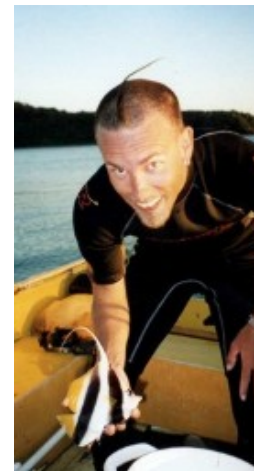


CURRICULUM VITÆ Dr. NICOLAI KONOW, Ph.D.
Danish citizen; US VISA (J1); Green Card Application (pending)

Current employment

Post doc: Johns Hopkins University, German lab (2008-onwards)
Department of Physical Medicine & Rehabilitation (S.O.M.),
98 N. Broadway Suite 409 Baltimore MD, 21231 USA
Office phone: +1-410-502-4463 • Telefax: +1-410-502-4900
Email: nkonow@jhmi.edu • Web: <http://www.konow.org>

Adjunct Assistant Professor of Biology: Hofstra University (2006-onwards).
Department of Biology, 114 Hofstra University Hempstead NY, 11549 USA
HU faculty website: http://www.hofstra.edu/Faculty/fac_profiles.cfm?id=154



Education:

- 2008-onwards **NIH Postdoctoral fellow** (German Lab) Johns Hopkins University – Project title: *Evolution of muscle functional specialisation and neuro-motor control in the Craniata.*
- 2006-2008 **NSF Postdoctoral Fellow** (Sanford lab) Hofstra University – Project title: *Functional biology of a novel feeding mechanism in osteoglossomorph and salmonid fishes.*
- 2000-2005 **Ph.D.** (Bellwood lab) James Cook University, Australia - Thesis short title [[pdf](#)]: *Feeding ecomorphology in Angelfishes, f. Pomacanthidae: functional Innovations in biting reef fishes.*
- 1997-1999 **MSc.** Cand Scient. Biol. (Jespersen lab) Dept. Zoomorphology U. Copenhagen, (11/13) cum laude – Thesis short title [[pdf](#)]: *Functional specialisations in deep-sea fish retinae.*
- 1992-1997 **BSc.** In Zoomorphology (Høeg lab) Dept. Zoomorphology U. Copenhagen. – Thesis [[pdf](#)] (in Danish): *Vertebrate evolution and the origin of the Tetrapoda.*

Major funding:

- 2000: Danish National Science Foundation (DNSF), Ph.D. fellowship [642-00-0229]: 225,000\$
- 2007: DNSF, postdoctoral grant [272-07-0058]: Evolution of prey-processing (judged meritorious)
- 2008: DNSF, postdoctoral grant [272-08-0071]: CTX imaging of dynamic 4-bar linkages (March 2008 submission, judged meritorious, resubmitted Sept. 1, 2008).

Grants, stipends and sponsorships:

2008: Hofstra University, Deans travel grant: meeting attendance:	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 attendance funding	500\$
2007: Hofstra University HCLAS faculty development grant.	400\$
2006: Hofstra University HCLAS faculty development grant.	500\$
2006: Nat. Geo. Soc. grant #8153-06 (P.I.: S. Husky, WKU):	15.000\$
2005: Graduate Research Scheme, JCU: Tearing strength in angelfishes	1.000\$
2005: PhD Completion Scholarship, JCU:	3.000\$
2004: ARC, PGS: Evolution of diversity in coral reef fishes: w/ JH Choat, DR Bellwod, L. van Herwerden, A. Kerr, M Pratchett, SO Klanten & M Berumen.	35.000\$
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: Cleménts Scholarship, Zoological Institute – Copenhagen:	1,000\$
1997: Prof. Johannes Schmidt's Oceanic Science Scholarship, ZMUC:	2,750\$

Papers published, in press, accepted: (*names of my student authors are italicised*):

