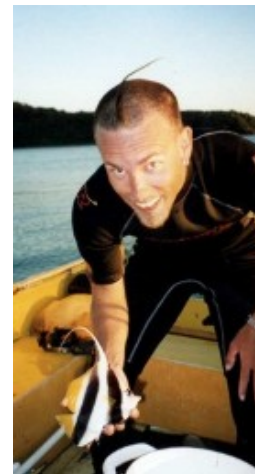


## CURRICULUM VITÆ NICOLAI KONOW, Ph.D.

### Current employment:

**Postdoctoral fellow:** Johns Hopkins University, German lab.  
Department of Physical Medicine & Rehabilitation (S.O.M.),  
98 N. Broadway, Suite 409, Baltimore MD, 21231 USA  
Office: +1 410 502 4463 • Lab: 2 9638 • Fax: 2 4900  
Email: [nkonow@jhmi.edu](mailto:nkonow@jhmi.edu) • Web: <http://www.konow.org>

**Adjunct Assistant Professor, Biology:** Department of Biology,  
Hofstra University, Gittelson Hall Hempstead NY, 11549 USA



### Academic Preparation:

- 09-on **NIH Post-doc.** Roberts Lab, Brown University, USA. *Elastic mechanisms in locomotion.*
- 08-09 **NIH Post-doc.** German Lab, Johns Hopkins University, USA. *Functional specialization and evolution of neuromotor control in mammalian feeding muscles.*
- 06-08 **NSF Post-doc.** Sanford lab, Hofstra University, USA. *Evolutionary physiology of novel feeding mechanisms in osteoglossomorph and salmonid fishes.*
- 00-06 **Ph.D.** Bellwood lab, James Cook University, Australia. *Thesis: The ecomorphology of feeding in Angelfishes, f. Pomacanthidae: functional Innovations in biting reef fishes* [[pdf](#)]
- 97-99 **MSc.** (Cand. Scient. Biol.). Jespersen lab, U. Copenhagen, Denmark. *Thesis: Structural and functional specialisations in deep-sea fish retinae* [[pdf](#)]
- 92-97 **BSc.** in Zoomorphology. Høeg lab, U. Copenhagen, Denmark. *Thesis: Vertebrate evolution and the origin of tetrapods* (in Danish) [[pdf](#)]

### Previous appointments:

- 06-08: **Assistant professor**, Hofstra University: Ecology, Behaviour and Evolution (Bio 14, enrolled: 40 pr. semester); Human Anatomy and Physiology (Bio 103, enrolled: 120 pr. semester), research student training (Bio 90, Bio 91, Bio 190: 12 undergraduate and 4 graduate students).
- 01-04: **Adjunct Lecturer** on 3<sup>rd</sup> year course MB3160 (Biology of reef fishes); covering ecomorphology of feeding in teleost fishes. James Cook University, Australia.
- 01-04: **Adjunct tutoring** in MB3160 (Biology of reef fishes) and MB 2050 (functional zoology) at James Cook University, Australia
- 99-00: **Assistant Lecturer** and laboratory coordinator on BSc. qualifying course in *Zoological Physiology and Morphology*, Dept. of Zoomorphology – U. Copenhagen.
- 98-99: **Assistant Lecturer** and laboratory coordinator on the 3<sup>rd</sup> year graduate course in *Practical Zoological Morphology*, Dept. of Zoomorphology – U. Copenhagen.
- 97-98: **Teaching assistant**, Dept. of Zoomorphology, University of Copenhagen DK. course in *Zoological Physiology and Morphology* (BSc. qualifying course), lecturing on vertebrate eye morphology, emphasising functional specializations in avian, natricine and piscine eyes.

**Research student supervision:** 12 undergraduates (independent) 4 MSc. (co-advised with faculty)

**Teaching experience:** comparative zoological physiology and functional morphology; marine biology & ecology; evolution, ecology & behaviour; vertebrate & invertebrate biology; human anat. and phys.

