## **ICES SGNARO Report 2005**

ICES Oceanograph Committee
ICES CM 2005/C:13
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# Report of the Steering Group for the ICES/GLOBEC North Atlantic Programme and Regional Office (SGNARO)

By correspondence

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#### 1 Introduction

The international GLOBEC programme, which will end in 2009, remains very active, with many national and regional components undertaking fieldwork, analysis and publication. The Cod and Climate Change (CCC) programme, which is the main activity of the ICES/GLOBEC North Atlantic programme, is completing its first synthesis phase and has begun a new series of workshops and related activities in fulfilment of the action plan set out for the remaining four years. The first synthesis has include the ICES Symposium on "Influence of Climate Change on North Atlantic Fish Stocks" which took place in May 2004 and will be published shortly as a special volume of the ICES Journal of Marine Science as well as the Cooperative Research Report 274 on "Spawning and Life History Information for North Atlantic Cod Stocks", which appeared in spring 2005. The Theme Session on "Cod in a Changing Climate" at the 2005 ASC will hear presentations on 11 chapters from the book with this title, which is being prepared for publication in 2006.

The ICES/GLOBEC office helps to coordinate and facilitate many of the GLOBEC related activities within ICES, including national programmes. The co-ordinator spends a large proportion of time in disseminating experience and results arising from GLOBEC more widely within ICES and beyond, by means of participation in ICES Working and Study Groups, a Newsletter, the website, lectures and a number of writing, programme, steering and review activities.

Funding to maintain the ICES/GLOBEC office remains difficult. North American funding ceased in 2004, but has been largely replaced by European countries. The shortfall on the total required to run the office full-time is around DKK 400,000.

GLOBEC is the main internationally coordinated programme through which marine ecosystem research is currently being funded in the North Atlantic. ICES benefits from attracting scientists working on nationally and regionally funded GLOBEC programmes to its Working Groups, workshops, Theme Sessions and Symposia. The cooperation adds value to both ICES and GLOBEC and helps to maintain the focus of GLOBEC on application in relation to fisheries and marine environmental management.

The Terms of Reference for SGNARO are given in Annex 1.

#### 2 Strategic Goals

The Strategic Goals for the International GLOBEC programme (see Appendix c of ICES CM 2001/C:13) are contained in the GLOBEC Science Plan and the Implementation Plan sets out the means of achieving them. The ICES/GLOBEC Cod and Climate Change programme is the North Atlantic regional component of the Plan.

A revised strategic and action plan (2005–2009) for the Cod and Climate Change programme, was developed by the CCC programme during its annual meeting in 2003 and finalized in 2004. This plan was presented to the International GLOBEC SSC by G. Ottersen at their meeting in Swakopmund, Namibia, in April 2004 (see Appendix c of ICES CM2004/C:13). The committee endorsed the plan, which summarizes the scientific achievements of the CCC programme to date, identifies gaps in knowledge, and proposes an action plan to address these. The main goals of CCC essentially remain the same as those previously identified, although with slightly different emphasis, specifically increased effort on application and presentation of results. A series of action items were put forward to reach these goals and these are evaluated and updated when deemed necessary (see ICES CM 2005/C:11 the report of the WG on Cod and Climate Change for more details).

#### 3 Review of programme and workplan

ICES' members are involved in many GLOBEC related activities, which are brought within the scope of ICES in various ways (planning groups, working groups, workshops, theme sessions, symposia, publications). The principal scientific activities to date have been the Cod and Climate Change programme; zooplankton related work (Working Group on Zooplankton Ecology, Trans-Atlantic Study of Calanus, GLOBEC/PICES/ICES Zooplankton Symposium in 2003); work on pelagic species (herring, sprat, sardine and anchovies) in the Bay of Biscay, North Sea, Baltic and under SPACC (Small Pelagic Fishes and Climate Change).

The ICES Bureau approved the work plan and reports on progress submitted to it in January and June 2005 (Annex 2) and endorsed the initiatives being undertaken to secure future funding for the continuation of the ICES/GLOBEC office.

A detailed review of progress in the Cod and Climate Change programme is included in their report (CM 2005/C:11), which will not be repeated here. The report also includes a section (2.1), which updates progress for the ICES/GLOBEC office.

