

SHEILA N. PATEK

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APPOINTMENTS

- 2013-present Associate Professor, Biology Department, Duke University, Durham, NC.
2012-2013 Associate Professor, Department of Biology, University of Massachusetts, Amherst.
2009-2012 Assistant Professor, Department of Biology, University of Massachusetts, Amherst.
2008-2009 Radcliffe Fellow, Radcliffe Institute for Advanced Studies, Harvard University.
2004-2009 Assistant Professor, Department of Integrative Biology, University of California Berkeley.

EDUCATION

- 2001-2004 Postdoctoral Fellow. Miller Institute for Basic Research in Science, University of California Berkeley.
1995-2001 Ph.D. in Biology. Duke University, Durham, NC.
1990-1994 A.B. with honors in Biology. Harvard University, Cambridge, MA.

GRANTS AND FELLOWSHIPS

- 2015-2020 Multidisciplinary University Research Initiative, Army Research Office, Department of Defense. “Evolutionary mechanics of impulsive biological systems: guiding scalable synthetic design”. \$6.17 million, PI: S. Patek; co-PI’s: M. Azizi, U. C. Irvine; S. Bergbreiter U. of Maryland, College Park, A. Crosby, UMass Amherst; M. Prakash, Stanford; R. Wood, Harvard.
2012-2018 National Science Foundation CAREER award, Integrative Organismal Biology. “The evolutionary mechanics of rapid movement”. \$899,965, PI: S. Patek.
2017 Army Educational Outreach Program, Department of Defense. \$18,000. PI: S. Patek; co-PI’s: S. Bergbreiter, U. MD College Park; R. Wood, Harvard; A. Crosby, UMass Amherst.
2016 Army Educational Outreach Program, Department of Defense. \$18,000. PI: S. Patek; co-PI’s: S. Bergbreiter, U. MD College Park; R. Wood, Harvard; A. Crosby, UMass Amherst.
2015-2016 Guggenheim Fellowship, “The mechanics and evolution of ultrafast movements”. \$50,000, PI: S. Patek.
2015-2016 Intellectual Community Planning Grant, Duke University. \$4750, PI: S. Patek.

- 2011-2012 National Geographic Society Committee for Research and Exploration. “Rumbling in the benthos: acoustics and human impacts in mantis shrimp”. \$20,000, PI: S. Patek.
- 2011-2012 Armstrong Fund for Science. “The evolution of cavitation in biological systems and biologically-inspired design”. \$40,000, PI: S. Patek; co-PI’s: Y. Modarres-Sadeghi, D. Schmidt.
- 2007-2010 National Science Foundation, Integrative Organismal Biology. “The comparative mechanics of rapid predatory movements”. \$342,000, PI: S. Patek.
- 2008-2009 Radcliffe Fellowship. Radcliffe Institute for Advanced Studies. “Acoustic communication in ancient and living seas”. \$80,000, PI: S. Patek.
- 2007 Hellman Family Faculty Fund. “Evolutionary physiology of communication in the sea”. \$25,000, PI: S. Patek.
- 2004-2007 Junior Faculty Research Grants, Committee on Research, UC Berkeley (net \$24,254).
- 2005-2007 Research Initiative Seed Grant - Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign. “Generating extreme speeds and force from small, simple materials: Biologically inspired models from striking ability in trap-jaw ants”. \$139,083, PI: Suarez; co-PI’s: F. Delcomyn, X. Zhang, and S. Patek.
- 2001-2004 Miller Postdoctoral Fellowship. Miller Institute, University of California at Berkeley (\$180,000).
- 1999-2000 National Science Foundation Dissertation Improvement Grant (IBN – Animal Behavior). “Sound production in spiny lobsters (Palinuridae): morphological constraints and the evolution of signal diversity” (\$9812).
- 1996-2000 National Science Foundation Graduate Research Fellowship (~\$70,000).
- 1999 Sigma Xi S. Hughes-Schrader International Travel Award (\$2000). Declined.
- 1999 Graduate Award for International Research (\$2200).
- 1997-1999 Four grants under \$1000 (SICB, Sigma Xi and PADI)
- 1998 Smithsonian Institution Short-term Visitor Fellowship (\$1595).

AWARDS AND HONORS

- 2015-2016 Fellow of the John Simon Guggenheim Memorial Foundation.
- 2008-2009 Radcliffe Fellowship for “scholars, scientists, artists, and writers of exceptional promise and demonstrated accomplishments”. Radcliffe Institute for Advanced Studies, Harvard University.
- 2009 Christopher Clavius, S.J. Award “given to a researcher who also serves as an inspiration to others”. Sigma Xi, St. Joseph’s University.
- 2008 Bartholomew Award “for distinguished contributions to comparative physiology”. Society for Integrative and Comparative Biology.
- 2007 Hellman Family Faculty Fund. Awarded to junior faculty with “great promise for distinction in their research”.

- 2004 Brilliant 10 Award. Awarded annually to ten of the “most dynamic, promising young researchers at institutions around North America” by Popular Science magazine.
- 2000 Best Student Paper Award, Division of Invertebrate Zoology, Society for Integrative and Comparative Biology.
- 2000 Best Student Paper Award, The Crustacean Society.
- 1999-2000 Philanthropic Education Organization Scholar Award (\$7000).

DISTINGUISHED LECTURESHIPS AND PLENARY TALKS

- 2016 Plenary lecture, American Society of Biomechanics, Raleigh, NC.
- 2016 Stockard Lecture in Anatomy and Physiology, Oklahoma State University.
- 2014 Plenary lecture, Society for Integrative and Comparative Biology regional conference, Chapel Hill, NC.
- 2013 Zoological Education Trust Lecturer, Canadian Society of Zoologists, Guelph.
- 2012 24th Annual Donald Putnam Abbott Memorial Lecturer, Hopkins Marine Station, Stanford University.
- 2011 Paul Illg Distinguished Lectureship, Friday Harbor Laboratories, University of Washington.
- 2006 Plenary Lecture, Invertebrate Sound and Vibration, Toronto, Canada.

PUBLICATIONS (*current or recent undergraduate; + graduate student; ^ postdoc)

Green⁺, P. A. and **S. N. Patek**. *In review*. Mutual assessment during territorial contests and ritualized fighting in mantis shrimp (Stomatopoda). *Animal Behaviour*.

Liu, F., R. L. Chavez, **S. N. Patek**, A. Pringle, J. J. Feng, and C.-H. Chen. *In review*. Capillary-inertial ballistic launching via asymmetric drop coalescence. *Journal of the Royal Society Interface*.

Muñoz[^], M.M., P.S. L. Anderson, **S. N. Patek**. 2017. Mechanical sensitivity and the dynamics of evolutionary rate shifts in biomechanical systems. *Proceedings of the Royal Society B* 284 (1847). DOI: 10.1098/rspb.2016.2325

McHenry, M. J., P. S. L. Anderson[^], S. Van Wassenbergh, D. G. Matthews*, A. Summers and **S. N. Patek**. 2016. The comparative hydrodynamics of rapid rotation by predatory appendages. *Journal of Experimental Biology* 219(21): 3399-3411. *Feature article and cover article*.