- Konow N**, Sanford CPJ. (in press). Biomechanics of a Convergently Derived Prey-processing Mechanism in Fishes: Evidence from Morphology and Raking Kinematics. *J Exp Biol*. doi:10.1242/jeb.023564.
- Konow N**, Ferry-Graham LA. (in press). Functional Morphology of Butterflyfishes. Ch. 2 In: *Biology of Butterflyfishes* (Eds. MS Pratchett, M Berumen, BG Kapoor). Science Publishers Inc.
- Camp AL**, **Konow N**, Sanford CPJ. (accepted). Functional morphospace of the tongue-bite apparatus in *Chitala ornata* (Notopteridae) and *Salvelinus fontinalis* (Salmonidae). *J. Anat.*
- Konow N**, **Camp AL**, Sanford CPJ. (2008). Congruent modulation-patterns in muscle activity and kinematics govern a convergently derived teleosts prey-processing behaviour. *Integ. Comp. Biol.* doi:10.1093/icb/icn045.
- Konow N**, Gerry S (2008). Symposium introduction: Electromyography interpretation and limitations in functional analyses of musculoskeletal function. *Integ. Comp. Biol.* doi10.1093-icb-icn016.
- 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.
- 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.
- 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.
- 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.
- Bellwood DR, Herwerden Lv, **Konow N.** (2004). Evolution and biogeography of marine angelfishes (Pisces: Pomacanthidae) *Mol. Phylogen. Evol.* 33: 140-155.

Manuscripts in review, revision or for imminent submission:

- Bellwood DR, **Konow N**, Herwerden Lv, Klanten SO (in review) Evolutionary History of the Butterflyfishes (f. Chaetodontidae): the Rise of Coral Feeding Fishes. *Syst. Biol. USYB-2008-151*
- Konow N**, Herrel A, *Krijestorac B*, Sanford CPJ (in review) A novel feeding behaviour in the worlds most valuable aquarium fish, the Siamese fighting fish (*Betta splendens*). *RSPB-2008-1333*
- Konow N**, Bellwood DR (submitted) Functional Disparity and Ecological Diversification in Marine Angelfishes, f. Pomacanthidae. *Evolution.*
- Konow N** (in revision) Developmental changes and specialisations in ocular and retinal morphology of the Platyroctid *Holtbyrnia anomala* [Krefft, 1980] (Teleostei, Argentiniformes). *Acta Zool.*
- Huskey S, **Konow N**, Rhyne A (in review) Scaling of suction-performance in *Epinephelus itajara*: are Goliath groupers depleting their home reefs? *Endangered species research.*
- Ferry-Graham LA, **Konow N**, Vasquez, JA (in prep) The intramandibular joint in *Girella*: A mechanism for increased force production? *Fct. Ecol.* (95%)
- Gintof C**, **Konow N**, Ross CF, Sanford CPJ (in prep) Chewing in Teleost Fishes: Patterns of Stereotypy and Cyclicity compared with the Tetrapoda. *J. Comp. Physiol.* (90%)
- Gurevic A**, **Konow N**, Sanford CPJ (in prep) Evolution of behavioural modulation of prey-processing in osteoglossomorph fishes. *Functional Ecology* (75%)
- Konow N**, Wainwright PC (in prep) Reversal of a functional innovation involved with transitions from biting to planktivory in *Genicanthus*, f. Pomacanthidae. *J. Exp. Biol.* (75%)
- Konow N**, **Gintof C**, **Molina V**, Clendening B, Sanford CPJ (in prep). Muscle spindles in fishes: the origin of chewing proprioception. *Proc. Nat. Acad. Sci.* (50%)
- Konow N**, **Camp AL** (in prep). The dynamics properties of 4-bar linkages. *R. Soc. Interface* (50%)

Conference presentations, abstracts and press:

- 2008** **Konow, N., Camp, AL & Sanford, CPJ.** Evolution of raking in teleosts. ASIH, Montreal, July 24-28.
Gintof, C. Konow, N., Ross, CF. Sanford, CPJ. Cyclicity 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*; Late Breaking symposium: EMG interpretation and limitations in functional analyses of musculoskeletal function. SICB, 2008 San Antonio TX.
Konow, N. Camp, AL. & Sanford, C. P. J. Pros and cons of electromyography in an integrative experimental context. 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, C. P. J. Evolution of a Modulated Raking Behavior in Bony-Tongued Fishes (Osteoglossomorpha; Teleostei). SICB DVM, RI, Oct. 13.
Krijestorac, B., Konow, N., Sanford, C. P. J. Prey-processing in Siamese Fighting fish, *Betta splendens*: evidence of a convergently derived raking behaviour among derived percomorphs? SICB DVM, RI, Oct. 13.
Camp, A. L., Konow, N., Sanford, C. P. J. Functional morphospace of the tongue-bite apparatus in *Chitala ornata* (Notopteridae) and *Salvelinus fontinalis* (Salmonidae). SICB DVM, RI, Oct. 13.
Gintof, C. Konow, N., Ross, C. F., Sanford, C. P. J. Chewing in Teleost Fishes: Patterns of Stereotypy and Cyclicity Relative to Tetrapod Vertebrates. SICB DVM, RI, Oct. 13.
Konow, N. & Sanford, C. P. J. Convergent and divergent evolutionary patterns in raking, a novel salmonid and osteoglossomorph feeding behaviour ICVM8, Paris Fr.
Konow, N. Wainwright, P. C. Bellwood, D. R. Kerr, A. M. Intramandibular joints help coral reef fishes have a bite. ICVM8, Paris Fr.
Konow, N. & Sanford, C. P. J. Congruent patterns of muscle activity and kinematics in modulation of a novel feeding mechanism in fishes. SICB, Phoenix, AZ.
Konow, N. Wainwright, P. C. Bellwood, D. R. Kerr, A. M. Intramandibular joints help coral reef fishes have a bite. SICB, Phoenix, AZ.
- 2006** **Konow, N. & Sanford, C. P. J.** Motor-pattern variation during feeding in tongue-biting teleosts. ASIH, New Orleans, MO.
Konow, N. Functional disparity and ecological diversification in marine angelfishes, f. Pomacanthidae. ASIH, New Orleans, MO.
- 2005** PhD exit seminar (26.08.2005) and dissertation submitted (07.09.2005).
May: Indo-Pacific Fish Conference, Taipei - Taiwan: one 15 min oral paper, one poster presentation.
April: Research featured on Australian Channel Ten's 'Totally Wild' show.
April: Research featured in the BBC Wildlife Magazine [[jpg](#)]
Mar: "Inside JEB" feature: Angelfishes take sponge reefs by storm: J Exp Biol 2005 208: [[pdf](#)]
- 2004** Aug: University of Hawaii - HIMB: Prey-capture eco-morphology in angelfishes (f. Pomacanthidae).
Jun: 7th. International Conference for Vertebrate Morphologists - Boca Raton, US: 20 min oral paper.
May: 10th. International Coral Reef Society meeting – Okinawa, Japan: 15 min oral paper.
May: University of Ryukyu's, Sesoko: Prey-capture eco-morphology in angelfishes (Pomacanthidae).

Teaching

Teaching experience: comparative zoological morphology and physiology; marine biology & ecology; general evolution, ecology & behaviour; vertebrate & invertebrate biology; human A&P.

Research student supervision: Whilst at Hofstra University: 12 undergraduates, 4 MSc. (co-advised with HU faculty). Whilst at JCU: 4 undergraduates, 2 MSc. (co-advised with JCU faculty).

Feb 2006 - **Assistant professor in Biology**, Hofstra University: courses; Ecology, Behaviour and Evolution (Bio 14); Human Anatomy and Physiology (Bio 103), research student training (Bio 90, Bio 91, Bio 190) involving 12 undergraduate & 4 graduate students.

