Human Frontier Science Program

International Collaboration in Life Sciences Research

Human Frontier Science Program

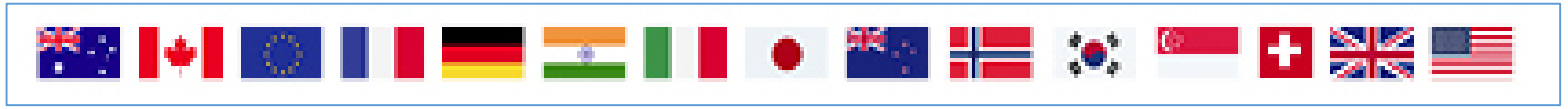
Established in 1989

Supported by:

Australia, Canada, France, Germany, India, Italy, Japan, Republic of Korea, Norway, New Zealand, Singapore, Switzerland, United Kingdom, United States of America and European Commission

Headquarters in Strasbourg, France (www.hfsp.org)

Annual budget: ~ USD 57M



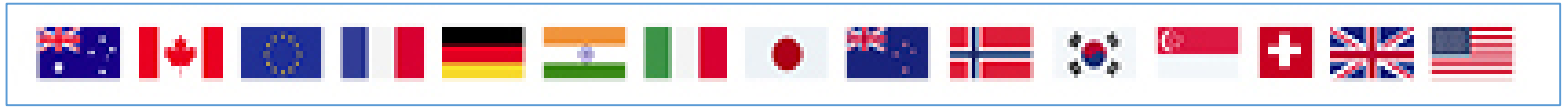
Human Frontier Science Program

HFSPO promotes and funds basic research

- innovative, cutting edge research to extend the frontiers of life sciences
- focused on the elucidation of the sophisticated and complex mechanisms of living organisms

HFSPO attaches the highest importance to

- scientific merit
- internationality (especially intercontinentality) and
- interdisciplinarity



Funding Schemes

Human Frontier Science Program

Research Grants for Intercontinental Teams

- Collaborations to pursue creative, transformative research ideas
  - Young Investigator Grants
  - Program Grants

Postdoctoral Fellowships

- Long Term Fellowships - for the most able postdocs in the life sciences
- Cross Disciplinary Fellowships – for the most able postdocs in non-biological sciences

Career Development Awards

- For recent HFSP Fellows

Research Grants

Summary

(check details at www.hfsp.org)

Research Grants: Objectives

Stimulate novel, daring ideas and innovative approaches

- frontier research on the complex mechanisms of living organisms
- all levels of biological complexity
- preliminary results not required

Develop new lines of research through new interdisciplinary collaborations

Team members from outside the life sciences,

working together on bold, novel, potentially transformative ideas

HFSP Research Grants

Program Grants

- teams of 2-4 scientists (rarely 5)
- international (preferably intercontinental)
- interdisciplinary
- at any stage of careers (often in 30s and 40s)

Young Investigator Grants

- as above, but all team members
- within 5 years of their first independent position
- not more than 10 years after Ph.D.

Deadlines

Letters of intent, mid March

Invited full applications, early September

Research Grants – Key Aspects

Three year grants

Success rate

- ~ 4% of original Letters of Intent are funded, and
- ~ 10% are invited for submitting full applications
- ~ 40% from final review panel meeting

Funding

- 250 kUSD p.a. for a team of 2
- 350 kUSD p.a. for a team of 3
- 450 kUSD p.a. for a team of 4 (max. funds)

Research Grants – Key Aspects

Basic life sciences research

ranging from the molecular and cellular level to complex biological systems including higher cognitive functions and ecosystems

Investigator driven

no specific areas prioritised (the frontiers of life sciences change rapidly)

Emphasis on

participation of scientists from disciplines outside the traditional life sciences

scientists who are early in their careers

Highly competitive

Two Step Selection Process

1. Letter of intent

1. Submission March/April (~900 appl.)
2. Not in scope triaged (~ 10%,)
3. Review by Review Committee members
4. Long short list (~300 most promising applications)discussed at meeting of the Selection Committee (June)
5. Invitations to 80 - 90 to submit full applications (early July)

2. Full applications

1. Submission deadline mid-September
2. Reviewed by up to 6 external reviewers and by Review Committee members
3. Recommendations (~30) made at review committee meeting end of January
4. Approval by Board of Trustees (late March)

Committee members at www.hfsp.org

Developing an Application

Principal investigator must hold laboratory in one of HFSPO's member countries

The team must be:

- international and preferably intercontinental,
- not have collaborated and published previously in this area of enquiry

Preliminary results not required

Developing an Application

Hints on making a strong application

Bring a totally new approach to your research problem

Describe how it is frontier-extending research

- don't shy away from risk though do argue that/how the ideas *can* work

Ensure each investigator is essential

- teams of 2-3 (Young Investigator) and 2 – 4 (Program Grants) are more successful.

