

ABBREVIATED CURRICULUM VITAE

Personal Information

Name: J Scott Turner
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Degrees Conferred

Doctor of Philosophy 1982.

Department of Zoology and Entomology, Colorado State University.

Dissertation title: *The relationship between heat exchange and blood flow in reptiles.*

Advisor: Dr C R Tracy.

Master of Science 1979.

Department of Zoology and Entomology, Colorado State University.

Bachelor of Arts 1976.

College VIII, University of California, Santa Cruz.

Positions Held

Fellow

Stellenbosch Institute for Advanced Study (STIAS). (15 March-31 August 2017)

Visiting Scholar

Department of Earth Sciences. Cambridge University. (January-July 2010.)

Professor

State University of New York, Syracuse, College of Environmental Sciences and Forestry,
Department of Environmental and Forest Biology. 2009-present. .

Associate Professor

State University of New York, Syracuse, College of Environmental Sciences and Forestry,
Department of Environmental and Forest Biology. August 1995 to present.

Assistant Professor

State University of New York, Syracuse, College of Environmental Sciences and Forestry,
Department of Environmental and Forest Biology. November 1990 - August 1995.

Lecturer

University of Bophuthatswana (now University of the Northwest), Department of Biology. 1990.

Research Officer

Roy W Siegfried, Supervisor. Council for Scientific and Industrial Research, Foundation for
Research Development.

University of Cape Town, Percy FitzPatrick Institute of African Ornithology. August 1988 -
December 1989

University of Cape Town Postdoctoral Fellow

Gideon N Louw and Roy W Siegfried, Sponsors: *Thermal Energetics of Avian Incubation*,
University of Cape Town.

University of Cape Town, Department of Zoology and Percy FitzPatrick Institute of African Ornithology. August 1987 - August 1988.

Teaching

Currently taught courses:

Physics of Life. SUNY College of Environmental Science and Forestry. 2011-present
Animal Physiology: Environmental & Ecological, SUNY College of Environmental Science and Forestry. 1997-present. (online)
Biophysical Field Methods. (Hybrid Online / Field course in collaboration with Prof Berry Pinshow, Ben-Gurion University of the Negev, Israel, Dr Gillian Maggs-Kölling, Gobabeb Desert Research and Training Centre, Namibia and Dr Eugene Marais, National Museum of Namibia. 2016.

Publications

Books

- J S Turner.** 2017. *Purpose and Desire. What Makes Something “Alive” and Why Modern Darwinism Fails to Explain It*. HarperOne. San Francisco.
- J S Turner.** 2007. *The Tinkerer’s Accomplice. How Design Emerges from Life Itself*. Harvard University Press. 282 pp.
<http://www.esf.edu/efb/turner/tinkerersaccomplice.html>
- J S Turner.** 2000. *The Extended Organism. The Physiology of Animal-Built Structures*. Harvard University Press, Cambridge, MA. 234 pp.
<http://www.esf.edu/efb/turner/extendedorganism.html>
- J S Turner.** 2007. (Japanese language edition) *The Extended Organism. The Physiology of Animal-Built Structures*. (*Seibutsu ga tsukuru taigai kozo: encho sareta hyogengata no seirigaku*, 生物がつくる〈体外〉構造：延長された表現型の生理学 I). Misuzu Shobo. Translated by Y Shiga and T Fukatsu. 333 pp
- J S Turner.** 2009. (Japanese language edition) *The Tinkerer’s Accomplice. How Design Emerges from Life Itself*. 自己デザインする生命：目次 - 「ユリイカ」. Seidosha.. 312 pp.

Popular articles, book reviews etc. (since 2000)

- J S Turner.** 2014. People. Interview with Scott Turner. *Zygote Quarterly* 8. Winter 2013/2014. pp. 60-71.
- J S Turner.** 2014. Book review: *Comparative Biomechanics: Life’s Physical World*, 2nd edition. Steven Vogel. *American Journal of Physics* 82(3): 531-532.
- J S Turner.** 2012. The thermodynamics of life. Book review. *Work Meets Life . The Integrative Study of Work in Living Systems*. Robert Levin, Simon Laughlin, Christina de la Rocha and Alan Blackwell (eds). 2011. *Metascience* 21 (2): 371-373.
- J S Turner.** 2010. Dirt lungs. *Natural History*. 19 (2): 248.
- J S Turner.** 2008. Signs of design. *The Best American Spiritual Writing of 2008*. Jimmy Carter and Philip Zaleski (ed). Houghton-Mifflin, New York.