A short open meeting to review the programme and workplan took place on 22 September 2004 during the ICES ASC in Vigo. G. Ottersen, the incoming Chair of the WG on Cod and Climate Change opened the meeting and welcomed the 20 participants. Ian Perry made a presentation on behalf of the International GLOBEC Scientific Steering Committee, which dealt with five topics currently of concern to the SSC: (i) progress with the synthesis phase (ii) what contributions to knowledge are arising (iii) innovative methodologies and approaches (iv) transfer of knowledge to policy makers, management and the wider community and (v) education and outreach. He asked specifically what the ICES/GLOBEC programme would contribute to the synthesis and how new knowledge would be transferred to policy and management assessments. K. Brander provided an update on progress and future plans for the programme, which included a response to questions posed by I. Perry. B. Rothschild commended the value of the results being obtained from the programme and encouraged the ICES Council to give it their full support and to sustain the ICES/GLOBEC office.

- D. Mountain asked about the relationship between this programme and the new IMBER programme (Integrated Marine Biogeochemistry and Ecosystem Research) and suggested that contacts should be kept open, possibly via A. Bucklin, who is a member of the IMBER SSC. I. Perry suggested that IMBER may be interested in bringing in fisheries management issues as part of its activity on the development of mitigative and adaptive strategies. S. Labonté stressed the importance of making bridges between the science and policy applications of the work within the programme and suggested that these should be given more prominence in reports.
- M. Héral said that the ICES/GLOBEC programme and the office are primarily focussed on cod and that the scope should be widened to include more work on small pelagic fish species, which are dealt with in the GLOBEC SPACC programme. F. Koester agreed that it would be useful to support more involvement of the programme office with ongoing ICES activities on small pelagic fishes.
- P. Wiebe gave information about a workshop to be held early in 2005 to plan a Trans-Atlantic basin scale marine ecosystem study that is expected to provide a basis for greater opportunities for research collaboration and joint activities between European and North American scientists.

#### 4 Future Direction and Scope of the Programme

The principal task of SGNARO is to review and advise on the further evolution of the ICES/GLOBEC North Atlantic Programme and the workplan of the ICES/GLOBEC office,

taking into account (i) the strategic goals for ICES/GLOBEC research and the strategic approach for the ICES/GLOBEC office as agreed by the Council, (ii) developments in the international GLOBEC programme, and (iii) available funding.

Recent changes in available funding have required some changes in priorities for the ICES/GLOBEC office, within the agreed strategy and workplan presented to the Bureau (see Appendix b). These have mainly concerned the assessment of the impacts of climate change on fisheries and the application of science in relation to policy and management. A new contract with DEFRA (UK) has paid for K. Brander to act as Lead Author on fisheries for the IPCC and this work will continue until 2007. A new contract with DIFRES (Denmark) has paid (among other topics) for work on the interrelated impacts of climate and fishing on recruitment and on biodiversity. A new Marie Curie Research Training Network will pay for a post-doctoral fellow to work with K. Brander and H. Sparholt for two years (from May 2006) on fisheries induced adaptive change. A contract will shortly begin with IFREMER (France) which will require increased activity in support of work on small pelagic fish species. A small contract with the German Advisory Council on Climate Change will pay for a report on impact of climate change on fisheries.

#### 5 Strategy for funding

#### 5.1 Current Funding Situation

The direct costs of the Regional Office are currently provided by the UK, Denmark, France and Norway. The DEFRA (UK) funding runs to 1 April 2006 and a proposal for renewal has been invited. Norwegian funding currently runs to the end of 2007. The contracts with Denmark and France are subject to annual renewal, with the prospect of further support for specific parts of the work plan. The EU contract for the Marie Curie Network runs to 2009.

Suggestions for possible funding sources, which may be prepared to consider a proposal to further support the Regional Office and its activities, would be very welcome and should be addressed to K. Brander.

Overall income and expenditure for the ICES/GLOBEC office for the period 2005 and core budget requirements to 2007 are given in Appendix c.

The salary of the Coordinator has remained at 80% since the beginning of 2003.