## Major funding: (amount where awarded, resubmission date otherwise)

2000: Danish National Science Foundation (DNSF), Ph.D. fellowship [642-00-0229]: **225K\$**  
2004: ARC, PGS: *Evolution of diversity in coral reef fishes*, w. L. V. Herwerden et al.(JCU): **35K\$**  
2006: Nat. Geo. Soc. *Grouper suction-feeding* [8153-06] w. Husky (WKU), Rhyne (RWU): **15K\$**  
2009: NIH, *Vagus ligation* [RO1 DC009980-01] CO-PI w. R. Z. German: **1,500K\$**  
2007: DNSF, postdoctoral grant [272-07-0058]: *Evolution of prey-processing* (merituous ranking)  
2008: NIH *Pig Parkinson's model* [RO1] w. German, Thexton, Crompton. (Resubmission mid 2009)  
2008: NSF *Resource-specialisation in Butterflyfishes* [0850739] w. Thorrold, Berumen (WHOI), Pratchett (JCU), Raubenheimer (Massey). (Resubmission Aug. 2009).  
2008: DNSF, postdoctoral grant [272-08-0071]: *XROMM of dynamics in 4-bar linkages* (at Brown) (March & Sept. 2008 submissions, both merituous ranking, 16% funding rate)  
2009: Nat. Geo. Soc. *Fish that feed at break-neck speed*, w. Husky, WKU; Rhyne, RWU (pending).  
In prep: *Biting Reef Fish Nutritional Physiology*, w. Ferry-Graham (MLML), Raubenheimer (Massey).

## Grants, stipends and sponsorships:

2009: Brown University, Bushnell Bursary:	2.000\$
2009: Johns Hopkins University, internal travel grant:	1.000\$
2008: Hofstra University, Deans travel grant:	1.500\$
2008 Hofstra University HCLAS faculty development grant:	1.400\$
2007: Journal of Experimental Biology, SICB symposium funding:	4.075\$
2007: AD instruments, SICB symposium funding:	1.000\$
2007: Grass Electronics, SICB symposium funding:	500\$
2007: SICB, Division of Comp. Biomech. symposium funding:	500\$
2007: Hofstra University HCLAS faculty development grant:	400\$
2006: Hofstra University HCLAS faculty development grant:	500\$
2005: Graduate Research Scheme, JCU: Tearing strength in angelfishes:	1.000\$
2005: PhD Completion Scholarship, JCU:	3.000\$
2004: JCU, DRS International travel award, JCU:	1,500\$
2003: Pixoft – NAC, Movias high-speed motion analysis software:	7,000\$
2001: Sea Pro UK. UW housing for DV video:	1,500\$
2001: Australian Coral Reef Society Fellowship:	2,500\$
00-05: Annual JCU Internal Research Allowance:	9,000\$
1997: Director Einar Hansen and Wife's Scholarship:	3,750\$
1997: Clément's Scholarship, Zoological Institute – Copenhagen:	1,000\$
1997: Prof. Johannes Schmidt's Oceanic Science Scholarship, ZMUC:	2,750\$

## Professional dissemination:

### Peer-reviewed publications (published, in press) names of supervised students in italics:

11. **Konow N**, Ferry-Graham LA (in press). Ecomorphology of Butterflyfishes. Chapter 2 In: *Biology of Butterflyfishes* (Eds. MS Pratchett, M Berumen, BG Kapoor). Science Publishers Inc.
10. Ferry-Graham LA, **Konow N**. (in press). Is an intramandibular joint in *Girella* a mechanism for increased force production? *Journal of Morphology* JMOR-09-0059
9. *Camp AL*, **Konow N**, Sanford CPJ (2009). Functional morphospace of the tongue-bite apparatus in *Chitala ornata* (Notopteridae) and *Salvelinus fontinalis* (Salmonidae). *J. Anat.* 214, 717-728.
8. **Konow N**, Sanford, CPJ (2008). Is a convergently derived muscle-activity pattern driving novel raking behaviours in teleost fishes? *J. Exp. Biol.* 211:989-999.
7. **Konow N**, Sanford CPJ. (2008). Biomechanics of a convergently derived prey-processing mechanism in fishes: evidence from morphology and raking kinematics. *J. Exp. Biol.* 211, 3378-3391.

