17-'18 Academic Year)

Member Committee on Seminars ('17-'18 Academic Year)

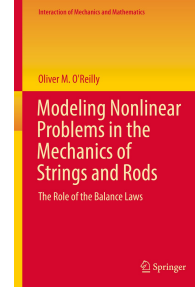
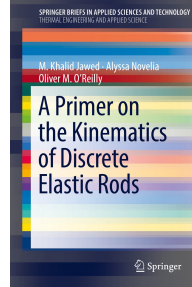
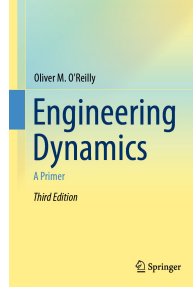
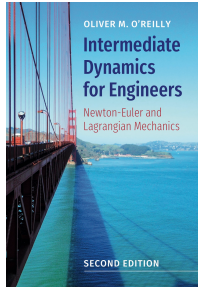
RESEARCH GRANTS

1. **Hellman Family Faculty Fund** *A Feasible Investigation of Satellite Dynamics*. This was a one year grant which started in June 1995.
2. **California PATH**: *Models of Vehicular Collision: Development and Simulation with Emphasis on Safety*. This was a three-year grant which started in December 1995. Professors Oliver M. O'Reilly and Panos Papadopoulos were the Co. Pis.
3. **National Science Foundation** Grant No. CMS0084808 *Mechanics of Contact with Application to Brake Squeal and Axially Moving Media*. This was a four-year grant which started on August 15, 2000. The grant monitor is Dr. Alison Flatau. Professors Oliver M. O'Reilly and Panos Papadopoulos are the Co.PIs.
4. **U. S. Army Research Office**: MEMS Strain Sensor for Roller Bearings. This was a multi-year grant which began on June 1, 2002. Oliver O'Reilly and Albert P. Pisano were the Co.PIs.
5. **Bavarian Motor Works (BMW)**: *The Development of an Inertial Measurement Unit and a Human-Machine Interface for Motorcycle Navigation Systems*. This is a three-year grant which began on January 1, 2001 and ended on December 31, 2003. J. Karl Hedrick is the original PI on this grant. O'Reilly was added as a Co. PI in June 2002.
6. **U.C. Berkeley Center for Pure and Applied Mathematics**: *Building/Designing a Pseudospectral Mechanism*. One-year grant for \$20,000. Professors Maciej Zworski and Oliver M. O'Reilly were the Co-Principal Investigators on this award.
7. **National Science Foundation** Grant No. CMMI-0726675 *A Framework for Studying the Dynamics of the Human Spine with Application to Clinical Treatments for Back Pain*. This is a four-year grant which began on August 1, 2008. The grant monitor is Dr. Eduardo Misawa. Professors Oliver M. O'Reilly and Jeffrey C. Lotz (Department of

Orthopaedic Biomechanics at U.C.S.F.) were the Co-Principal Investigators on this award.

8. **KAUST-UCB Academic Alliance** *Novel Wave Energy Converters*. This is a one year grant which began on August 1, 2008. Professors Oliver M. O'Reilly and Omer Savas were the Co-Principal Investigators on this award.
9. **National Science Foundation** Grant No. CMMI-1000906 *On the Dynamics of a Novel Ocean Wave Energy Converter*. This is a four-year grant which began on August 1, 2010. The grant monitor is Dr. Eduardo Misawa. Professors Oliver M. O'Reilly and Omer Savas along with Professors Carolyn Judge (US Naval Academy in Annapolis) and Professor N. S. Namachchivaya (University of Illinois at Urbana Champaign) are the Co-Principal Investigators on this award.
10. **Army Research Office** Grant No. W911NF-16-1-0242 *ARO-Nonlinear Dynamics and Distributed Control for Soft Robot Locomotion*. This is a three-year grant that began on May 1, 2016. The program manager is Sam Stanton. Professors Oliver M. O'Reilly along with Professors Derek Paley (University of Maryland) and Professor Carmel Majidi (Carnegie Mellon University) are the Co-Principal Investigators on this award.

PUBLICATIONS



PUBLICATIONS: ARCHIVAL JOURNALS

1. N. N. Goldberg and O. M. O'Reilly, *On Contact Point Motion in the Vibration Analysis of Elastic Rods*, **Journal of Sound and Vibration**, vol. 487, 115579, 2020.
2. E. G. Hemingway and O. M. O'Reilly, *Continuous Models for Peristaltic Locomotion with Application to Worms and Soft Robots*, **Biomechanics and Modeling in Mechanobiology**, Published Online July, 2020.
3. E. G. Hemingway and O. M. O'Reilly, *On a Planar Theory of a Discrete Nonlinearly Elastic Rod*, **Acta Mechanica**, vol. 231, pp. 1217-1250, 2020.
4. N. N. Goldberg and O. M. O'Reilly, *Mechanics-Based Model for the Cooking-Induced Deformation of Spaghetti*, **Physical Review E**, vol. 101, No 1, pp. 013001, 2020. This paper was an "Editors Suggestion" for **Physical Review E** and featured in [Physics](#).
5. H. -T. Kim and O. M. O'Reilly, *On the Delicate State of Instability of a Vertical Riser Transporting Fluid*, **Journal of Fluids and Structures**, vol. 29, p. 10281. 2020.
6. A. Bronars and O. M. O'Reilly, *Gliding Motions of a Rigid Body: The Curious Dynamics of Littlewood's Rolling Hoop*, **Proceedings of the Royal Society of London A: Mathematical, Physical and Engineering Sciences**, vol. 475, iss. 2169, p. 20190440, 2019.
7. N. N. Goldberg, X. Huang, C. Majidi, A. Novelia, O. M. O'Reilly, D. A. Paley, and W. L. Scott, *On Planar Discrete Elastic Rod Models for the Locomotion of Soft Robots*, **Soft Robotics**, vol. 6, no. 5, pp. 595-610, 2019.
8. H. -T. Kim and O. M. O'Reilly, *Instability of Catenary-Type Flexible Risers Conveying Fluid in Subsea Environments*, **Ocean Engineering**, vol. 173, pp. 98-115 (2019).