#### 6 Recommendations

- 1) Delegates of Member states with an active interest in the ICES-GLOBEC initiative are requested to examine the possibility of contributing financially to the office.
- 2) The General Secretary should seek additional external funding to cover the direct costs of maintaining the ICES/GLOBEC office for the period to the end of 2009. If the direct costs of maintaining the programme in its present form (see Appendix c) are adequately covered, additional funding should also be sought in order to support elements of the programme and activities which require extra resources (e.g., particular tasks related to preparation and running of workshops).
- 3) SGNARO should continue to work by correspondence in 2005, with unchanged terms of reference. Membership of SGNARO should include one of the Co-Chairs of WGCCC.

# Annex 1: Terms of reference for the Steering Group (SGNARO)

2CXX The **Steering Group for the ICES/GLOBEC North Atlantic Programme and Regional Office** [SGNARO] (Co-Chairs: K. Drinkwater, Norway, and F. Köster, Denmark) will work by correspondence in 2006, and meet as appropriate at national expense, to:

- a) review and advise on the further evolution of the ICES/GLOBEC North Atlantic Programme and the workplan of the ICES/GLOBEC office, taking into account:
  - i) the strategic goals for ICES/GLOBEC research and the strategic approach for the ICES/GLOBEC office as agreed by the Council,
  - ii) developments in the international GLOBEC programme, and
  - iii) available funding;
- b) review and advise on the action plan of the Working Group on Cod and Climate Change.

SGNARO will report by 31 May 2006 for the attention of the Oceanography Committee and the Bureau.

#### **Supporting Information**

Priority:	The continuing activity of the ICES/GLOBEC programme and of the Regional Office requires an overseeing group, which will also advise on the preparation and submission of funding proposals			
Scientific Justification and relation to Action Plan:	Action Plan: 5.13.2  The ICES/GLOBEC programme is the North Atlantic regional component of the International GLOBEC Implementation Plan. ICES has an MOU with IGBP, SC and IOC to support this programme, and ICES can play a particularly valuable roin the development of GLOBEC internationally, because of its long experience a Application Oriented Organisation and its collective expertise in many aspects of marine ecosystem studies. The Steering Group is particularly needed in order to guide the work of the GLOBEC Regional Office at ICES, whose role is to a) furt the aims to integrate fisheries and environmental information and advice, includit the role of climatic variability and its implications for the dynamics of marine ecosystems, and b) assist with the establishment of a regional and global operation monitoring system (GOOS). The proposals will consider the staffing implications for this work in relation to other existing and new Secretariat work commitments and priorities.			
Resource Requirements:	Very small, as the activity is closely related to ongoing work in WGCCC. This is a Core Activity.			
Participants:	The Group will include the General Secretary, the GLOBEC Coordinator, the Chair of the Oceanography Committee, the Chair of WGCCC, and a representative of the international GLOBEC Scientific Steering Committee, and will be open to participants in the ICES/GLOBEC programme. Member Countries not participating directly in the ICES/GLOBEC programme are also entitled to designate representatives to participate in the work of this Group, should they so choose. SGNARO will work by correspondence, with a meeting during the Statutory Meeting.			
Secretariat Facilities:	5 days per annum for ICES/GLOBEC Coordinator			
Financial:	Income from the proposals which this group will help to prepare will be used to pay for the ICES/GLOBEC Office.			
Linkages To Advisory Committees:	Closely linked to the Advisory Mechanism, in relation to effects of environmental change (including climate change) on fish stocks and the marine ecosystem, ecosystem-based advice.			
Linkages To other Committees or Groups:	Closely linked to WGCCC and its workshops			
Linkages to other Organisations	IGBP, International GLOBEC, GOOS			
Cost Share	ICES:100%			

# Annex 2: Work plan submitted to the ICES Bureau in January 2005 and progress reports in January and June 2005

#### OBJECTIVES AND BACKGROUND

The objective is to coordinate and help to implement the GLOBEC programme within the ICES area. The GLOBEC programme aims to improve forecasts of the responses of the marine ecosytem to physical forcing and global change by developing our understanding of its structure and functioning under varying physical conditions. The research provides the basis for a wider ecosystem approach to issues in fisheries management and environmental protection. Within ICES this will require closer cooperation between physical, chemical and biological oceanographers on the one hand and fisheries and environmental assessment scientists on the other.

GLOBEC is a core project of the IGBP (International Geosphere Biosphere Programme) and is sponsored by the International Oceanographic Commission and the Scientific Committee on Ocean Research. It is the only global change programme in which ICES plays a major part.