6. **Konow N**, Wainwright PC, Bellwood DR, Kerr AM (2008). Evolution of novel jaw joints promote trophic diversity in coral reef fishes. *Biol. J. Linn. Soc.* 93: 545-555.
5. **Konow N**, Camp AL, Sanford CPJ (2008). Congruent modulation-patterns in muscle activity and kinematics govern a convergently derived teleosts prey-processing behaviour. *Integr. Comp. Biol.* 48(2):246-260.
4. **Konow N**, Gerry S (2008). Symposium introduction: Electromyography interpretation and limitations in functional analyses of musculoskeletal function. *Integr. Comp. Biol.* 48(2):241-245.
3. **Konow N**, Fitzpatrick R, Barnett A (2006). Adult emperor angelfish (*Pomacanthus imperator*) clean giant sunfishes (*Mola mola*) at Nusa Lembongan, Indonesia. *Coral Reefs* 25: 208.
2. **Konow N**, Bellwood DR (2005) Prey-capture in *Pomacanthus semicirculatus* (Teleostei, Pomacanthidae): functional implications of intramandibular joints in marine angelfishes. *J Exp. Biol* 208:1421-1433.
1. Bellwood DR, van Herwerden L, **Konow N** (2004). Evolution and biogeography of marine angelfishes (Pisces: Pomacanthidae) *Mol. Phylogen. Evol.* 33: 140-155.

**Accepted, in review or in revision:**

Gintof C, **Konow N**, Ross CF, Sanford CPJ (accepted pending revision). Rhythmicity in teleost chewing: a comparison with amniotes. *Journal of Experimental Biology*

**Konow N** & Bellwood DR (accepted pending revision). Functional Disparity and Ecological Diversification in Marine Angelfishes, f. Pomacanthidae. *Journal of Evolutionary Biology*

Bellwood DR, **Konow N**, Herwerden L, Klanten SO (accepted pending revision) Evolutionary History of Butterflyfishes (f. Chaetodontidae): the Rise of Coral Feeding Fishes. *Journal of Evolutionary Biology*.

**Konow N**, Herrel A, Krijestorac B, Sanford CPJ (revised). Nutritional and functional ecology of novel prey processing in the Siamese fighting fish, *Betta splendens*. *J. Comp. Physiol A*.

**Konow N** (in revision). Developmental changes and specialisations in ocular and retinal morphology of *Holtbyrnia anomala* [Kreff] (Teleostei, Argentiniformes). *Acta Zoologica*.

**Konow N**, German RZ, Thexton A, Crompton A (submitted) Regional differences in length-change and electromyographic heterogeneity in the sternohyoid muscle during infant mammalian swallowing *Journal of Applied Physiology*

**For imminent submission, or in various stages of preparation:**

**Konow N**, Wainwright PC (95%). Modulation and coordination-changes with reversal of a functional innovation: the transition from biting to planktivory in *Genicanthus*, f. Pomacanthidae. *J. Exp. Biol.*

**Konow N**, German RZ, Thexton A, Crompton AW (75%). Heterogeneous activity and length-dynamics in mammalian feeding muscles: characteristics of cortical and brainstem motor-control. *J. Appl. Phys.*

Gurevic A, **Konow N**, Sanford CPJ (75%). Evolution of behavioural modulation of prey-processing in osteoglossomorph fishes. *Functional Ecology*

**Konow N**, Wahl S, German RZ, Thexton A, Crompton AW (50%). Heterogeneous activity, regional specialization and behavioural differentiation in mammalian hyoid muscles. *Journal of Physiology*.

**Konow N**, Camp AL, Friedman M, Sanford CPJ. (50%). Evolution of a convergently derived prey-processing mechanism: raking in osteoglossomorph and salmonid fishes. *Systematic Biology*.

Camp AL, **Konow N**, (50%). Functional dynamics in a cranial 4-bar linkage. *Royal Society Interface*.

Riggs M, Huskey S, Rhyne A, **Konow N**. (50%) Ontogenetic scaling of feeding kinematics in Goliath grouper *Epinephelus itajara*. *J. Exp. Biol.*

Gilson E, Houglund M, Huskey S, **Konow N**, Rhyne A. (50%) Modulation of prey-capture behavior in the Goliath grouper *Epinephelus itajara*. *J. Exp. Biol.*

Sanford CPJ, **Konow N**, Luu A, Day S. (50%). Maxillary swing and pressure-generation in *Amia* suction feeding: a test using pressure-transduction and particle image velocimetry. *Royal Society Interface*.