- J S Turner.** 2008. *Termites. Friend or Foe?* Pamphlet for the series *Spotlight on Agriculture*. Ministry of Agriculture. Republic of Namibia. In press.
- J S Turner.** 2008. *Nature's awful beauty*. Book review. *Built by Animals. The Natural History of Animal Architecture*. Mike Hansell. *American Scientist*. 96(2): 158-159.
- J S Turner.** 2007. Signs of design. *The Christian Century*. June 12, 2007. Vol 124 No 12. 18-22.
- J S Turner.** 2007. Science by committee? *Focus on Microbiology Education Spring 2007* (<http://www.microbelibrary.org/about/index.asp?bid=1079>).
- J S Turner.** 2007. Why can't we talk about intelligent design? *Chronicle of Higher Education* Volume LIII: Number 20. 19 January 2007. *The Chronicle Review*, Section B: B20
- J S Turner.** 2007. Book review. *Design and Nature III: Comparing Design in Nature with Science and Engineering*. C A Brebbia (ed). *Quarterly Review of Biology*. 82: 265-266.
- J S Turner.** 2006. Book review. *Animal Architecture*. Mike Hansell. *Quarterly Review of Biology*. 81: 183-184.
- J S Turner.** 2005. What are the termite mounds pointing at? *Roan News*. 2005 (1): 25-27.
- J S Turner.** 2004. Book review. *Comparative Biomechanics: Life's Physical World*. Steven Vogel. *Quarterly Review of Biology* 79: 297.
- J S Turner.** 2002. A superorganism's fuzzy boundary. *Natural History* 111 (6). July-August 2002: 62-67.
- J S Turner.** 2002. Saving Darwinism from itself. *The World & I* 17 (7). July 2002: 136-145.
- J S Turner.** 2002. Book review. *Wild Solutions. How Biodiversity is Money in the Bank*. A Beattie and P R Ehrlich. *Quarterly Review of Biology* 77: 85-86.
- J S Turner.** 2002. The termites' dilemma. *Earthwatch Journal*. October 2002: 3.
- J S Turner.** 2001. My publishing adventure. *ESF Today*. Summer 2001: 3.
- J S Turner.** 2000. Termites and other natural teachers. *Chronicle of Higher Education* 3 November 2000: B24.
- J S Turner.** 1996. Does the white ant have a soul? *EarthWatch*. March-April 1996: 34-41.

Review articles (since 2000)

- J S Turner.** 2017. Swarm cognition and swarm construction. Lessons from a social insect master builder. In: J Portugali and E Stolk (eds.) *Complexity, Cognition, Urban Planning and Design*. Springer-Heidelberg.
- J S Turner.** 2016. Semiotics of a superorganism. *Biosemiotics* (in press).

- J S Turner.** 2016. Homeostasis and the physiological dimension of niche construction theory in ecology and evolution. *Evolutionary Ecology*. 30 (2), 203-219.
- J S Turner** and B Pinshow. 2015. Transient-state mechanisms of wind-induced burrow ventilation. *Journal of Experimental Biology* 218 (2): 170-175.
- J S Turner.** 2013. Homeostasis and the forgotten vitalist roots of adaptation. Ch 11 in: *Vitalism and the Scientific Image in Post-Enlightenment Life Science 1800-2010*. . S. Normandin and C. T. Wolfe (eds). Heidelberg, Springer. pp. 271-291.
- J S Turner.** 2013. Superorganisms and superindividuality. The emergence of individuality in a social insect assemblage. In: Frédéric Bouchard and Philippe Huneman (eds). *From Groups to Individuals. Perspectives on Biological Associations and Emerging Individuality*. The Vienna Series in Theoretical Biology. MIT Press. pp 219-241
- J S Turner.** 2013. Biology's second law. Homeostasis, purpose and desire. In: B. G. Henning and A. Scarfe. (eds). *Beyond Mechanism. Putting Life Back into Biology*. Lexington Books/Rowman & Littlefield. pp 183-203
- J S Turner.** 2012. Evolutionary architecture? Some perspectives from biological design. *Architectural Design* 82(2): 28-33.
- Odling-Smee, J and **J S Turner.** 2012. Niche construction theory and human architecture. *Biological Theory* 6 (3): 283-289. DOI 10.1007/s13752-012-0029-3
- J S Turner.** 2011. Termites as models of swarm cognition. *Swarm Intelligence*. 5(1): 19-43
- J S Turner** and R C Soar. 2010. Beyond biomimicry. What termites can tell us about realizing the living building. Chapter 15 in: *Industrialised, Integrated, Intelligent sustainable Construction*. ISBN 978-0-86022-698-7. Ian Wallis, Lesya Bilan, Mike Smith & Abdul Samad Kazi (eds). I3CON/BSRIA. London.. pp 233-248.
- J S Turner** and R C Soar. 2008. Beyond biomimicry. What termites can tell us about realizing the living building. *Proceedings of the First International Conference on Industrialized, Integrated, Intelligent Construction*. Loughborough University, 14-16 May 2008.
- J S Turner.** 2008. Homeostasis, complexity, and the problem of biological design. *Emergence: Complexity and Organization*. 10(2).
http://emergence.org/ECO_site/web-content/ECO_10_2.html.
- J S Turner.** 2007. Homeostasis, complexity, and the problem of biological design. In: Explorations in Complexity Thinking: Pre-Proceedings of the 3rd International Workshop on Complexity and Philosophy. Kurt A Richardson and Paul Cilliers (eds). Stellenbosch, February 2007. ISCE Publishing, Mansfield, MA. Pp 131-147.
- J S Turner**, E Marais, M Vinte, A Mudengi, W L Park. 2006. Termites, water and soils. *Agricola* 16: 40-45.
- J S Turner.** 2006. Termites as mediators of the water economy of arid savanna ecosystems. In: *Dryland Ecohydrology*, Amilcare Porporato and Paolo d'Odorico (eds). Kluwer. Pp. 303-313.