2001-04: **Adjunct Lecturer** on 3rd year course MB3160 (Biology of reef fishes); covering ecomorphology of feeding in teleost fishes. James Cook University, Australia.

2001-04: **Adjunct tutoring** in MB3160 (Biology of reef fishes) and MB 2050 (functional zoology) at James Cook University, Australia

Jan.-Nov. 2000: **Assistant Lecturer** and laboratory coordinator on BSc. qualifying practical course in *Zoological Morphology and Function*, Dept. of Zoomorphology – U. Copenhagen.

Aug.-Dec. 99: **Assistant Lecturer** and laboratory coordinator on the 3rd year graduate course in *Practical Zoological Morphology*, Dept. of Zoomorphology – U. Copenhagen.

Mar.- May 98: **Assistant Lecturer** in Dept. of Zoomorphology, University of Copenhagen DK. Topics: morphology of the vertebrate eye, emphasizing functional specializations of the avian eye during BSc. qualifying course '*Zoological Morphology and Function*', Dept. Zoomorphology - KU.

Research

Research interests:

Evolution; ecomorphology; functional innovations; ecological disparity; motor-control; kinematics; biomechanics; organismal design; lineage-diversification; phylogenetic comparative method.

Research visits and fieldwork

Jun. 2008: (and Jul. 2007) **National Geographic-sponsored work**, UW high-speed videography, with Dr. S. Husky & Dr. A. Rhyne: Scaling of suction feeding in Goliath grouper.

Aug. 2007: **University of Antwerpen, Department of Biology, Belgium** with Dr. A. Herrel & Prof. P. Aerts: *Radiociné of basihyal motion in rainbow trout and small animal EMG techniques.*

Aug. 2005: **University of Hawaii - Menoa, Hawaii Institute of Marine Biology, Oahu - Hawaii** w./ Assoc. Prof. B. Bowen, Dr. R. Pyle & Prof. T. Tricas.: *Hawaiian chaetodontid prey-capture kinematics.*

July 2004: **University of California Davis, USA.** w. Prof. P. C. Wainwright.: *Behavioural modulation in the prey-capture of Genicanthus (Pisces, Pomacanthidae).*

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 Ryukyu's, Sesoko Marine Laboratory, Akajima Field Laboratory,** Ryukyu – Japan. w. Dr. M. Arvedlund.: *Olfactory physiology in adult 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.* c. 200 field-days accumulated.

Research visits and fieldwork, continued

- Sept. 2000: **One Tree Island Research Station**. Collecting chaetodontoid fishes for video and morphological analysis, and apogonids for defecation quantification (with M. J. Marnane).
- July 2000: Three 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.
- May 97: **Kangaroo Island**, SA, AU.: Radiotelemetry on Echidna *Tachyglossus aculeatus* and Sand Monitor *Varanus goldii* populations. W. Dr's P. Rismiller & M. McKilney.
- Sept. 1997: **MSc. (Cand. Scient.) matriculated**: "*Functional and comparative aspects of retinal morphology in mesopelagic deep-sea, and intertidal marine fishes*". Material collected with the Greenland Fisheries Board from R/V *Pamiut* and the IOS from R/V *Challenger*.
- Jan.-May 97: **Visiting Researcher**, Dept. of Anatomical Sciences, Adelaide University, Australia, with Dr. N. A. Locket. MSc. pilot study entitled: "*Light and Electron microscopy of comparative functional retinal morphology in the mesopelagic deep-sea Searsidae, and the intertidal marine Syngathidae*".