Show how the interaction between investigators

Developing an Application

Avoid:

- routine research, “the next logical step”
- applications that can be funded by your national research funding body
- teams composed of existing collaborators
- collaborations within a single country

Postdoctoral Fellowships

Summary

(check details at www.hfsp.org)

Postdoctoral Fellowshps

For top postdoctoral researchers proposing innovative, ground-breaking projects

Long-Term Fellowships

applicants with a biology Ph.D. to embark on a new project in a different field

Cross-Disciplinary Fellowships

Ph.D. from outside the life sciences e.g. physics, chemistry, mathematics, engineering or computer sciences

HFSP Postdoctoral Fellowships

General eligibility criteria

- Work in a new country
  - Citizen of a HFSPO Member? Choose anywhere
  - Not from a Member country? Choose a lab in a Member country.

- Apply within 3 years of Ph.D.

- Must have one first-authorship paper

Conditions & Support

- 3 years
- Living allowances

  amount depends on the country; travel and possibly child and parental leave allowances
- 3rd year
  - can be back in home country
  - can be deferred for up to two years

~80 fellowships per year (success rate ~ 10%.)

Deadlines

- Registration: mid August
- Submission: late August

Developing an Application

A competitive fellowship application proposes a basic research project that

- is creative, frontier, potential to be transformative
- will introduce you to new fields, theory and methodology

Don’t propose a project

- that is only an incremental step forward
- that is a mainstream project in your host’s lab
- in which there is no or minimal change in direction from your current and recent research
- that fails to make clear *your* intellectual contribution

Career Development Award

Available only to former HFSP Long-Term and Cross-Disciplinary Fellows

Career Development Award

For recent HFSP Fellows to:

- return to home country or to a HFSP Member Country
- develop their independent frontier research program

Eligibility:

- Completed at least 2 full years of HFSP Fellowship
- Apply within 3 years after your HFSP Fellowship ends

Conditions & support:

- 300 k USD for 3 years
- For research-related expenses (salaries of students/postdocs, reagents, etc.)
- You must hold a salaried position allowing you to perform independent research
- Success rate: ~16% (10 awards in 2017)
- You can also apply for HFSP Young Investigator Grants and host HFSP Fellows

Out of scope for HFSP

Out of Scope

HFSPO does not support research projects that are:

- Routine, not intellectually challenging, data collecting, observational studies
- Research in for-profit environments (but collaboration possible)
- Applied and translational research, such as :
  - Clinical trials, pharmaceutical development
  - Applied technology or applied engineering
  - Most environmental/ecological or agricultural research (unless about complex basic mechanisms of life)

Award Overview 1990 – 2017

Award Overview 1990 – 2017

Since 1990, HFSPO has supported:

- 7008 scientists throughout the world
- 1059 collaborative Research Grants involving 3902 scientists including 465 early career scientists through Young Investigator Grants
- 3079 postdoctoral Fellowships of ~70 nationalities
- 220 Career Development Awards

Award Overview 1990 – 2017

Previous Research Grant, fellowship and CDA awards

see

http://www.hfsp.org/awardees/awards-archive

Contact

Warwick Anderson, Secretary General

Barbara Pauly, Director of Fellowships

Geoff Richards, Director of Grants

Secretary-General
Prof. Warwick Anderson

Fellowships/Career Development Awards
fellow@hfsp.org

Program/Young Investigator Grants
grant@hfsp.org

Website: ***www.hfsp.org***

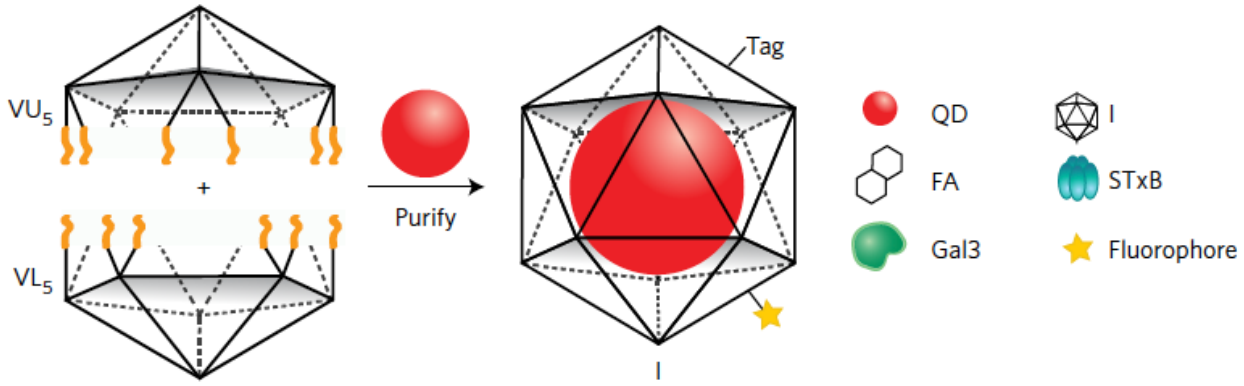
Sign up for HFSP Matters at:
www.hfsp.org/newsletter