The funding of the ICES-GLOBEC office has changed substantially, with the contributions from the US (NSF) and Canada (DFO) coming to an end and new funding contracts being negotiated and signed with Denmark (DIFRES), France (IFREMER), UK (DEFRA – Climate Change) and the EU (Marie Curie Training Network). These changes have affected the overall direction of the work to some extent and will continue to do so. A current proposal to the EU for work related to REGNS seems unlikely to succeed and will curtail the activity of the coordinator in this area. Due to restricted funding the coordinator continues on 80% salary.

#### **TASKS AND TARGETS for 2005**

# Task 1 Implementing the Cod and Climate Change work programme, in fulfilment of the contracts and commitments made with funding bodies

Targets and Milestones:

- 1) Assist with the work of the Cod and Climate Change Working Group. Assist with report due in June 2005 10 days;
- 2) Prepare for and take part in the Workshop on Impact of Zooplankton on Cod Abundance and Production in June 2005. Assist with report and publication 25 days;
- 3) Coordinating, writing and editing the book synthesising results from the Cod and Climate Change programme open ended time requirement;
- 4) Final work preparing the Coop. Res. Rep. on cod life histories for publication 8 days;
- 5) Maintain regular ICES/GLOBEC Newsletter and pages on the WWW –10 days;
- 6) Establish and oversee the new post-doctoral post in the Fisheries Induced Adaptive Change Network. The holder will work on management implications and development of advice under the precautionary approach 20 days;
- 7) Prepare and present paper at ESSAS Symposium in May 10 days;
- 8) Attend author meetings in March and December and prepare first draft of IPCC WG2 chapter on fisheries 20 days;
- 9) Presentation on Fisheries and Climate at Biodiversity Conference, Paris January 2005 6 days;
- 10) Preparing for and convening Theme Session on Cod and Climate Change at ASC 10 days.

# Task 2 Writing proposals for continued funding, preparing reports and accounts, dealing with ad hoc requests for data and information, evaluating papers and research proposals

Targets and Milestones:

- 1. Proposals for new or renewed funding 10 days
- 2. Deal with ad hoc requests for data, information, reviews 10 days
- 3. Developing new aspects of the ICES/GLOBEC programme e.g. on small pelagic fish 15 days
- 4. Steering and review for GLOBEC related programmes. Present talks on North Atlantic GLOBEC programme. 10 days
- 5. Complete and submit papers 5 days

#### **PROGRESS REPORT 2004**

#### OBJECTIVES AND BACKGROUND

The objective is to coordinate and help to implement the GLOBEC programme within the ICES area. The GLOBEC programme aims to improve forecasts of the responses of the marine ecosytem to physical forcing and global change by developing our understanding of its structure and functioning under varying physical conditions. The research provides the basis for a wider ecosystem approach to issues in fisheries management and environmental protection. Within ICES this will require closer cooperation between physical, chemical and biological oceanographers on the one hand and fisheries and environmental assessment scientists on the other.

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## PROGRESS IN 2004 AND CURRENT STATUS OF THE ICES/GLOBEC PROGRAMME OFFICE

Progress in 2004 is tabulated below, with respect to the targets agreed with the Steering Group for the programme and the ICES Bureau. The Cod and Climate programme continues to carry out its rolling five year plan and is now in a synthesis phase.

K. Brander has contributed to work on quantitative indicators of ecosystem change, changes in biodiversity, effects of physical changes on distribution of fish stocks, design of monitoring programmes and climate impact assessments by a number of organisations (SCOR/IOC, IPCC, PICES, ACIA, EEA, GODAE and others), using material derived largely from the Cod and Climate Change programme.

The programme of the ICES/GLOBEC office was reviewed by DEFRA (UK) in Lowestoft in July 2004 as part of a major review of their work in this area. The evaluation was that the "results significantly exceed expectations".