**Konow N**, Herrel A, German RZ et al (25%) Evolution of vertebrate feeding muscle activity and neuromotor control. *Proc. Nat. Acad. Sci.*

**Konow N**, Wainwright PC, Dornburg A, Åbom R, Santini F. (25%). Evolution of morphological diversity in butterflyfishes (f. Chaetodontidae): the origin of biting in reef fishes. *Systematic. Biology*.

**Konow N**, Gintof C, Molina V, Ross CF, Sanford CPJ (in prep). Origin and evolution of proprioception in vertebrate chewing. *Current Biology*.

**Konow N**, (in prep). Integrative electrophysiology; 20 years on from Loeb and Gans. *J. Exp. Zool A*.

### Theses:

**Konow N** (2005). Feeding ecomorphology in angelfishes, f. Pomacanthidae: the implications of functional innovations on prey-dislodgement in biting reef fishes. Ph.D. Thesis, James Cook University, Townsville Australia [[pdf](#)]

**Konow N** (1999). Developmental changes and specialisations in ocular and retinal morphology of *Holtbyrnia anomala* [Kreff] (Teleostei, Argentiniformes) MSc. Thesis, U. Copenhagen DK [[pdf](#)]

**Konow N** (1994). Vertebrate evolution and the origin of the tetrapods BSc. U. Copenhagen DK [[pdf](#)]

### Invited talks, conference presentations and abstracts:

**2009 Brown University**, Ecology and Evolutionary Biology: Innovations and disparity in functional biology

**University of Western Kentucky**, Biology Department: Innovations and disparity in functional biology

**Roger Williams University**, Biology and Aquaculture: Innovations and disparity in functional biology

German RZ, Crompton A, **Konow N**, Thexton A. *Rhythmic tongue movement motor pattern in swallowing*. DRS, New Orleans.

Humbert I, Celnik P, **Konow N**. *Cortical swallowing delay measured using rTMS*. DRS, New Orleans.

Gilson E, Houglund M, Huskey S, **Konow N**, Rhyne A. *Modulation of prey-capture behavior in goliath grouper Epinephelus itajara*. University of Western Kentucky, research day Feb. 21

Riggs M, Huskey S, Rhyne A, **Konow N**. *Scaling of feeding performance in goliath grouper Epinephelus itajara*. University of Western Kentucky, research day Feb. 21

**Konow N**, German RZ, Thexton A, Crompton A. *Muscle function in mammal swallows*. SICB, Boston.

Camp AL, **Konow N**, Sanford CPJ. *Biomechanics of fish prey-processing*. SICB, Boston, Jan 3-7<sup>th</sup>.

Sanford CPJ, **Konow N**, Day S. *The role of maxillary swing in suction feeding*. SICB, Boston, Jan 3-7<sup>th</sup>.

Gintof C, **Konow N**, Sanford CPJ. *Stereotypy in teleost prey-processing*. SICB, Boston, Jan 3-7<sup>th</sup>.

**2008 University of Puerto Rico, Mayaguez**. *Functional innovations in fish feeding* – invited talk Dec. 9<sup>th</sup>.

**Johns Hopkins University, MD**. *Functional Anatomy and Evolution* – invited talk Nov. 28<sup>th</sup>.

**Brown university, RI.** *Biomechanical linkages in complex kinematics* – invited talk Nov. 16<sup>th</sup>.

**Camp AL, Konow N, Sanford CPJ.** *Biomechanics of fish prey-processing.* DVM, Uconn. Oct. 25th

**Sanford CPJ, Konow N, Day S.** *Maxillary swing in suction feeding: a DPIV test.* DVM, Oct. 25th

**Gintof C, Konow N, Sanford CPJ.** *Stereotypy in teleost prey-processing.* DVM, Uconn. Oct. 25th

**Konow N, Camp AL & Sanford CPJ.** *Evolution of raking in teleosts.* ASIH, Montreal, July 24-28.

**Gintof C, Konow N, Ross CF, Sanford CPJ.** *Cyclicality and Stereotypy in Teleost Chewing Compared with Tetrapods.* ASIH, Montreal, July 24-28.

**Konow N & Wainwright PC.** *Planktivory in *Genicanthus* angelfishes (f. Pomacanthidae): Reversal of a functional innovation during transitions between feeding strategies?* ICRS 11, Florida, Jul 7-11.

**Konow N & Gerry S.** **Symposium Introduction;** *interpretation and limitations of EMG in functional analyses of musculoskeletal function.* Late Breaking symposium: SICB, 2008 San Antonio TX.