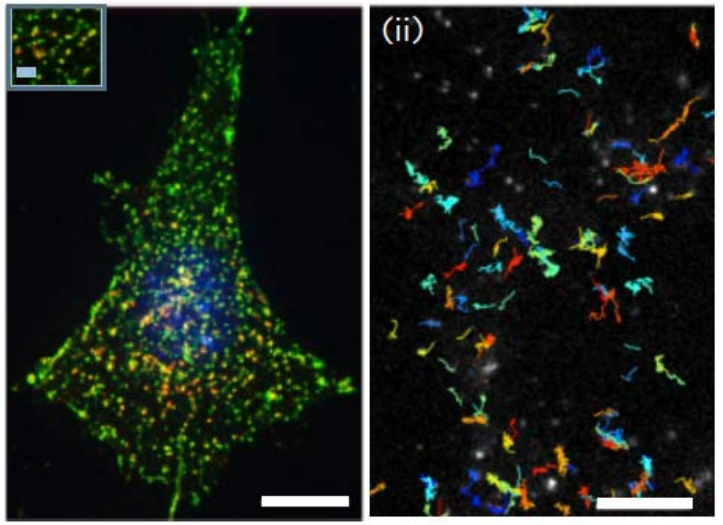
Examples of recent publications

ARTICLES
PUBLISHED ONLINE: 22 AUGUST 2016 | DOI: 10.1038/NNANO.2016.150
nature nanotechnology

Quantum dot-loaded monofunctionalized DNA icosahedra for single-particle tracking of endocytic pathways

Dhiraj Bhatia[1,2], Senthil Arumugam[1], Michel Nasilowski[3], Himanshu Joshi[4], Christian Wunder[1], Valérie Chambon[1], Ved Prakash[2,5], Chloé Grazon[6], Brice Nadal[6], Prabal K. Maiti[4], Ludger Johannes[1]*, Benoit Dubertret[3]* and Yamuna Krishnan[2,5,7]*





Examples

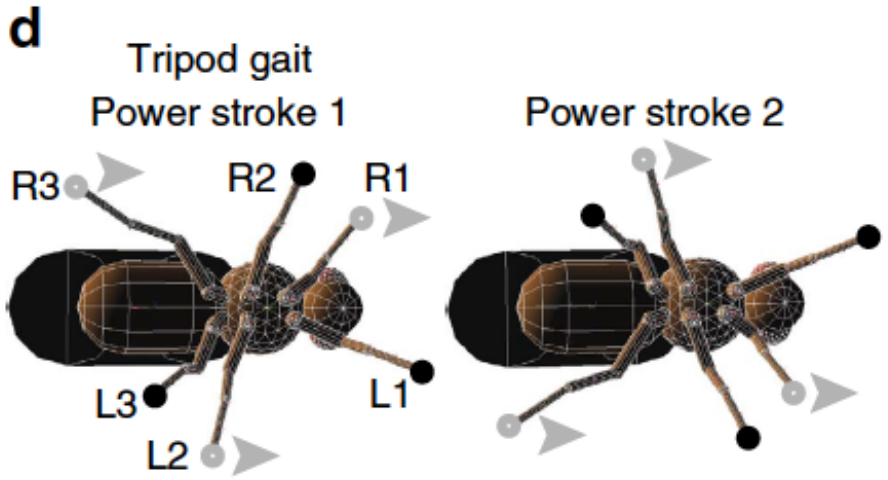
ARTICLE

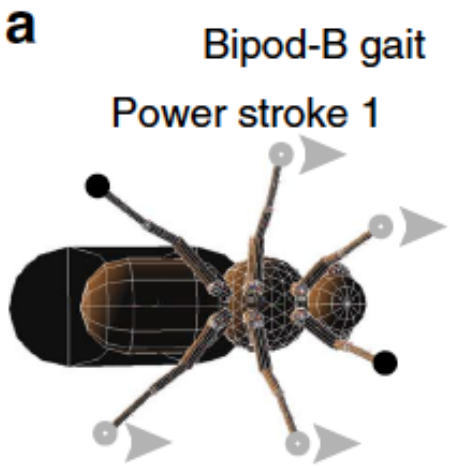
Received 23 Jul 2016 | Accepted 4 Jan 2017 | Published 17 Feb 2017