Rosario⁺, M. V., G. P. Sutton, **S. N. Patek**, and G. S. Sawicki. 2016. Muscle-spring dynamics in time-limited, elastic movements. *Proceedings of the Royal Society B* 283: 20161561.

Anderson[^], P.S.L., D. Smith* and **S. N. Patek**. 2016. Competing influences on morphological modularity in biomechanical systems: a case study in mantis shrimp. *Evolution and Development* 18(3):171-181.

- Kagaya[^], K. and **S. N. Patek**. 2016. Feed forward control of ultrafast, ballistic movements. *Journal of Experimental Biology* 210(3): 319-333.
- Green⁺, P.A. and **S. N. Patek**. 2015. Contests with deadly weapons: telson sparring in mantis shrimp (Stomatopoda). *Biology Letters* 11: 20150558. <http://dx.doi.org/10.1098/rsbl.2015.0558>
- Rosario⁺, M. V. and **S. N. Patek**. 2015. Multi-level analysis of elastic morphology: the mantis shrimp's spring. *Journal of Morphology* 276: 1123-1135.
- Patek, S. N.** 2015. The most powerful movements in biology. *American Scientist* 103(5): 330-337.
- Anderson[^], P. S. L. and **S. N. Patek**. 2015. Mechanical sensitivity reveals evolutionary dynamics of mechanical systems. *Proceedings of the Royal Society B* 282: 20143088.
- Patek, S. N.** 2014. Biomimetics and evolution. *Science* 345(6203): 1448-1449.
- Anderson[^], P. S. L., T. Claverie[^] and **S. N. Patek**. 2014. Levers and linkages: mechanical trade-offs in a power-amplified system. *Evolution* 68(7): 1919-1933.
- Blanco*, M.M. and **S.N. Patek** (equal authorship). 2014. Muscle trade-offs in a power-amplified prey capture system. *Evolution* 68(5): 1399-1414.
- Cox⁺, S.M., D. Schmidt, Y. Modarres-Sadeghi and **S. N. Patek**. 2014. A physical model of the extreme mantis shrimp strike: kinematics and cavitation of Ninjabot. *Bioinspiration and Biomimetics* 9: 016014 (16 pp.)
- Podos, J. and **S. N. Patek**. 2014. Acoustic signal evolution: biomechanics, size, and performance. In: *Animal Signaling: Functional and Evolutionary Perspectives*, eds. D. Irschick, M. Briffa and J. Podos.
- Patek, S.N.**, P. A. Green⁺, M. V. Rosario⁺. 2013. Internal Morphology. In: *Treatise on Zoology - Anatomy, Taxonomy, Biology: The Crustacea*. Vol. 4, Part A. Eds. J. C. von Vauple Klein, M. Charmantier-Daures, and F. Schram. Brill: Boston. pp. 202-216.
- Claverie[^], T. and **S. N. Patek**. 2013. Modularity and rates of evolutionary change in a power-amplified prey capture system. *Evolution* 67(11): 3191-3207.
- Irschick, D., C. Albertson, P. Brennan, J. Podos, N. Johnson, **S. N. Patek**, and E. Dumont. 2013. Evo-devo beyond morphology: from genes to resource use. *Trends in Ecology and Evolution* 28(5): 267-273.
- Patek, S.N.**, M.V. Rosario⁺, J. R. A. Taylor[^]. 2013. Comparative spring mechanics in mantis shrimp. *Journal of Experimental Biology* 216: 1317-1329.
- deVries⁺, M.S., E. A. K. Murphy*, **S. N. Patek**. 2012. Strike mechanics of an ambush predator: the spearing mantis shrimp. *Journal of Experimental Biology* 215 (24): 4374-4384. *Feature article*.
- Staaterman*, E., Clark, C., Gallagher, A., Claverie, T., deVries⁺, M. and **Patek, S.** 2012. Acoustic ecology of the California mantis shrimp (*Hemisquilla californiensis*). In *The Effects of*

Noise on Aquatic Life, vol. 730 eds. A. Popper and A. Hawkins), pp. 165-168: Springer New York.

McHenry, M. J., T. Claverie[^], M. V. Rosario⁺ and **S. N. Patek**. 2012. Gearing for speed slows the predatory strike of a mantis shrimp. *Journal of Experimental Biology*: 215:1231-1245.

Staaterman*, E.R., C. W. Clark, A. J. Gallagher, M. S. deVries⁺, T. Claverie[^], and **S. N. Patek**. 2011. Rumbling in the benthos: the acoustic ecology of the California mantis shrimp. *Aquatic Biology* 13: 97-105. *Feature article*.

Stillman, J. H., M. Denny, D. K. Padilla, M. Wake, **S. Patek**, B. Tsukimura. 2011. Grand opportunities: strategies for addressing grand challenges in organismal biology. *Integrative and Comparative Biology* 51(1): 7-13.

Patek, S.N., D. Dudek, M.V. Rosario*. 2011. From bouncy legs to poisoned arrows: elastic movements in invertebrates. *Journal of Experimental Biology* 214: 1973-1980.

Claverie[^], T., E. Chan* and **S.N. Patek**. 2011. Modularity and scaling in fast movements: power amplification in mantis shrimp. *Evolution* 62: 443-461.

Taylor[^], J.R.A. and **S.N. Patek**. 2010. Ritualized fighting and biological armor: the impact mechanics of the mantis shrimp's telson. *Journal of Experimental Biology* 213: 3496-3504. *Feature article*.

Staaterman*, E.R., T. Claverie[^] and **S.N. Patek**. 2010. Disentangling defense: the function of spiny lobster sounds. *Behaviour* 147, 235-258.

Taylor[^], J. R. A. and **S. N. Patek** (equal authorship). 2010. Crustacean seismic communication: heard but not present? In: *The Use of Vibrations in Communication: Properties, Mechanisms and Function Across Taxa*, ed. C. E. O'Connell-Rodwell, Research Signpost, 9-23.

Zack*, T. I., T. Claverie, and **S.N. Patek**. 2009. Elastic energy storage in the mantis shrimp's fast predatory strike. *Journal of Experimental Biology* 212: 4002-4009. *Feature article*.

Patek, S.N., L. E. Shipp*, and E. Staaterman*. 2009. The acoustics and acoustic behavior of the California spiny lobster (*Panulirus interruptus*). *Journal of the Acoustical Society of America* 125(5): 3434-3443.

Spagna, J.C., A. I. Vakis, C. A. Schmidt, **S. N. Patek**, X. Zhang, N. D. Tsutsui, and A. V. Suarez. 2008. Phylogeny, scaling, and the generation of extreme forces in trap-jaw ants. *Journal of Experimental Biology* 211: 2358-2368.