#### TASKS AND TARGETS for 2004

Task 1 Implementing the Cod and Climate Change work programme, in fulfilment of the contracts and commitments made with funding bodies

TARGETS AND MILESTONES:	Progress		
Assist with the work of the Cod and Climate Change Working Group and SGNARO 20 days - reports due in June 2004.	Done CM 2004/C:13 and CM 2004/C:15		
Prepare for and take part in the SGGROMAT meeting in January 2004. 8 days.	Done CM 2004/D:02		
Coordinating, writing and editing a book synthesising results from the Cod and Climate Change programme.	The publication schedule for the book has been set back 6 months due to delays in submission of chapters. It will be the major activity for the first half of 2005		
Compilation of new information on cod life histories, to update Coop. Res. Rep.205	All contributions have been received and edited and are on the website. The final editing and layout is being completed.		
Maintain regular ICES/GLOBEC Newsletter and pages on the WWW	Newsletter #11 produced in September 2004. Website used extensively for preparation of workshops, CRR and book.		
Preparations for the Symposium on Fisheries and Climate Change in May 2004 including writing a paper	Paper presented and in press.		

Task 2 Writing proposals for continued funding, preparing reports and accounts, dealing with ad hoc requests for data and information, evaluating papers and research proposals

TARGETS AND MILESTONES:	Progress
Proposals for new or renewed funding	New or extended funding has been obtained from Norway, UK, Denmark and France. An EU contract for a Marie Curie Network has also been signed, to begin in May 2005
Write paper for and attend Symposium on Quantitative Indicators for Ecosystem Management in March 2004	Paper on effects of climate on cod recruitment will be published in the ICES Journal
Arctic Climate Impacts Assessment	The report has been completed and page-proofs have been corrected
Deal with ad hoc requests for data and information - 35 days per year.	Numerous requests dealt with. Several articles have appeared in the press.
Steering and review for UK GLOBEC, German GLOBEC, French GLOBEC, Norwegian Research Council. Talks on North Atlantic GLOBEC programme.	Numerous reviews, meetings and talks, including lecture on Danish PhD course. Reviewed PICES report on Regime Shifts.

In addition to the progress tabulated above, K. Brander produced two scientific papers (listed below) on the work carried out within the Cod and Climate Change programme and his own research interests. K. Brander is in his sixth year as President of SAHFOS.

K. Brander contributed to the European Environment Agency report on "Impacts of Europe's changing climate", which was published recently and to the ICES advice to the EU on defining "ecoregions". He gave an invited talk to European Commission staff (DGXIV) on "Biological production in the sea".

The "zero-order" draft for chapter 5 of the ongoing IPCC Fourth Assessment was completed in December 2004. The coordinator is Lead Author on fisheries. A proposal to MARBEF to assist this work, by establishing a web-based information exchange on biodiversity has been accepted. A contract for additional support for travel and meeting preparation and costs has been signed with DEFRA (UK).

The coordinator has set up a website for the ICES Regional Assessment Group for the North Sea (REGNS) and has begun to prepare datasets for the workshop in May 2005. He is liaising with colleagues in Canada and the US over methodology for integrated ecosystem assessments

and their participation at the workshop. A funding proposal (Specific Support Action) for REGNS has been submitted to the EU and includes an element to pay for the coordinators time on this work.

Liaison with the GODAE programme on application of operational oceanographic data assimilation models was established at their Symposium in St Petersburg, Florida in November). The coordinator convened one of their break-out groups (Brad de Young, Canada) and gave one of the opening plenary talks. Potential pilot projects with links to fisheries were identified.

#### **Publications in 2004:**

Brander K.M and Mohn R. (2004) Effect of the North Atlantic Oscillation (NAO) on recruitment of Atlantic cod (Gadus morhua) Can. J. Fish. Aquat. Sci., 61: 1558–1564.

# PROGRESS IN 2005 AND CURRENT STATUS OF THE ICES/GLOBEC PROGRAMME OFFICE

The programme office remains less than fully funded since North American contributions ended in 2004. It is difficult to identify funding organisations (e.g. national research councils) to which an application for an international project office such as this can be made and help from ICES Delegates would be welcome. The success rate with such applications has been 100% to date. Funding for the Marie Curie Network - FishACE is due to begin from May 2005. DEFRA (UK) have asked for a proposal for the period from 2006-2009, based on a preproposal submitted in April.

Results and knowledge gained from the Cod and Climate Change programme are now being presented and applied extensively by scientists whose work is not funded from the programme office budget, as well as by the coordinator. Details of the work carried out by the coordinator during the first part of 2005 are given in the table below in relation to the workplan presented to the Bureau in January 2005.