**Konow N & Sanford CPJ.** *Pros and cons of electromyography in an integrative experimental context.* Late Breaking symposium: EMG interpretation and limitations in functional analyses of musculoskeletal function. SICB, 2008 San Antonio TX.

**2007** **Huskey S, Konow N & Rhyne A.** *Scaling of suction-performance in *Epinephelus itajara*: are Goliath groupers emptying caribbean reefs?* 60th Gulf and Caribbean Fisheries Institute meeting, Punta Cana, Dominican Republic. 5-9 Nov.

**Gurevich A, Konow N, Sanford CPJ.** *Evolution of a Modulated Raking Behavior in Bony-Tongued Fishes (*Osteoglossomorpha*; *Teleostei*).* DVM, RI, Oct. 13.

**Krijestorac B, Konow N, Sanford CPJ.** *Prey-processing in Siamese Fighting fish, *Betta splendens*: evidence of a convergently derived raking behaviour among derived percomorphs?* DVM, RI, Oct. 13.

**Camp AL, Konow N, Sanford CPJ.** *Functional morphospace of the tongue-bite apparatus in *Chitala ornata* (*Notopteridae*) and *Salvelinus fontinalis* (*Salmonidae*).* DVM, RI, Oct. 13.

**Gintof C, Konow N, Ross CF, Sanford CPJ.** *Chewing in Teleost Fishes: Patterns of Stereotypy and Cyclicality Relative to Tetrapod Vertebrates.* DVM, RI, Oct. 13.

**Konow N & Sanford CPJ.** *Convergent and divergent evolutionary patterns in raking, a novel salmonid and osteoglossomorph feeding behaviour* ICVM8, Paris Fr.

**Konow N, Wainwright PC, Bellwood DR, Kerr, AM.** *Intramandibular joints help coral reef fishes have a bite.* ICVM8, Paris Fr.

**Konow N & Sanford CPJ.** *Congruent patterns of muscle activity and kinematics in modulation of a novel feeding mechanism in fishes.* SICB, Phoenix, AZ.

**Konow N, Wainwright PC, Bellwood DR & Kerr AM.** *Intramandibular joints help coral reef fishes have a bite.* SICB, Phoenix, AZ.

**2006** **Konow N & Sanford CPJ.** *Motor-pattern variation in tongue-biting teleosts.* ASIH, New Orleans, MO.

**Konow, N.** *Functional disparity in marine angelfishes, f. Pomacanthidae.* ASIH, New Orleans, MO.

**2005** Indo-Pacific Fish Conference, Taipei - Taiwan: *one platform presentation, one poster presentation.*

**2004** 7th. International Conference for Vertebrate Morphologists - Boca Raton, US: *one platform presentation*

10th. International Coral Reef Society meeting – Okinawa, Japan: *one platform presentation*

## Popular press:

- 2009** Forthcoming: National Geographic Feature length article on NG sponsored Goliath grouper research
- 2008** Research featured on the AD-instruments [website](#).  
Commentary; Newsday, NY: Thresher shark and Lions Mane jellyfish invasions of Long Island waters.
- 2005** April: Ph.D. research featured in the BBC Wildlife Magazine [[jpg](#)]  
April: Ph.D. research featured on Australian Channel Ten's 'Totally Wild' show [[avi](#)].  
Mar: "Inside JEB": Angelfishes take sponge reefs by storm: J Exp Biol 2005 208: [[pdf](#)].