Patek, S.N., B. N. Nowroozi, J. E. Baio*, R. L. Caldwell and A. P. Summers. 2007. Linkage mechanics and power amplification of the mantis shrimp's raptorial strike. *Journal of Experimental Biology* 210: 3677-3688.

Patek, S.N. and J.E. Baio* (equal authorship). 2007. The acoustic mechanics of stick-slip friction in the California spiny lobster (*Panulirus interruptus*). *Journal of Experimental Biology* 210: 3538-3546. *Feature article*.

Patek, S.N., J.E. Baio*, B. L. Fisher, and A. V. Suarez. 2006. Multifunctionality and mechanical origins: ballistic jaw propulsion in trap-jaw ants. *Proceedings of the National Academy of Sciences* 104(34): 12787-12792.

Patek, S.N. and R. L. Caldwell. 2006. The stomatopod rumble: sound production in *Hemisquilla californiensis*. *Marine and Freshwater Behaviour and Physiology* 39(2): 99-111.

Patek, S.N., R. M. Feldmann, M. Porter and D. Tshudy. 2006. Phylogeny and evolution of lobsters. In: Lobsters: Biology, Management, Aquaculture and Fisheries, ed. B. F. Phillips. Blackwell Publishing.

Patek, S.N. and R. L. Caldwell. 2005. Extreme impact and cavitation forces of a biological hammer: strike forces of the peacock mantis shrimp (*Odontodactylus scyllarus*). *Journal of Experimental Biology* 208: 3655-3664. **Feature article.**

Pringle, A, **S. N. Patek**, M. Fischer, J. Stolze, and N. Money. 2005. The captured launch of a ballistospore. *Mycologia* 97(4): 866-871. **Cover article.**

Patek, S.N., W.L. Korff and R.L. Caldwell. 2004. Deadly strike mechanism of a mantis shrimp. *Nature* 428: 819-820.

McHenry, M.J. and **S.N. Patek**. 2004. The evolution of larval morphology and swimming performance in ascidians. *Evolution* 58(6):1209-1224.

Patek, S.N. and T.H. Oakley. 2003. Comparative tests of evolutionary tradeoffs in a palinurid lobster acoustic system. *Evolution* 57(9): 2082-2100. **Cover article.**

Goldman, J.A. and **S.N. Patek** (*equal authorship*). 2002. Two sniffing strategies in palinurid lobsters. *Journal of Experimental Biology* 205: 3891-3902.

Patek, S.N. 2002. Squeaking with a sliding joint: mechanics and motor control of sound production in spiny lobsters. *Journal of Experimental Biology* 205: 2375-2385.

Patek, S.N. 2001. Spiny lobsters stick and slip to make sound. *Nature* 411: 153-154.

Brainerd, E.L. and **S.N. Patek**. 1998. Vertebral column morphology, C-start curvature, and the evolution of mechanical defenses in tetraodontiform fishes. *Copeia* 1998(4): 971-984.

Colson, D.J., **S.N. Patek**, E.L. Brainerd, S.M. Lewis. 1998. Sound production during feeding in *Hippocampus* seahorses (Syngnathidae). *Environmental Biology of Fishes* 51: 221-229.

Published research performed all or in part in my lab:

deVries⁺, M.S., B.C. Stock, J. H. Christy, G. R. Goldsmith, and T. E. Dawson. 2016. Specialized morphology corresponds to a generalist diet: linking form and function in smashing mantis shrimp crustaceans. *Oecologia* 182: 429. doi:10.1007/s00442-016-3667-5

Anderson[^], P. S. L., LaCosse, J. and Pankow, M., 2016. Point of impact: the effect of size and speed on puncture mechanics. *Interface Focus* 6:20150111. (*Note that LaCosse was a summer high school teacher fellow in my lab*).

Werth A.J., R. W. Harriss, M. V. Rosario⁺, J. C. George, T. L. Sformo. 2016. Hydration affects the physical and mechanical properties of baleen tissue. *Royal Society Open Science* 3(10).

deVries⁺ M.S., C. M. del Rio, T. S. Tunstall, and T. E. Dawson. 2015. Isotopic incorporation rates and discrimination factors in mantis shrimp crustaceans. *PLOS ONE* 10(4): e0122334.

Clark, C. J. 2008. Fluttering wing feathers produce the flight sounds of male streamertail hummingbirds. *Biology Letters*, 4: 341-344

Clark, C. J. and Feo, T. J. 2008. The Anna's Hummingbird chirps with its tail: a new mechanism of sonation in birds. *Proc. R. Soc. Lond. B.* 275: 955-962

BOOK

Biewener, A. A. and S. N. Patek. *Under contract*. Animal Locomotion 2nd edition. Oxford Animal Biology Series, Oxford University Press.

BOOK REVIEW

Patek, S.N. 2013. Engineering Animals: How Life Works. *Quarterly Review Biology* 88(1): 49-50.

POPULAR SCIENCE WRITING

Patek, S.N. 2016. First-Person: The Benefits of "Strange" Science. *Duke Magazine*, Spring 2016.

PROFESSIONAL AND UNIVERSITY SERVICE

Current service

2017 - Chair, Biomechanics Division, *Society for Integrative and Comparative Biology*

2017 - Monitoring Editor, *Journal of Experimental Biology* (~100 papers/year)

2017 - Associate Editor, *Evolution* (~12 papers/year)

2014 - Director, [Matching Undergraduates to Science and Engineering Research](#) (MUSER), Duke U.

2014 - Director, [Physical Biology of Organisms](#) (regional six-university consortium of scientists, mathematicians and engineers)

2013-2015, 2016-2017 Awards Committee, Biology Dept., Duke U.

2016-2017 Performance Review Committee, Biology Dept., Duke U.

Past service

2010 - 2016 Associate Editor, *Functional Ecology* (~12 papers/year)

2016 Chair/Organizer, regional Society for Integrative and Comparative Biology conference, Duke University.

2015 - 2016 Duke University Marine Lab Director search committee

2015 - 2016 Chair-Elect, Biomechanics Division, *Society for Integrative and Comparative Biology*

2014 - 2016 Editorial Advisory Board, *Journal of Zoology A*

2014 - 2016 Chair, George Bartholomew Award Committee, *Society for Integrative and Comparative Biology*

2014 - 2015 Research Support Infrastructure Committee, Biology Dept., Duke U.