9. P. Akella, O. M. O'Reilly, and K. Sreenath, *Controlling the Locomotion of Spherical Robots or why BB-8 Works*, **ASME Journal of Mechanisms and Robotics**, vol. 11, iss. 2, p. 24501 (2019).
10. E. G. Hemingway and O. M. O'Reilly, *Perspectives on Euler angle singularities, gimbal lock, and the orthogonality of applied forces and applied moments*, **Multibody System Dynamics**, vol. 44, iss. 1, p. 31–56, (2018).
11. C. A. Daily-Diamond, A. Novelia, and O. M. O'Reilly, *Dynamical analysis and development of a biologically inspired SMA caterpillar robot*, **Bioinspiration and Biomimetics**, vol. 21, iss. 5, p. 56005, (2017).
12. J. K. Nichols, M. Sena, J. L. Hu, O. M. O'Reilly, B. Feely, and J. C. Lotz, *A Kinect-Based Movement Assessment System: Marker Position Comparison to Vicon*, **Computer Methods in Biomechanics and Biomedical Engineering** vol. 20, iss. 12, pp. 1289-1298, (2017).
13. K. M. de Paynebrune and O. M. O'Reilly, *On the Development of Rod-Based Models for Pneumatically Actuated Soft Robot Actuators: A Five-Parameter Constitutive Relation*, **International Journal of Solids and Structures**, Vol. 120C, 226-235 (2017).
14. C. A. Daily-Diamond, C. E. Gregg and O. M. O'Reilly, *The Roles of Impact and Inertia in the Failure of a Shoelace Knot*, **Proceedings of the Royal Society of London**, Vol. 473, No. 2200 (2017).
15. J. K. Nichols and O. M. O'Reilly, *Verifying the Equivalence of Representations of the Knee Joint Moment Vector from a Drop Vertical Jump Task*, **The Knee Journal**, Vol. 24, No. 2, 484–490 (2017).
16. K. M. de Payrebrune and O. M. O'Reilly, *On Constitutive Relations for Rod-Based Models of a Pneu-Net Bending Actuator*. **Extreme Mechanics Letters**. Vol. 8, Is. C, 38–46 (2016).
17. A. Novelia and O.M. O'Reilly, *On Geodesics of the Rotation Group $SO(3)$* . **Regular and Chaotic Dynamics**, Vol. 20, No. 6, 729-738 (2015).
18. X. Zhou and O. M. O'Reilly, *On Adhesive and Buckling Instabilities in the Mechanics of Carbon Nanotube Bundles*. **ASME Journal of Applied Mechanics**, Vol. 82, No. 10, 101007 (2015).
19. C. A. Diamond, C. Q. Judge, B. Orazov, Ö. Savaş and O. M. O'Reilly, *Mass-Modulation Schemes for a Class of Wave Energy Converters: Experiments, Models, and Efficacy*. **Ocean Engineering**, Vol. 104, 452-468 (2015). ^[LSEP]
20. X. Zhou, C. Majidi, and O. M. O'Reilly, *Soft Hands: An Analysis of Some Gripping Mechanisms in Soft Robot Design*. **International Journal of Solids and Structures**, Vol. 64-65, 155-165 (2015). ^[LSEP]

21. X. Zhou, C. Majidi, and O. M. O'Reilly, *Flexing into Motion: A Locomotion Mechanism for Soft Robots*, **International Journal of Nonlinear Mechanics**, Vol. 74, 7-17 (2015).
22. A. Novelia and O. M. O'Reilly, *On the Dynamics of the Eye: Geodesics on a Configuration Manifold, Motions of the Gaze Direction and Helmholtz's Theorem*, **Nonlinear Dynamics**, Vol. 80, No. 3, 1303-1327 (2015).
23. O. M. O'Reilly, *Some Perspectives on Eshelby-Like Forces in the Elastica Arm Scale*, **Proceedings of the Royal Society of London**, Vol. 471, p.30140785 (2015).
24. O. M. O'Reilly and A. R. Srinivasa, *A Simple Treatment of Constraint Forces and Constraint Moments in Rigid Body Dynamics*, **ASME Applied Mechanics Reviews**, Vol. 67, No. 1, 014851 (2015).
25. X. Zhou, C. Majidi, and O. M. O'Reilly, *Energy Efficiency in Friction-Based Locomotion Mechanisms for Soft and Hard Robots: Slower can be Faster*, **Nonlinear Dynamics**, Vol. 78, No. 4, 2811-2821 (2014).
26. O. M. O'Reilly, *On the Formulations of Cost Functions Featuring Components of Generalized Torques*, **Automatica**, Vol. 50, No. 10, 2723-2725 (2014).
27. O. M. O'Reilly, M. P. Sena, B. T. Feeley, and J. C. Lotz, *On Representations for Joint Moments using a Joint Coordinate System*, **ASME Journal of Biomechanical Engineering**, Vol. 135, No. 11, 114504 (2013).
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