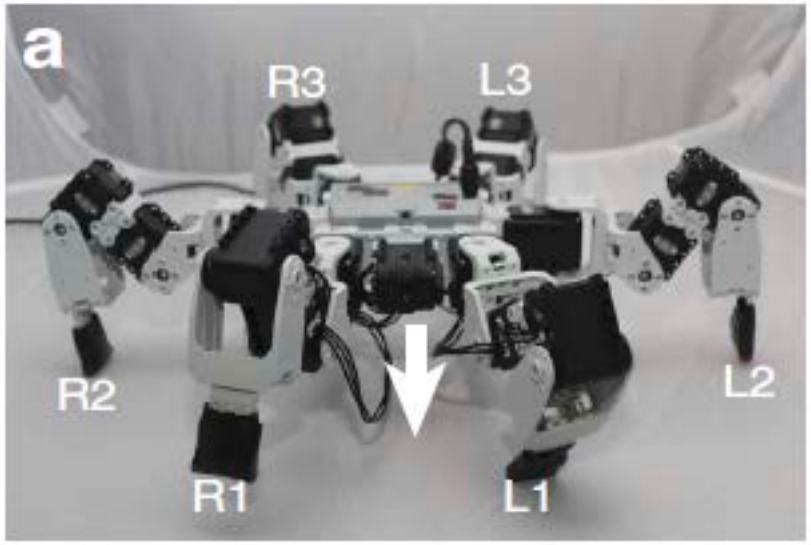
DOI: 10.1038/ncomms14494 OPEN

Climbing favours the tripod gait over alternative faster insect gaits

Pavan Ramdya[1,2,*,†], Robin Thandiackal[3,*], Raphael Cherney[1,†], Thibault Asselborn[1], Richard Benton[2], Auke Jan Ijspeert[3] & Dario Floreano[1]





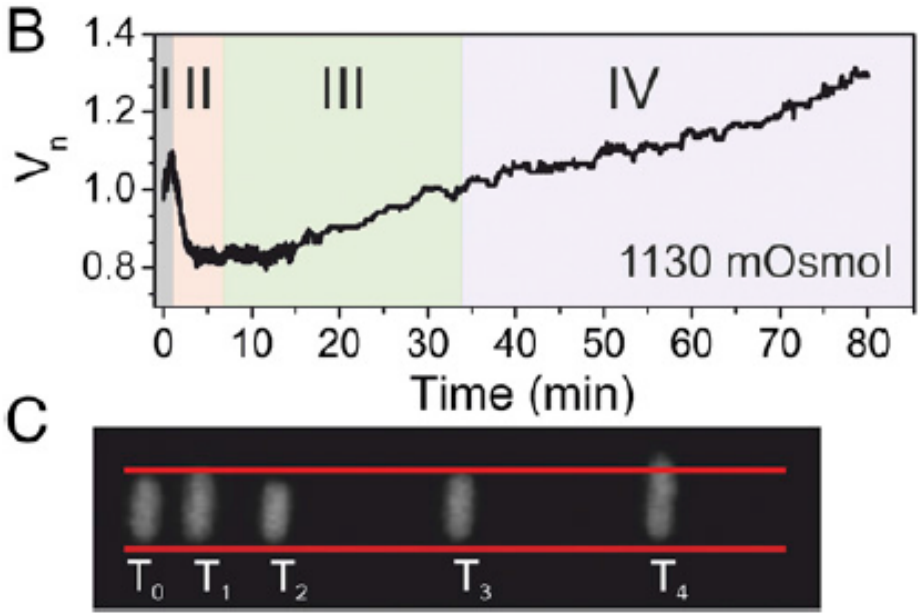


Examples

Dynamics of *Escherichia coli*'s passive response to a sudden decrease in external osmolarity

Renata Buda[a,1,2], Yunxiao Liu (刘云啸)[b,1], Jin Yang (杨津)[b,1], Smitha Hegde[a,1], Keiran Stevenson[a], Fan Bai[b,3], and Teuta Pilizota[a,3]

[a]Centre for Synthetic and Systems Biology, Institute of Cell Biology, School of Biological Sciences, University of Edinburgh, Edinburgh EH9 3FF, United Kingdom; and [b]Biodynamic Optical Imaging Centre (BIOPIC), School of Life Sciences, Peking University, Beijing 100871, China



(2016) *PNAS*. **113**, E5838–E5846