- 2014 - 2015 Chair, Seminar Committee, Biology Dept., Duke U.
 2009 - 2015 Chair, Student Support Committee, *Society for Integrative and Comparative Biology*
 2010-13 George Bartholomew Award Committee, *Society for Integrative and Comparative Biology*
 2010-13 Founder and Coordinator, Biology Undergraduate Research Apprenticeships program (BURA), UMass Amherst
 2013 National Science Foundation Panelist for Integrative Organismal Systems
 2012 Seminar Committee, OEB, UMass Amherst
 2012 Lead coordinator for regional meeting of SICB, UMass Amherst
 2010-12 Chair, Website Committee, Dept. of Biology, UMass Amherst
 2009,10,12 Hiring Priorities Committee, Dept. of Biology, UMass Amherst
 2009-12 Steering Committee, Five College Coastal and Marine Sciences Program
 2011 Moderator, Grand Challenges Workshop, *Society for Integrative and Comparative Biology*
 2010-11 Personnel Committee, Dept. of Biology, UMass Amherst
 2010-11 Steering Committee, Organismic and Evolutionary (OEB) graduate program, UMass Amherst
 2009-11 Research Activities Committee, Dept. of Biology, UMass Amherst
 2009-10 OEB Admissions Committee, UMass Amherst
 2008 Student Support Committee, Society for Integrative and Comparative Biology
 2004,5,9 Judge, *Society for Integrative and Comparative Biology* best student paper award
 2004-8 Advisory Board member for the Biology Scholars Program, Biology Fellows Program, and Biology Transfer Consortium, UC Berkeley
 2007-8 Grants and Awards Committee, UC Berkeley
 2005-7 Faculty co-founder and coordinator, Women in Science graduate group, UC Berkeley
 2005-6 Chair, Graduate Student Faculty Committee, Dept. of Integrative Biology, UC Berkeley
 2006 Faculty Search Committee, Dept. of Integrative Biology, UC Berkeley
 2004-5 Departmental Seminar Coordinator, Dept. of Integrative Biology, UC Berkeley
 2004 Space Committee, Dept. of Integrative Biology, UC Berkeley
 2002-4 Miller Institute for Basic Research in Science symposium committee
 2002 National Science Foundation grant review panelist
 2000 Sigma Xi Sally Hughes-Schrader grant review panelist

Reviewer for the following funding agencies:

France Berkeley Fund

MacArthur Foundation

National Geographic

National Oceanic and Atmospheric Administration

Norwegian Research Council

National Science Foundation

Radcliffe Institute for Advanced Studies

Reviewer for the following journals/presses:

Animal Behavior

American Naturalist

Behavioral Ecology

Behavioural Processes

Biological Journal of the Linnean Society

Biology Letters

BMC Biology

Crustaceana

Current Biology

Frontiers in Zoology

Functional Ecology

Integrative and Comparative Biology

Invertebrate Biology

Hydrobiologia

Journal of the Acoustical Society of America

Journal of Comparative Biochemistry and Physiology
Journal of Crustacean Biology
Journal of Developmental Biology
Journal of Experimental Biology
Journal of Experimental Marine Biology and Ecology
Journal of the Royal Society Interface
Journal of Zoology
Marine and Freshwater Research
Marine Ecology Progress Series
Nature

Nature Communications
Naturwissenschaften
N. Z. Journal of Marine and Freshwater Research
Oxford University Press
Physiological and Biochemical Zoology
Proceedings of the National Academy of Sciences
Science
Sinauer Associates
Yale University Press

INVITED SEMINARS AND LECTURES

- 2017 Whitney Marine Lab, University of Florida, St. Augustine.
 2016 Biology Dept., University of Nebraska, Omaha.
 2016 Biological Collections as a Resource for Technical Innovation, National Museum of Natural History, Washington, DC.
 2016 Schmidt-Nielsen Lecture, Duke University, Durham, NC.
 2016 Duke University Marine Lab, Beaufort, NC.
 2015 Perspectives in Biology symposium, Wake Forest University, Winston-Salem, NC.
 2015 Biology Dept., North Carolina State University, Raleigh.
 2015 Biology and Bioengineering Division, California Institute of Technology, Pasadena.
 2015 Biology Dept., University of California Irvine.
 2014 Biology Dept., University of North Carolina, Chapel Hill.
 2014 World Congress of Biomechanics, Boston, MA.
 2014 Biology Dept., William and Mary College, Williamstown, VA.
 2013 Emergent Design symposium speaker, MIT and U.S. Army, Dedham, MA
 2013 Janelia Research Farm, Ashburn, VA
 2013 Physics Dept., University of Massachusetts, Amherst.
 2013 Symposium speaker, Society for Integrative and Comparative Biology, San Francisco, CA.
 2012 AmeriMech 2012: Mechanics in Biology, Virginia Tech, VA.
 2012 Biology Dept., Dartmouth College, Hanover, NH.
 2012 Biology Dept., Duke University, Durham, NC.
 2012 Hopkins Marine Station, Stanford University, Monterey, CA.
 2011 Friday Harbor Marine Laboratories, University of Washington.
 2011 Dept. of Kinesiology, University of Massachusetts, Amherst.
 2011 Grice Marine Laboratory, Fort Johnson Marine Science seminar series and Darwin Week speaker, Charleston, SC.
 2011 Dept. of Biological Sciences, University of Maryland, Baltimore County.
 2010 Polymer Sciences and Engineering Dept., University of Massachusetts, Amherst.
 2010 Smithsonian Tropical Research Institute, Panama City, Panama.
 2010 Graduate student elected speaker, Ecology, Evolution and Organismal Department, Ohio State University.
 2010 Function and control of elastic systems symposium, Society for Experimental Biology, Prague, Czech Republic.
 2010 Ecology and Evolution Department, Brown University, Providence, RI.
 2010 Biology Department, Mt. Holyoke College, MA.
 2009 Biology Department, University of Rochester, NY.

- 2009 James Franck Institute, University of Chicago, IL.
- 2009 Sigma Xi plenary speaker, St. Joseph's University, Philadelphia, PA.
- 2009 Radcliffe Institute for Advanced Study, Harvard University, MA.
- 2008 Concord Field Station, Harvard University, MA.
- 2008 Bartholomew Award Lecture, Society for Integrative and Comparative Biology, San Antonio, TX.
- 2008 Biology Department, University of Massachusetts, Amherst.
- 2008 Biology Department, Wellesley College, Wellesley, MA.
- 2007 Max Planck Institute, Evolutionary Biomaterials Group, Stuttgart, Germany.
- 2006 Organismic and Evolutionary Biology Department, Harvard University.
- 2006 Scripps Institute of Oceanography, UC San Diego, La Jolla, CA.
- 2006 Center for Computer Research in Music and Acoustics, Stanford University.
- 2006 Romberg Tiburon Marine Laboratory, San Francisco State University.
- 2005 Bodega Marine Laboratories, University of California, Davis.
- 2005 Monterey Bay Aquarium Research Institute, California.
- 2004 Friday Harbor Marine Labs, Friday Harbor, Washington.
- 2004 Evolution and Ecology Department, University of California, Davis.
- 2004 Biology Department, University of California, Irvine.
- 2003 Bioengineering Department, California Institute of Technology, Pasadena.
- 2003 Miller Institute for Basic Research in Science, University of California, Berkeley.
- 2003 Department of Integrative Biology, University of California, Berkeley.
- 2003 Biology Department, University of North Carolina, Chapel Hill.
- 2003 Moss Landing Marine Laboratories, Moss Landing, CA.
- 2001 Biology Department, Duke University, Durham, NC.
- 2001 Department of Integrative Biology, University of California, Berkeley.
- 2001 Neurobiology and Behavior Group, Cornell University, Ithaca, NY.
- 2000 Museum of Vertebrate Zoology, University of California, Berkeley.
- 2000 Biomechanics group, University of California, Berkeley.
- 2000 Population Biology Group, University of Virginia, Charlottesville, VA.
- 1999 Marine Biological Laboratories, Woods Hole, MA.

