

Scaling and Distribution Networks

<http://www.santafe.edu/sfi/research/focus/networkDynamics/projects/scalingNetworks.html>

Network Dynamics

Research Focus Area

all pdf links on this page are live

cites from “James H. Brown”

<http://biology.unm.edu/jhbrown/indexpage/Jim%27sCV.htm>

“Geoffrey B. West”

1 West, G.B., J.H. Brown, and B.J. Enquist. 1997. A general model for the origin of allometric scaling laws in biology. *Science* 276:122-126.

http://eeb37.biosci.arizona.edu/~brian/West_Brown_Enquist_1997.pdf

2 West, G.B., J.H. Brown, and B.J. Enquist. 1999. The fourth dimension of life: fractal geometry and allometric scaling of organisms. *Science* 284:167-169.

<http://www.santafe.edu/sfi/education/csss/files02/west2.pdf>

3 Brown, J.H., Gupta, V.K., Li, B-L., Milne, B.T., Restrepo, C., and G.B. West. 2002. The fractal nature of nature: power laws, ecological complexity, and biodiversity. *Proc. Royal Soc. B.* 357:619-626. [download pdf](#)

<http://biology.unm.edu/jhbrown/Published/FractalNatureOfNature.pdf>

4 West, G.B., Brown, J.H., and B.J. Enquist. 2001. A general model for ontogenetic growth. *Nature* 413:628-631. [download pdf](#)

<http://biology.unm.edu/jhbrown/Published/OntogenicGrowth.pdf>

http://www.nature.com/cgi-taf/DynaPage.taf?file=/nature/journal/v413/n6856/full/413628a0_fs.html&content_filetype=pdf

5 West, G.B., Brown, J.H., and B.J. Enquist. 1999. A general model for the structure and allometry of plant vascular systems. *Nature* 400: 664-667.

<http://biology.unm.edu/jhbrown/Published/GeneralModelStructure&Allometry.pdf>

6 Gillooly, J.F., Brown, J.H., West, G.B., Savage, V. M., and E.L. Charnov. 2001. Effects of size and temperature on metabolic rate. *Science* 293:2248-2251. [download pdf](#)

<http://biology.unm.edu/jhbrown/Published/EffectsOfSize.pdf> also see:

<http://biology.unm.edu/jhbrown/Published/EffectsOfSize&TempOnDevTime.pdf>

7 West, G.B., Woodruff, W.H., and J.H. Brown. 2002. Allometric scaling of metabolism from molecules and mitochondria to cells and mammals. *PNAS* 99:2473-2478. [download pdf](#)

<http://biology.unm.edu/jhbrown/Published/AlloScalingMetabolicRateMolecules.pdf>

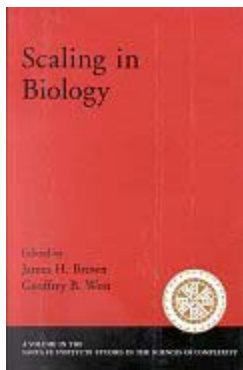
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?rendertype=abstract&artid=128563>

8 Enquist, B.J., J.H. Brown, and G.B. West. 1998. Allometric scaling of plant energetics and population density. *Nature* 395: 163-165.

<http://biology.unm.edu/jhbrown/Published/AllometricScalingPlantEnergetics.pdf>

9 Enquist, B.J., West, G.B., Charnov, E.L., and J.H. Brown. 1999. Allometric scaling of production and life-history variation in vascular plants. *Nature* 401: 907-911.
<http://biology.unm.edu/jhbrown/Published/AllometricScalingProduction.pdf>

<http://biology.unm.edu/jhbrown/Published/Abundance&Distribution.pdf>
<http://biology.unm.edu/jhbrown/Published/AssemblyRules-DesertRodent.pdf>
<http://biology.unm.edu/jhbrown/Published/ClimateAndHerbivory.pdf>
<http://biology.unm.edu/jhbrown/Published/ComplexSpeciesInteractions.pdf>
<http://biology.unm.edu/jhbrown/Published/ConcludingRemark-island biogeography.pdf>
<http://biology.unm.edu/jhbrown/Published/ConstraintsOfSeedSize.pdf>
<http://biology.unm.edu/jhbrown/Published/ConstraintsOnPatterns.pdf>
<http://biology.unm.edu/jhbrown/Published/DelayedCompensation.pdf>
<http://biology.unm.edu/jhbrown/Published/GeographicalEcologyOfSouthAmerican.pdf>
<http://biology.unm.edu/jhbrown/Published/GeographicRange.pdf>
<http://biology.unm.edu/jhbrown/Published/Homeostasis&Compensation.pdf>
<http://biology.unm.edu/jhbrown/Published/LivestockGrazing.pdf>
<http://biology.unm.edu/jhbrown/Published/MammalsOnMountainsides.pdf>
<http://biology.unm.edu/jhbrown/Published/ParadoxOfInvasion.pdf>
<http://biology.unm.edu/jhbrown/Published/PlantCommunity.pdf>
<http://biology.unm.edu/jhbrown/Published/PlantEnergeticsPopDensity.pdf>
<http://biology.unm.edu/jhbrown/Published/RegulationOfDiversity.pdf>
<http://biology.unm.edu/jhbrown/Published/RodentsPlantsPrecipitation.pdf>
<http://biology.unm.edu/jhbrown/Published/SpeciesAsUnits.pdf>



James H. Brown, Geoffrey B. West, editors. *Scaling in Biology*. OUP. 2000

Contents

• [James H. Brown](#), [Geoffrey B. West](#), [Brian J. Enquist](#).
Scaling in Biology: Patterns and Processes, Causes and Consequences
Santa Fe Institute Studies on the Sciences of Complexity. (Paper)

Processes, Causes and Consequences

• [John Tyler Bonner](#), [Henry S. Horn](#).

Allometry and Natural Selection

• [R. McNeill Alexander](#).

Hovering and Jumping: Contrasting Problems in Scaling

• [Andrew A. Biewener](#).

Scaling of Terrestrial Support: Differing Solutions to Mechanical Constraints of Size

• [Mimi A. R. Koehl](#).

Consequences of Size Change During Ontogeny and Evolution

• [Geoffrey B. West](#), [James H. Brown](#), [Brian J. Enquist](#).

The Origin of Universal Scaling Laws in Biology

- [John K-J. Li](#).

Scaling and Invariants in Cardiovascular Biology

- [Mair Zamir](#).

Vascular System of the Human Heart: Some Branching and Scaling Issues

- [Wolfgang Schreiner](#), [Rudolf Karch](#), [Friederike Neumann](#), [Martin Neumann](#).

Constrained Constructive Optimization of Arterial Tree Models

- [Brian J. Enquist](#), [Geoffrey B. West](#), [James H. Brown](#).

Quarter-Power Allometric Scaling in Vascular Plants: Functional Basis and Ecological Consequences

- [Henry S. Horn](#).

Twigs, Trees, and the Dynamics of Carbon in the Landscape

- [Richard E. Lenski](#), [Judith A. Mongold](#).

Cell Size, Shape, and Fitness in Evolving Populations of Bacteria

- [Jan Kozłowski](#).

Does Body Size Optimization Alter the Allometries for Production and Life History Traits?

- [Paul H. Harvey](#).

Why and How Phylogenetic Relationships Should be Incorporated into Studies of Scaling

- [Helene Cyr](#).

Individual Energy Use and the Allometry of Population Density

- [William A. Calder](#).

Diversity and Convergence: Scaling for Conservation

- [John Harte](#).

Scaling and Self-Similarity in Species Distributions: Implications for Extinction, Species Richness, Abundance, and Range