#### **TASKS AND TARGETS for 2005**

Task 1 Implementing the Cod and Climate Change work programme, in fulfilment of the contracts and commitments made with funding bodies

TARGETS AND MILESTONES:	Progress
Assist with the work of the Cod and Climate Change Working Group 10 days - report due in June 2005.	Final draft received 10 June
Prepare for and take part in the Workshop on Impact of Zooplankton on Cod 25 days.	Meeting took place 7-9 June. Extensive use made of website for preparation
Coordinating, writing and editing a book synthesising results from the Cod and Climate Change programme.	Editors (KB + KD) met 10 June to review progress and plan for completion by end of 2005
Compilation of new information on cod life histories, to update Coop. Res. Rep.205	Now available on website and sent to printer on 13 June.
Maintain regular ICES/GLOBEC Newsletter and pages on the WWW	Website extensively updated and expanded. Problems with web-based reference database
Establish the Fisheries Induced Adaptive Change Network	Administrative arrangements made. Funding begins from May 2005
Prepare and present paper at ESSAS Symposium in May 2005	Paper presented and on website
IPCC author meetings in March 2005. Preparing 1 <sup>st</sup> draft on fisheries.	Attended meeting and wrote material for three chapters. Consultations with FAO and others on major issues to include.
Presentation on Fisheries and Climate at Biodiversity Conference, Paris January 2005	Paper presented and on website
Preparation for and Theme Session on Cod and Climate Change at ASC	Done – the session will have 20 papers and 3 posters

Task 2 Writing proposals for continued funding, preparing reports and accounts, dealing with ad hoc requests for data and information, evaluating papers and research proposals

TARGETS AND MILESTONES:	Progress
Proposals for new or renewed funding	Successful pre-proposal to DEFRA
Deal with ad hoc requests for data and information	Ongoing and increasing task.
Steering and review for UK GLOBEC, German GLOBEC, French GLOBEC, Norwegian Research Council. Talks on North Atlantic GLOBEC programme.	Final UK Marine Productivity SSC, Cambridge, April. Timetable clashes limited French GLOBEC involvement.
Developing new aspects of the ICES/GLOBEC programme e.g. on small pelagic fish	Some progress and ongoing discussion, but much to be done.

In addition to the above agreed targets, the coordinator set up a website for the ICES Regional Assessment Group for the North Sea (REGNS) and prepared datasets and analysis for the workshop in May 2005. He liaised with colleagues in Canada and the US over methodology for integrated ecosystem assessments, presented the results at the REGNS workshop and incorporated their analysis into the report. The funding proposal (Specific Support Action) for REGNS submitted to the EU, which included funding for K. Brander, was not successful.

K. Brander gave talks on "Climate change and fish distribution in the North Sea" and on "Long term plankton monitoring for marine management" at a North Sea Commission Conference in March 2005 and on "Marine biodiversity is affected by climate change and fishing" at the Green Week organised by DG Environment June 2005. He chaired his final council meeting as President of SAHFOS in April 2005 after a six year period.

#### **Publications in 2005:**

Brander K.M. 2005. Cod recruitment is more strongly affected by climate when stock biomass is low. ICES J. mar. Sci., 62: 339–343.

All presentations by the coordinator can be downloaded from the ICES/GLOBEC website.

### Annex 3: Budget for ICES/GLOBEC Project Office

#### ICES-GLOBEC Office – income and expenditure

All in DKK:	2005	2006	2007	2008	2009
Carried forward	77,000	19000	-24000		
INCOME:					
From Denmark	200,000	200,000	200,000		
From France	200,000	200,000	200,000		
From UK	165,000	200,000	200,000		
From Norway	85,000	85,000	85,000		
From EU	40,000	100,000	100,000		
Other contracts	37,000				
<b>Total Income</b>	727000	785000	785,000	0	0
EXPENDITURE					
Salary <sup>2</sup>	568,000	568,000	568,000		
Pension	200,000	200,000	200,000		
T&S	10000	10000	10000		
Other expenses					
<b>Total Expenses</b>	778000	778000	778000		
BALANCE	26000	26000	-17000		

#### **Notes:**

- 1. Italics indicate amounts which are subject to annual renewal or are pending approval
- 2. Salary is based on 80% of full-time