TEACHING EXPERIENCE/RECOGNITIONS

- 2017 Recognition as top 5% of undergraduate instructors for a small class, Trinity College
Office of Assessment, Duke University
- 2014 - How Organisms Move, Duke University
- 2014 - Animal Physiology, Duke University
- 2010-13 Quantitative Systems Biology (Honors math and physics-based Introductory Biology
laboratory and lecture course), UMass Amherst.
- 2012 How Organisms Move (undergraduate biomechanics course with R computer
programming), UMass Amherst
- 2009 Ecological Physiology, OEB graduate core course (one week), UMass Amherst
- 2008 Invertebrate Zoology, UC Berkeley.
- 2005,6,8 Biomechanics Seminar, UC Berkeley.
- 2006-7 Presidential Chair Fellow for undergraduate education, UC Berkeley.
- 2005,6 Research Reviews in Animal Behavior, UC Berkeley.
- 2006 Comparative Analyses of Biomechanics, Behavior and Morphology, UC Berkeley.

- 2006 Invertebrate Zoology, UC Berkeley.
 2005 Evolutionary Origins of Animal Communication, UC Berkeley.
 2001 Laboratory Instructor, Animal Physiology, Duke University, Durham, NC.
 1996,7 Teaching Assistant, Animal Physiology, Duke University, Durham, NC.
 1995, 8 Teaching Assistant, Introductory Biology, Duke University, Durham, NC.
 1994 Course Assistant, Ichthyology, Harvard University, Cambridge, MA.

SCIENTIFIC TRAINING AND DEVELOPMENT

Served on 16 qualifying exam committees and 14 PhD committees

Supervised >50 student research projects in my lab, with students continuing on to PhD programs at: U. Southern California, Harvard University, Scripps Institute of Oceanography, University of California Irvine, University of Virginia, University of Miami, and University of Washington, etc.

Current graduate students:

Patrick Green
 Jacob Harrison

Current postdoctoral researchers:

Chi-Yun Kuo, Ph.D., University of Massachusetts Amherst
 Martha Muñoz, Ph.D., Harvard University

Former graduate students:

Suzanne Cox, M.S.M.E., Ph.D., University of Massachusetts Amherst; postdoctoral: Pennsylvania State University
 Maya deVries, Ph.D., University of California Berkeley; postdoctoral: Scripps Institute of Oceanography
 Michael Rosario, M.S., University of Massachusetts Amherst; Ph.D., Duke University; postdoctoral: Brown University

Former postdoctoral researchers:

Phil Anderson, Assistant Professor, University of Illinois Urbana-Champaign
 Thomas Claverie, Assistant Professor, Université Montpellier
 Katsushi Kagaya, Hakubi Fellow, Kyoto University
 Jennifer Taylor, Assistant Professor, Scripps Institute of Oceanography

COLLECTIONS/FIELD/MARINE LABORATORY EXPERIENCE

Smithsonian Tropical Research Institute, Panama (Galeta, Naos and Bocas del Toro).

Smithsonian Institute, Ft. Pierce, Florida.

Wrigley Institute for Environmental Studies, Santa Catalina Island, California.

National Museum of Natural History, Smithsonian Institution, Washington DC.

Lizard Island Research Station, Lizard Island, Great Barrier Reef, Australia.

Gump South Pacific Research Station, Moorea, French Polynesia.

Friday Harbor Marine Laboratories, University of Washington, Friday Harbor, WA.

Okinawa Expo Aquarium, Okinawa, Japan.

Seto Marine Laboratory, Shirahama, Japan.

Harbor Branch Oceanographic Institution, Ft. Pierce, FL.

SELECTED PRESS COVERAGE

- 2017 *New York Times*
- 2016 *Huffington Post, BBC Earth, CBC Daily Planet, KQED Science, Duke's The Standard*
- 2015 *Science 360 News, Discovery Channel, National Geographic News (3x), Daily Planet, Wired (2x), National Geographic Wild, National Geographic Channel*
- 2014 *Discovery News, Daily Planet Discovery Channel Canada, Field Museum (Chicago), Phys.org, National Geographic, The Weather Channel, Popular Mechanics, Discovering Alabama*
- 2013 *Science News for Kids, Wired, The Oatmeal*
- 2012 *NPR Science Friday, Los Angeles Times, Science, 1440 Blog, BBC Wonders of Life, BBC Natural History, Grande Exhibitions, Discovery Channel, NOAA Ocean Today, Deixis Magazine*
- 2011 *National Geographic Television, Science Careers, Science Now, Science News, Live Science, Discovery News, Wired.com, OnEarth magazine, Science Channel, Empirical Zeal, ZDF German television*
- 2010 *Science, The Scientist, "Moments of Impact" television program, PBS Nature; Discovery Channel Canada television program and book section; Catalyst, Australian Broadcasting Corporation; Planetopia; Smithsonian Magazine.*
- 2007-9 *Science, National Geographic Magazine, Earthdance International Environmental Film Festival, Wolphin DVD Magazine, History Channel, National Geographic Television, Ranger Rick, The Helix, YES magazine.*
- 2006 *New York Times; Science; Discover Magazine "Best of the Year" science story; Nature; USA Today; ABC News; CBC; CBS News; CNN; Current Science; Discovery Channel; Houston Chronicle; Los Angeles Times; MSNBC; National Geographic; Newsday; Natural History Magazine; London Daily Telegraph; BBC; New Scientist; Popular Science; Associated Press; San Francisco Chronicle; Smithsonian magazine; Washington Post; Quirks and Quarks.*
- 2005 *BBC Radio series "Rules of Life"; BBC Wildlife Magazine; Highlights for Children; Berkeley Science Review; Sensors Magazine.*
- 2004 *BBC TV Natural History Unit, Animal Camera; New York Times; Discovery Canada, TV science news program; Quirks and Quarks, CBC science news radio; International Design (I.D.) Magazine; Natural History Magazine; AAAS radio; National Wildlife Magazine; Popular Science Magazine; San Francisco Chronicle; Science Daily; USA Today; Washington Post; Daily Californian; Daily Telegraph.*
- 2001-2 *Associated Press Radio; BBC Worldservice, Science in Action; BBC Worldservice, Five Alive; Discovery Canada, TV science news program; Our Ocean World, NOAA funded radio program; National Geographic, Pulse of the Planet; National Public Radio, Weekend All Things Considered; National Public Radio, Living on Earth; National Public Radio, Weekend Edition Saturday; Network of the World, Earth and Space television; Science and Technology News Network; The Herald Sun; London Daily Telegraph; National Wildlife Magazine; Nature's Best; Natural History Magazine; The New York Times; The News and Observer; Science News.*