## Research visits and fieldwork activities:

- Jun. 07-Jul. 08: **National Geographic-sponsored work**, with Dr. S. Huskey & Dr. A. Rhyne. *Submerged high-speed video to quantify scaling of suction feeding capability in Goliath Grouper (E. iticara)*.
- Aug. 2007: **University of Antwerpen, Department of Biology, Belgium** with Dr. A. Herrel & Prof. P. Aerts: *Radiociné of hyoid motion in rainbow Oncorhynchus, Betta and small animal EMG techniques*.
- Aug. 2005: **University of Hawaii - Mena, Hawaii Institute of Marine Biology, Oahu - Hawaii** w. Dr. B. Bowen, Dr. R. Pyle & Prof. T. Tricas: *Feeding kinematics in Hawaiian chaetodontids*.
- July 2004: **University of California Davis, USA**. w. Prof. P. C. Wainwright.: *Feeding behavioral modulation*
- Jun. 2004: **Aliwal shoal, Durban - S. Africa**, w. Mr. R. Jackson, ESKOM: *Modulation of prey-capture kinematics in Pomacanthus rhomboides and West Indian Ocean chaetodontoids*.
- May 2004: **University of the Ryukyus, Sesoko Marine Laboratory, Akajima Field Laboratory**, w. Dr. M. Arvedlund: *Olfactory physiology in chaetodontoid fishes*.
- Dec. 2003: **R/V Undersea Explorer**: Cod Hole GBR, Osprey Reef, Coral Sea: *Grouper suction-feeding*
- 2001-2003: **Lizard Island and Orpheus Island Research Stations**, GBR, Australia: *Microhabitat utilisation and prey-capture kinematics of chaetodontoid fishes on the GBR*. 200+ field-days .
- Sept. 2000: **One Tree Island Research Station**, with M. J. Marnane, Collecting chaetodontoid fishes for morphology and physiology analysis, and collecting apogonids for quantification of defecation.
- July 2000: Expeditions with **R/V Harry Messel** and **R/V Lady Basten** (A.I.M.S.) to the outer Great Barrier Reef, collecting chaetodontoid fishes using barrier nets and spear guns.
- Sept. 1997: **MSc. (Cand. Scient.) matriculated**: "*Functional and comparative aspects of retinal morphology in mesopelagic deep-sea, and intertidal marine fishes*". Material obtained from the Greenland Fisheries Board from R/V *Pamiut* and the IOS from R/V *Challenger*.
- Jan.-May 97: **Visiting Researcher**, Dept. Anatomical Sciences, Adelaide University, Australia, with Dr. N. A. Locket. MSc. pilot study: "*Light and Electron microscopy of retinal morphology*".

## Professional affiliations:

Society for Integrative and Comparative Biology  
International Society of Vertebrate Morphologists  
American Association of Anatomists  
Danish Natural History Society

American Society of Ichthyologists and Herpetologists  
Society for Study of Evolution  
International Society for Reef Studies

## Professional service:

**Editor:** Special issue in *J. Exp. Zool. Techniques in electrophysiology: What works and what doesn't?*

**Working group:** *XMA Research Coordination Network*. Brown University, Aug. 8<sup>th</sup> to 10<sup>th</sup>, 2009.

**Working group:** *Analysis and Synthesis of Physiologic Data from the Mammalian Feeding Apparatus*. First NESCent Working-Group, Durham, NC. Feb 25<sup>th</sup>–28<sup>th</sup>, 2009.

**Symposium-convener:** Late-breaking symposium at SICB 2008, San Antonio TX. Symposium title: *Electromyography interpretation and limitations in functional analyses of musculoskeletal function*.

**Referee:** *Evolution, Zoology, Belgian J. Zool., J. Fish Biol., J. Exp. Mar. Biol. Ecol., Aquatic Liv. Res.*

**Editorial Member:** The Danish National Encyclopaedia, Gyldendal Publishing, DK.

Zoological CD-ROM Encyclopaedia, Erlandsen Media Publishing, DK.

## Current collaborators:

A. Thexton (Kings College), A. Crompton (Harvard):	Mammalian feeding muscle activity and function
A. Herrel (M.N.H.N.):	Vertebrate motor control evolution, archerfish spitting
C. Ross (U. Chicago):	Stereotypical and cyclic prey-processing in vertebrates
C. Sanford (Hofstra), S. Day (RIT):	Computational fluid dynamics, feeding and locomotion
P. Wainwright (UC Davis):	Functional innovations in reef fish trophic evolution
B. Brainerd (Brown), M. Westneat (UCI):	XROMM and models of 4-bar linkages in fish feeding
D. Bellwood, L. v. Herwerden (JCU):	Coral reef fish phylogenetics and biogeography
L. Ferry-Graham (MLML):	Biomechanical modelling of intramandibular joints
S. Huskey (WKU), & A. Rhyne (RWU):	Grouper suction feeding, scaling of ram-suction index
D. Raubenheimer (Massey), J. Choat (JCU):	Nutritional physiology and ecology in biting reef fishes
S. Thorrold, M. Berumen (WHOI):	Functional ecology and physiology of butterflyfishes

