SCIENTIFIC FUNDING APPLICATION

[SMALL GRANT PROGRAM – 2022]

SSC Subcommittee:	**Factor XIII and Fibrinogen**
Subcommittee Chair:	**Sanj Raut**
Project PI Name:	*Marlien Pieters & Martin Guthold*
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RESEARCH PROJECT PLAN

Title of Project / Activity:	Standardization of SEM analysis for fibrin fiber diameter measurement
Objectives/Aims:	The objective of this international collaborative study is to standardize fibrin fiber diameter measurement using SEM analysis. This will entail; a) identifying collaborators, b) development of a standardized protocol and; c) experimental analysis comparing data obtained using both the standardized and respective in-house methods.
Target Study Population:	All laboratories that assess fibrin fiber diameter using SEM worldwide.
Expected Total Duration: **Specify Phases:** **Preparation** **Recruitment** **Study** **Analysis**	• Obtaining protocols and development of standardized protocol: Year 1 (2021); to be presented at the ISTH in July 2022. • Experimental work - send out materials, laboratories collect and analyze data: Year 2 (2022); to be presented at the ISTH in July 2023. Funding is requested for the experimental work to be performed in 2022.

BUDGET RATIONALE:

SSC Specific Benefits	Currently there is a large discrepancy in fibrin fiber diameter reported from scanning electron microscopy (SEM) analysis of plasma samples of healthy individuals. The benefit of this proposal is that we will be able to standardize the methodology using pooled plasma. This will allow us to: 1) facilitate interpretation of results, 2) allow direct comparison of data from different laboratories and, 3) permit the

	determination of fibrin fiber diameter for healthy (normal) individuals and individuals with altered clotting. The study outcomes and recommendations will be publicized via SSC communication/publication.
Measurable Outcomes	Fibrin fiber diameters (Standardized SEM methodology)
Expected Results	It is expected that by the end of this study we will have a standardized method that can be employed by all labs wanting to assess fibrin fiber diameter using SEM, which will allow better comparison of results between laboratories and hopefully lead to the development of healthy normal ranges.
Association with other SSC Priorities	Two other techniques used to characterize fibrin clot properties, namely turbidity and permeability, have previously been standardized as official SSC activities of this sub-committee. This project will be led by Dr Marlien Pieters (FXIII and Fibrinogen SSC Co-Chair) and Prof Martin Guthold (Wake Forest University, Winston-Salem, NC, USA) with support from the FXIII and Fibrinogen SSC Chair, Dr Sanj Raut.

Itemized Budget

(Please provide as much detail as possible. A separate budget justification may also be submitted)

	Description	One Time Expense ✓	Recurring Expense ✓	Anticipated Cost in US$
Project Components				
Reagents/Laboratory Supplies	1) Frozen plasma from George King (5 x 1ml x 12) 2) Human α-thrombin x 12	√		$ 800 $ 1 600
Administrative Expenses (i.e. Travel, Shipping, Phone/Fax)	Shipping cost of George King plasma and reagents (e.g. thrombin) to the 12 participating laboratories	√		$ 13 000
Staffing Support (Research Asst., Administrative Asst.)				
	SEM user time	√		$ 2 000

Other expenses (categorize)				
Total (Maximum $20,000.00)				$ 17 400 US Dollars

Additional Considerations Regarding Budget Request:

We will supply the laboratories with thrombin and commercial plasma for the standardization experiment. The other reagents required for these assays are frequently used by the collaborating laboratories and they will provide these themselves. Laboratories that have to pay for user time on the SEM, will be funded from this application.

Submitted by: **Marlien Pieters & Martin Guthold**
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To be completed by ISTH Headquarters:

Date Application Received:	
SSC Executive Committee Reviewer Comments:	
Funding Decision:	
Date of PI Notification:	

For assistance regarding the ISTH Grants Program, contact Meriel_Parker@ISTH.org