SCIENTIFIC OUTREACH

- 2017 Plenary Lecture, University Scholars Program, Duke University.
- 2016 Presented a [PBS Newshour Perspective](#) about the value of basic research, aired on national television, >3 million views on Facebook
- 2016 Duke Alumni weekend, “Sounds of the Sea”, Duke Marine Lab.
- 2016 Undergraduate and high school summer research fellowships in the lab, Army Educational Outreach Program, Department of Defense.
- 2016 Outreach lecture, first-year undergraduates, Focus Program, Duke University.
- 2016 NSF Research Experience for Teachers, high school teacher Brooke Sauer conducted research in the lab for the summer.
- 2016 Outreach discussion with the undergraduate diversity research program, Southern California Ecosystems Research Program.
- 2016 pSearch, undergraduate research mentorship presentation, Duke University.
- 2016 Boothbay Marine Sea and Science Center, Outreach lecture, East Boothbay, Maine.
- 2016 Congressional Poster Session and Reception. U.S. Congress, Washington DC.
- 2015-16 High school student school year research mentorship, North Carolina School of Science and Math, Durham, NC.
- 2015 NSF Research Experience for Teachers, high school teacher Jeff LaCosse conducted research in the lab for the summer.
- 2015 High school student summer research mentorship, North Carolina School of Science and Math summer research program, Durham, NC.
- 2015 [TEDx speaker](#), North Carolina School of Science and Math, Durham, NC.
- 2014 NSF Research Experience for Teachers, high school teacher Kelsey Lamanna conducted research in our laboratory during the summer.
- 2014 Outreach lecture, BioCore Symposium for under-represented minority science engagement, Duke University, NC.
- 2014 [“Machine Inside”, Field Museum exhibit](#), Chicago, IL.
- 2014 Outreach lecture, Sigma Xi Headquarters, RTP, NC.
- 2013,2015 Outreach lecture for biophysics students, Duke University, NC.
- 2013 Zoological Education Trust outreach speaker, Guelph, Canada.
- 2013 AAAS Family Days outreach speaker, Boston, MA
- 2013 Smith College lecture for engineering students, Northampton, MA.
- 2013 Science Café outreach speaker, Hadley, MA.
- 2011-13 Outreach lecture for introductory biology students, Amherst College, MA.
- 2012 Science Roundtable, Five College Learning in Retirement. Outreach program about fast movements in biology.
- 2012 [Iridescent Learning unit for the Curiosity Machine](#). Office of Naval Research outreach program for grade schools about engineering and hands-on science principles.
- 2012 NSF Research Experience for Teachers, high school teacher conducted research in our laboratory during the summer.
- 2012 Advisory Panel, Discovery of Sound in the Sea, University of Rhode Island
- 2011 Illg Distinguished Lectureship Outreach lecture, Friday Harbor, WA.
- 2010 BIOTAP seminar, University of Massachusetts Amherst. An outreach lecture to first-year UMass undergraduates.
- 2010 [NYPL LIVE at the New York Public Library](#), New York, New York. A public outreach lecture exploring sound, silence and the deaf experience.

- 2009 Bedford Audubon Society, NY. A public outreach lecture to bring scientific research to general audiences.
- 2009 The Maritime Museum and Aquarium, Göteborg, Sweden. Exhibit on mantis shrimp predatory strikes.
- 2008 Panelist for Women in Academia presentation and discussion, Massachusetts Institute of Technology (MIT). A discussion about strategies for success for women in science.
- 2008 Virginia Aquarium and Marine Science Center in Virginia Beach. Spiny lobster sounds included as part of “soundscape” exhibit.
- 2008 The Sant Ocean Hall, National Museum of Natural History, Washington, DC. Short feature on the mechanism of sound production in spiny lobsters.
- 2007 Biomechanics teaching website for the Society for Integrative and Comparative Biology. Created laboratory exercise for ballistic motion in trap-jaw ants.
- 2007 Tree of Life scientific core contributor. Created website for the spiny lobster (Palinuridae) phylogeny.
- 2007 Morehead Planetarium and Science Center, Chapel Hill, NC. Contributed to exhibit on biodiversity.
- 2007 Science Museum of Minnesota. Contributed images and sound to traveling exhibit, “Wild Music”.
- 2005-6 [Women in Science group for graduate students](#) to discuss career strategies in the life sciences. Dept. of Integrative Biology, UC Berkeley. Faculty co-founder and mentor.
- 2006 Biology Scholars summer fellowship program designed to increase participation and support minority and economically underprivileged undergraduates in biology. Invited lecturer.
- 2006 Understanding Evolution website, University of California Museum of Paleontology. Contributed to segment designed to educate the public about evolutionary origins.
- 2006 Knight New Media Multimedia Reporting Workshop, University of California Berkeley. Worked with science reporters.
- 2006 Cal Day, public research lecture, Berkeley, CA. Invited speaker.
- 2005 The Rules of Life, BBC Natural History Unit Radio, Bristol, UK. Contributed to BBC radio series on animal life cycles and survival.
- 2005 Cal Day, public research lecture, Berkeley, CA.
- 2005 DigiMorph.Org, an online site for 3-D morphology and CT scans, University of Texas at Austin. Contributed images, text and specimen.
- 2005 National Museum of Marine Biology and Aquarium (Taiwan). Contributed materials for exhibit on acoustic behavior of marine animals.
- 2004 [Mainstage TED talk](#), Monterey, CA. Invited speaker.
- 2003 Animal Camera, BBC Natural History Unit, Bristol, UK. Collaborated with BBC television series on the role of new technology in discoveries about organismal biology.
- 2001 Discovery of Sound in the Sea, Office of Marine Programs, University of Rhode Island, Narragansett, RI. Contributed sounds, images and scientific editorial assistance.
- 2001 The Science Museum, London, U.K. Assisted curators in an exhibit on the physics of lobster sound production.
- 2000 Talent Identification Program (TIP), Duke University, Durham, NC. Lecturer for this program which encourages minority high school students to pursue careers in science.
- 2001 Invertebrates computer course, The University of Western Ontario. Contributor to segment on sound production and crustacean behavior.