Current collaborators:

- C. F. Ross:** Stereotypical and cyclic prey-processing in vertebrates
- A. Herrel:** Archerfish spitting, high-speed X-ray of prey-processing
- C. Sanford:** DPIV; gymnotiform/ amiiform swimming, suction feeding
- P. C. Wainwright:** Functional innovations in reef fish trophic evolution
- B. Brainerd N. Gidmark:** CTX-imaging and FEA of 4-bar linkages in prey-processing
- DR Bellwood & L. v. Herwerden:** Coral reef fish phylogenetics and biogeography
- LA Ferry-Graham & MW Westneat:** biomechanical modelling of biting intramandibular joints
- S. Huskey, & A. Rhyne:** Suction production and ram-suction index scaling in Jewfish.

Personal referees:

- | | | |
|---|--|---|
| 1) Prof. J. Howard Choat
Dept. Marine Biology & Aquaculture
James Cook University, Townsville.
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Tel: +61 7 4781 6383 | 2) Prof. Steve Huskey
Department of Biology
Western Kentucky University
steve.huskey@wku.edu
Tel: +1 270-745-2062 | 3) Prof. Peter C. Wainwright
Section of Evolution and Ecology
University of California Davis
pcwainwright@ucdavis.edu
Tel: +1 (530) 752-6782 |
| 4) Prof. Christopher Sanford
Department of Biology,
Hofstra University
Christopher.sanford@hofstra.edu
Tel: +1 516 463 5526 | 5) Prof. Jens T. Hoeg
Institute of Biology
University of Copenhagen
jthoeg@bi.ku.dk
Tel: +45 353 212 47 | 6) Prof. Rebecca German
Dept. Physical Medicine & Rehab.
Johns Hopkins University
rgerman2@gw.johnshopkins.edu
Tel: +1 (410) 502 2429 |
| 7) Prof. David R. Bellwood
ARC centre of excellence, Coral reef
research at James Cook University.
david.bellwood@jcu.edu.au
Tel: +61 7 4781 4447 | 8) Prof. Bob Seagull (chair)
Department of Biology
Hofstra University
robert.seagull@hofstra.edu
Tel: +1 516 463 5516 | 9) Prof. Reinhardt M. Kristensen
Danish Natural History Museum
University of Copenhagen
rmkristensen@snm.ku.dk
Tel: +45 353 211 18 |

Professional service:

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

Referee: *Zoology, Belgian J. Zoology, J. Fish Biol., J. Exp. Mar. Biol. Ecol., Aquatic Living Res.*

Freelance author: Zoological CD-ROM Encyclopaedias, Erlandsen Media Publishing. DK.

Editorial Board Member: the Danish National Encyclopaedia, Gyldendal Publishing, DK; 1995-97.

Professional affiliations:

Society for Integrative and Comparative Biology

American Association of Anatomists

International Society of Vertebrate Morphologists

International Society for Reef Studies

American Society of Ichthyologists and Herpetologists

Danish Natural History Society

Research skills and extracurricular accomplishments

Techniques (equipment/programmes): high speed video (Photron, NAC, Fastec cameras) and motion analysis (TEMA, MOVIAS, ImageJ); sonomicrometry (SonoSoft, PowerLab); electromyography (PowerLab, Biopac, AutoSignal, Corr); 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 disarticulation and maceration, tissue-clearing and bone/cartilage counter-staining, analyses of gut throughput and contents; gonad histology and maturity-staging; growth assessment techniques, otolith, scale and vertebral sectioning and ageing; molecular phylogenetic; phylogenetic comparative method; field collection, of viable and moribund specimens; field census; aquarium husbandry and larval rearing (fresh/saltwater), specimen angling: world record-holder for pike (*Esox lucius*, ♂), 13.21kg.

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

Research diving: +600H logged; +300H recreational diving (salt and freshwater, overhead environments). **Aqua Aero safety diver** (HUET) training armed force personnel in evacuation of submersed aircrafts. **Divers Alert Network** 1st aid, CPR, and O₂ globally recognized provider tickets.

Shipmaster license: Australian and American; International radio-operator certificate.

Drivers license: International, Danish and American (MD) Class B driver's licenses.

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

[Last update, Sept. 18, 2008]