- J S Turner.** 2005. Extended physiology of an insect-built structure. *American Entomologist* 51(1): 36-38.
- J S Turner.** 2004. Gaia, the extended organism and emergent homeostasis. Chapter 5 in *Scientists Debate Gaia: The Next Century*. Stephen H Schneider, James R Miller, Eileen Crist and Penelope J Boston (eds). MIT Press. Cambridge, Massachusetts. pp 57-70. (Contribution to the American Geophysical Union Chapman Conference on Gaia 2000, Valencia, Spain, June 2000.)
- J S Turner.** 2004. Extended phenotypes and extended organisms. *Biology and Philosophy* 19(3): 327-352. (a special issue on the 20th anniversary of the publication of Richard Dawkins' *The Extended Phenotype*.)
- J S Turner.** 2003. Trace fossils and extended organisms: A physiological perspective. *New Interpretations of Complex Trace Fossils: A special volume of Palaeogeography, Palaeoclimatology, Palaeoecology* 192: 15-31.
- J S Turner.** 2002. Maintenance of egg temperature. In: *Avian Incubation: Behaviour, Environment And Evolution*, D C Deeming (ed). Oxford University Press, Oxford. pp 118-142.

Primary Research Articles (since 2000)

- Petersen, K, Paul Bardunias, Nils Napp, Justin Werfel, Radhika Nagpal, and **Scott Turner.** 2015. Arrestant property of recently manipulated soil on *Macrotermes michaelseni* as determined through visual tracking and automatic labeling of individual termite behaviors. *Behavioral Processes*. 116:8-11.
- Ocko, Samuel A, Hunter King, David Andreen, Rupert Soar, J Scott Turner, L Mahadevan. (submitted). Circadian-insolation-powered ventilation of African termite mounds. *Journal of Experimental Biology*.
- Green, Ben, Paul Bardunias, **Scott Turner**, Radhika Nagpal and Justin Werfel. (in press). Excavation and aggregation as organizing factors in de novo construction by mound-building termites. *Proceedings of the Royal Society B*.
- Adams, A. M., E. Marais, **Turner, J. Scott**, Prendini, Lorenzo, Pinshow, Berry. Similar burrow architecture of three arid-zone scorpion species implies similar ecological function. *The Science of Nature* **103**(7): 56-67.
- Brickner-Braun, I, D Zucker-Milwenger, A Braun, **J S Turner**, B Pinshow and P Berliner. 2014. Ventilation of multi-entranced rodent burrows by boundary layer eddies. *Journal of Experimental Biology* **217**: 4141-4148. doi:10.1242/jeb.114231.
- J S Turner** and E Marais. 2007. Observations on annual variation of temperature and moisture in the mound and nest of *Macrotermes michaelseni* in northern Namibia. *Journal of Insect Science* (submitted).
- J S Turner**, E Marais and W L Park. 2007. Mound repair by *Macrotermes michaelseni* mobilizes soil transport from throughout the mound. *Journal of Insect Science* (submitted).
- J S Turner.** 2001. On the mound of *Macrotermes michaelseni* as an organ of respiratory gas exchange. *Physiological and Biochemical Zoology* 74(6): 798-822.

J S Turner. 2000. Architecture and morphogenesis in the mound of *Macrotermes michaelseni* (Sjöstedt) (Isoptera: Termitidae, Macrotermitinae) in northern Namibia. *Cimbebasia* 16: 143-175.

Technical reports

J S Turner. 2006. *Termite-Associated Risks to Velcan Forest Products Arising from a Waste Transfer Facility to be Built and Operated by National Waste Services.* Report in support of expert testimony before the Ontario Municipal Board. Case PL050401.

Media

I have lately been learning media production, mostly as a supplement to my teaching. Most of this may be viewed on the [Media](#) page of my [website](#). These include instructional and other video, photography and music.

I have a YouTube channel. From youtube.com, search on the term “macrotermiteman”