## Professional and personal referees: (R, research; T, teaching; B, both)

1) <b>Prof. Christopher Sanford (B)</b> Department of Biology Hofstra University <a href="mailto:Biocpj@hofstra.edu">Biocpj@hofstra.edu</a> Tel: +1 (516) 463 5526	2) <b>Prof. Peter C. Wainwright (R)</b> Section of Evolution and Ecology University of California Davis <a href="mailto:pcwainwright@ucdavis.edu">pcwainwright@ucdavis.edu</a> Tel: +1 (530) 752-6782	3) <b>Prof. J. Howard Choat (R)</b> Dept. Marine Biology & Aquaculture James Cook University, Townsville <a href="mailto:john.choat@jcu.edu.au">john.choat@jcu.edu.au</a> Tel: +61 7 4781 6383
4) <b>Prof. Rebecca German (R)</b> Dept. Phys. Med. & Rehabilitation Johns Hopkins University <a href="mailto:rgerman2@jhmi.edu">rgerman2@jhmi.edu</a> Tel: +1 (410) 502 4461	5) <b>Prof. Ronald Sarno (B)</b> Department of Biology Hofstra University <a href="mailto:Ronald.sarno@hofstra.edu">Ronald.sarno@hofstra.edu</a> Tel: +1 (516) 463 4266	6) <b>Prof. Robert (Bob) Seagull (T)</b> Department of Biology Hofstra University <a href="mailto:robert.seagull@hofstra.edu">robert.seagull@hofstra.edu</a> Tel: +1 (516) 463 5516
7) <b>Prof. David R. Bellwood (B)</b> ARC centre of excellence James Cook University <a href="mailto:david.bellwood@jcu.edu.au">david.bellwood@jcu.edu.au</a> Tel: +61 7 4781 4447	8) <b>Prof. Steve Huskey (R)</b> Department of Biology Western Kentucky University <a href="mailto:steve.huskey@wku.edu">steve.huskey@wku.edu</a> Tel: +1 (270) 745 2062	9) <b>Prof. Jens T. Hoeg (B)</b> Institute of Biology University of Copenhagen <a href="mailto:jthoeg@bi.ku.dk">jthoeg@bi.ku.dk</a> Tel: +45 353 212 47

## Technical skills and extracurricular accomplishments

**Equipment and programmes:** high speed video (Photron, Phantom, NAC, Fastec) and motion analysis (TEMA, MOVIAS, ImageJ); sonomicrometry (SonoSoft, PowerLab); electromyography (PowerLab, Biopac, LabView, AutoSignal, Matlab); digital particle image velocimetry and computational fluid dynamics (LaVision, DaVis); pressure transduction (Millar) and force gauge tensiometry (Accuforce); microscopy (T.E.M., S.E.M., D.I.C. & L.M.); parametric and non-parametric statistics (SysStat, Statistica, SigmaStat; SAS); anatomical imaging, technical drawing and graphing (Corel, Adobe); biomechanical modelling (Working model, Rhinoceros, 3ds max, Visual Nastran); geometric morphometrics, skeletal maceration and disarticulation, tissue-clearing and bone/cartilage counter-staining, analyses of gut throughput and contents; gonad histology and maturity-staging; growth assessment techniques, otholith, scale and vertebral sectioning and ageing; molecular phylogenetics; phylogenetic comparative method; field collection, of viable and moribund specimens; field census; aquarium husbandry and larval rearing (fresh/saltwater), angling: W.R. ♂pike (*Esox lucius*, 13.21kg).

**SCUBA:** *occupational* (ADAS I 2299); *recreational* (CMAS\*\*) globally recognised tickets.

**Research diving:** *occupational* 700H+; *recreational* 300H+ (salt, freshwater, overhead environment)

**Aqua Aero safety diver** (HUET) trained armed force personnel in evacuation from submersed aircraft

**Divers Alert Network** First aid, CPR, and oxygen provider, globally recognized provider tickets.

**Shipmaster license:** Australian and American; with international radio-operator's certificate.

**Drivers license:** American (MD), International and Danish Class B.

**Languages:** (ranked by proficiency): Dansk, English, Svensk, Norsk, Espanol, Deutsch.

[Last update, Jan. 02, 2009]