1998 Scientists in the Classroom, Durham, NC. Lecturer for this local public school science outreach initiative.

PRESENTATIONS AND PUBLISHED ABSTRACTS

- Kisare, S. A., R. L. Crane, and S. N. Patek. 2017. 3-D printed models reveal morphological features that cue mantis shrimp strike locations. Society for Integrative and Comparative Biology, New Orleans, LA.
- Rosario, M. V., G. P. Sutton, S. N. Patek, and G. S. Sawicki. 2017. The springs of time-limited bullfrog jumps and slow-preparation grasshopper legs are tuned to their muscle dynamics. Society for Integrative and Comparative Biology, New Orleans, LA.
- Patek, S. N. and 15 other authors. 2017. Extreme power amplification in biological systems. Society for Integrative and Comparative Biology, New Orleans, LA.
- Crane, R.L., S. S. Kisare, and S. N. Patek. 2017. Strategic strikes: how mantis shrimp crack open different prey. Society for Integrative and Comparative Biology, New Orleans, LA.
- Kuo, C.-Y., A. Ruta, C. Thompson, and S. N. Patek. 2017. Extreme asymmetry in the energy transfer rate of trap-jaw ant mandibles. Society for Integrative and Comparative Biology, New Orleans, LA.
- Muñoz, M. M., P. S. L. Anderson, and S. N. Patek. 2017. Mantis shrimp reveal the evolutionary dynamics of mechanical sensitivity in form-function relationships. Society for Integrative and Comparative Biology, New Orleans, LA.
- Green, P.A. and S. N. Patek. 2017. Mantis shrimp use ritualized sparring as an aggressive signal in escalated contests. Society for Integrative and Comparative Biology, New Orleans, LA.
- Crane, R. C., S.A. Kisare, and S.N. Patek. 2016. Strategic strikes: how mantis shrimp crack open different prey. Western Society of Naturalists, Monterey, CA.
- Green, P.A. and S. N. Patek. 2016. Contest escalation and resolution in sparring mantis shrimp: tests using network analysis. Animal Behavior Society, Columbia, MO.
- Calixte, N., S. N. Patek, T. Duncan, and J. Reynolds. 2015. MUSER: Matching Undergraduates to Science and Engineering Research. AAU Undergraduate STEM Education Initiative Network Conference, St Louis, MO.
- Green, P. A. and S. N. Patek. 2015. Contests with deadly weapons: telson sparring in mantis shrimp (Stomatopoda). Animal Behavior Society, Anchorage, AK.
- Kagaya, K. and S. N. Patek. 2015. Motor control mechanism for shell breaking behavior in mantis shrimp. 86th Annual Meeting of the Zoological Society of Japan, Hokkaido, Japan.
- Anderson, P. S. L., and S. N. Patek. 2015. Mechanical redundancy, mechanical sensitivity and constraint in the evolution of the mantis shrimp raptorial appendage. Society for Integrative and Comparative Biology, West Palm Beach, FL.
- Green, P. A. and S. N. Patek. 2015. Ultrafast weapons in mantis shrimp: winners of fights strike more frequently, not with greater force. Society for Integrative and Comparative Biology, West Palm Beach, FL.
- Crane, R.L. & Patek, S.N. 2015. Where to strike a snail: smashing strategy of mantis shrimp. Society for Integrative and Comparative Biology, West Palm Beach, FL.
- Kagaya, K. and S. N. Patek. 2014. Ultrafast smashing in mantis shrimp: preparatory motor control through spring compression. International Society for Neuroethology, Sapporo, Japan.

- Rosario, M.V. and S. N. Patek. 2014. Multi-level analyses of elastic morphology: the mantis shrimp's spring. Southern Regional Meeting for the Society for Integrative Biology. Chapel Hill, NC.
- Patek, S.N., T. Claverie, M.V. Rosario. 2014. From fast to ultrafast: the evolutionary dynamics of mantis shrimp power amplification. Evolution 2014, Raleigh, NC.
- Green, P. A. and S. N. Patek. 2014. Fighting with ultrafast weapons: mantis shrimp win by striking more frequently. Evolution 2014, Raleigh, NC.
- Anderson, P., and S. N. Patek. 2014. Taking many-to-one to the next level: decoupled evolution in an ultrafast prey capture mechanism. Evolution 2014, Raleigh, NC.
- Cox, S. and S. N. Patek. 2014. Does cavitation limit the speed of mantis shrimp? Society for Integrative and Comparative Biology, Austin, TX.
- Kagaya, K. and S. N. Patek. 2014. Motor control of an ultrafast spring-driven movement in mantis shrimp. Society for Integrative and Comparative Biology, Austin, TX.
- Anderson, P., T. Claverie and S. N. Patek. 2014. Biomechanical tradeoffs in a power-amplified system. Society for Integrative and Comparative Biology, Austin, TX.
- Patek, S.N., M.S. deVries, E. A. K. Murphy. 2013. What is fast? Society for Integrative and Comparative Biology, San Francisco, CA.
- Rosario, M.V., E. R. Dumont, and S. N. Patek. 2013. Shrimp springs: how shape affects strength in energy storage. Society for Integrative and Comparative Biology, San Francisco, CA.
- Cox, S.M., Y. Modarres-Sadeghi, and S.N. Patek. 2012. Physical model of the feeding strike of the mantis shrimp. Society for Integrative and Comparative Biology, Charleston, SC.
- Claverie, T. & Patek, S. N. 2011. Modularity and the evolution of fast predatory appendages in mantis shrimp. 2nd International Congress on Invertebrate Morphology, Cambridge, MA.
- Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. 2011. The acoustic ecology of the California mantis shrimp. Acoustic Communication in Animals conference, Ithaca, NY.
- Rosario, M.V., S. N. Patek, and E. R. Dumont. 2011. Comparing elastic energy structures in mantis shrimp using finite element analysis. Society for Integrative and Comparative Biology, Salt Lake City, UT.
- Staaterman, E.R., C. W. Clark, A. J. Gallagher, T. Claverie, M. S. deVries, and S. N. Patek. 2010. The acoustic ecology of the California mantis shrimp. The Effects of Noise on Aquatic Life, Cork, Ireland.
- Patek, S.N., T. Claverie, M. Mendoza Blanco, M. Rosario and J. Taylor. 2010. The power of piercing, pounding shrimp. Society for Experimental Biology, Prague, Czech Republic.
- Claverie, T. and S.N. Patek. 2010. Built for speed: shape, modularity and scaling in the raptorial appendage of mantis shrimp. Society for Experimental Biology, Prague, Czech Republic.
- Staaterman, E.R. and S.N. Patek. 2010. The acoustic ecology of the California mantis shrimp (*Hemisquilla californiensis*). Benthic Ecology meeting, Wilmington, NC.
- Rosario, M.V., J. R.A. Taylor, S.N. Patek. 2010. Probing the evolutionary biomechanics of elastic energy storage in mantis shrimp. Society for Integrative and Comparative Biology, Seattle, WA.
- Mendoza Blanco, M. and S.N. Patek. 2010. Comparative muscle physiology of the mantis shrimp's raptorial appendage. Society for Integrative and Comparative Biology, Seattle, WA.
- Taylor, J.R.A. and S.N. Patek. 2010. Biological punching bags: impact analysis of a mantis shrimp telson. Society for Integrative and Comparative Biology, Seattle, WA.

- Claverie, T., E. Chan and S.N. Patek. 2010. Shape, size and performance of a crustacean predatory appendage. Society for Integrative and Comparative Biology, Seattle, WA.
- Patek, S.N. 2009. Rumbling shrimp and rasping lobsters: vibration in the sea. Waves and Signs low-frequency vibration. Massachusetts Institute of Technology, Cambridge, MA.
- Claverie, T. and S. N. Patek. 2009. Force transmission *versus* speed amplification in a four bar linkage mechanism: counterintuitive results in the mantis shrimp's strike. Society for Integrative and Comparative Biology, Boston, MA.
- Spagna, J. C., S. N. Patek and A. V. Suarez. 2009. Polymorphic trap-jaws: intra- and interspecific scaling of jaw forces in trap-jaw ants. Society for Integrative and Comparative Biology, Boston, MA.
- Zack, T. I., T. Claverie, and S. N. Patek. 2009. Elastic energy storage and the mantis shrimp's powerful predatory strike. Society for Integrative and Comparative Biology, Boston, MA.
- Mendoza Blanco, M. A. and S. N. Patek. 2009. Muscle mechanics in mantis shrimp. Society for Integrative and Comparative Biology, Boston, MA.
- Staaterman, E. R., T. Claverie, S. N. Patek. 2009. Antipredator startle signal of the California spiny lobster (*Panulirus interruptus*). Society for Integrative and Comparative Biology, Boston, MA.
- Andrew, J. M. George, S. Patek and B. Swanson. 2009. Morphological and biomechanical variation in the stomatopod cuticle. Society for Integrative and Comparative Biology, Boston, MA.
- Patek, S. N. 2008. From shrimp hammers to lobster harmonics: evolutionary mechanics of movement and communication in the sea. Society for Integrative and Comparative Biology, San Antonio, Texas.
- Spagna, J.C., S. N. Patek, A. I. Vakis, and A. V. Suarez. 2007. Extreme forces and jaw size variation in trap-jaw ants. Society for Integrative and Comparative Biology, Phoenix, Arizona. Integrative and Comparative Biology 46: E134.
- deVries, M. S. and S. N. Patek, 2007. Spearing kinematics and behavior in mantis shrimp (Stomatopoda). Society for Integrative and Comparative Biology, Phoenix, Arizona. Integrative and Comparative Biology 46: E188.
- Baio, J. E., S. Serafin, and S. N. Patek. 2007. Acoustic mechanics of stick and slip friction in California spiny lobsters (*Panulirus interruptus*). Society for Integrative and Comparative Biology, Phoenix, Arizona. Integrative and Comparative Biology 46: E167.
- Shipp, L. E. and S. N. Patek. 2007. Two sides to sound production: behavior and pulse patterns in spiny lobsters. Society for Integrative and Comparative Biology, Phoenix, Arizona. Integrative and Comparative Biology 46: E250.
- Patek, S.N., J. Baio, B. Fisher, and A. Suarez. 2006. Multifunctionality and mechanical origins: ballistic jaw propulsion in trap-jaw ants. Evolution 2006, Stony Brook, New York.
- Patek, S.N., J. Baio, and A. Summers. 2006. Springs, linkages and latches: a mechanical model of the mantis shrimp's raptorial appendage. Society for Integrative and Comparative Biology, Orlando Florida. Integrative and Comparative Biology 45 (6): 1055.
- Money, N. P., Pringle, A., Patek, S. N., Stolze, J., Fischer, M. 2006. The launch of the ballistospore. Mycological Society of America & American Phytopathological Society Joint Annual Meeting, Québec City,
- Jacinto, R. D., L. Nagle, S. N. Patek, and A. Summers. 2006. Keeping an open mind: investigating poacher skeletal morphology. Society for Integrative and Comparative Biology, Orlando Florida. Integrative and Comparative Biology 45 (6): 1019.

- Money, N., A. Pringle, S. N. Patek, M. Fischer, and J. Stolze. 2006. Rapid discharge of mushroom spores. Society for Integrative and Comparative Biology, Orlando Florida. Integrative and Comparative Biology 45 (6): 1046.
- Van Trump, W. J., S. N. Patek, and M. A. R. Koehl. 2006. The California spiny lobster's runny nose. Society for Integrative and Comparative Biology, Orlando Florida. Integrative and Comparative Biology 45 (6):1205.
- Jacinto, R., L. Nagel, S. N. Patek, and A. P. Summers. 2005. Having an open mind: The unique anatomy of the Rockhead Poacher. American Society of Ichthyologists and Herpetologists, Tampa, Florida.
- Patek, S.N. and R. L. Caldwell. 2004. Snail smashing forces of the peacock mantis shrimp. Society for Integrative and Comparative Biology, San Diego, California.
- Tseng, J. and S. N. Patek. 2004. Looking for trouble: strike response to conspecific body colors in the peacock mantis shrimp. Society for Integrative and Comparative Biology, San Diego, California.
- Patek, S.N., W. Korff, R. Caldwell. 2003. Springy saddles: a new model of energy storage in the mantis shrimp's strike. Society for Integrative and Comparative Biology, New Orleans, LA. Integrative and Comparative Biology 43 (6): 981.
- Patek, S.N. and T.H. Oakley. 2003. Size, space and sound: evolutionary tradeoffs in a lobster communication system. Evolution 2003, Chico, CA.
- Patek, S.N. and J.A. Goldman. 2002. More than one way to sniff: a comparative analysis of palinurid lobster olfaction. Society for Integrative and Comparative Biology, Toronto, Canada. Integrative and Comparative Biology 42 (6): 1292.
- Patek, S.N. 2001. Squeaking with a sliding joint: the origin of sound production in spiny lobsters. Society for Integrative and Comparative Biology, Anaheim, CA.
- Patek, S.N. 1999. "Stick and slip": a novel mechanism of sound production in spiny lobsters (Palinuridae). Society for Integrative and Comparative Biology, Atlanta, GA. American Zoologist 39(5):57A.
- Patek, S.N. 1999. Evolutionary diversification of a sound producing apparatus in spiny lobsters (Palinuridae). Evolution '99, Madison, WI.
- Patek, S.N. 1999. Evolutionary variation of sound-producing morphology in palinurid lobsters. The Crustacean Society, Lafayette, LA.
- Patek, S.N. 1998. Morphological patterns in the diversity of sound producing structures in spiny lobsters (Palinuridae). Society for Integrative and Comparative Biology, Boston, MA. American Zoologist 37(5):128A.
- Patek, S.N., D.J. Colson, E.L. Brainerd, S.M. Lewis. 1996. A mechanism of sound production during feeding in *Hippocampus* seahorses (Syngnathidae). Society for Integrative and Comparative Biology, Albuquerque, NM. American Zoologist 36(5):84A.
- Patek, S.N. and E.L. Brainerd. 1995. Vertebral column morphology and the magnitude of body curvature during C-starts of four coral reef fishes. American Society of Ichthyologists and Herpetologists, Edmonton, Alberta, Canada.