EFSD
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for the Study of Diabetes

EFSD Future Leaders Mentorship Programme for Clinical Diabetologists

supported by an unrestricted educational grant from AstraZeneca

2017 - 2019

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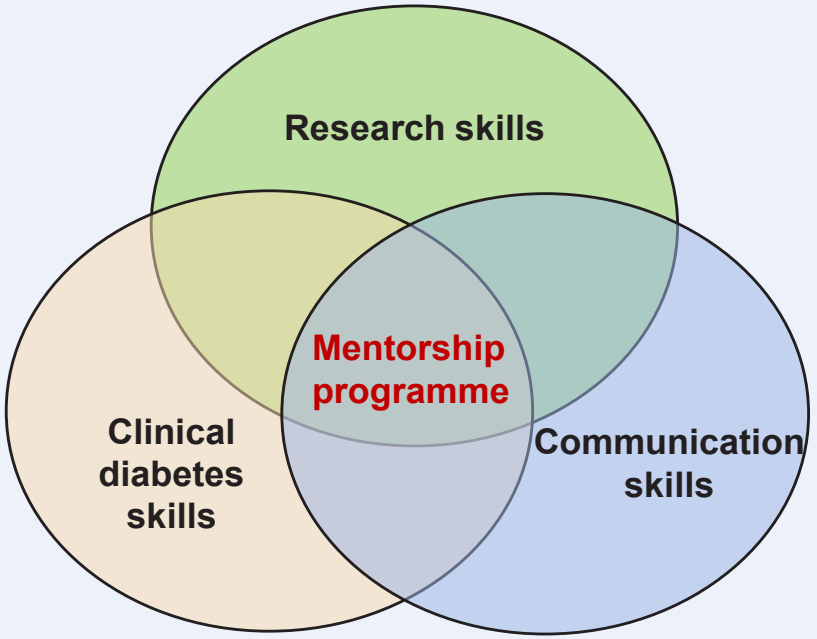
Goal of the Programme

Identify and promote the advancement of the next generation of leading clinical diabetologists in Europe



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Programme

Mentor

Leading European clinical diabetologist as personal mentor

Training and educational courses

To improve research, clinical, leadership and communication skills

Mentorship e-passport

To log all programme activities and facilitate evaluation

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Activities

Research project

Funding and guidance for a clinical research project

Scientific meetings

Attendance and presentation at EASD Annual Meeting, ADA Scientific Sessions and more

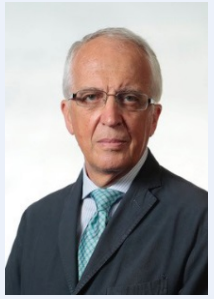
Annual Mentorship Programme Meeting

Visibility, networking and feedback

Mentorship Academy

Chair:
Andrew JM Boulton

University of Manchester, UK



Stefano Del Prato

University of Pisa, Italy

Chantal Mathieu

University of Leuven, Belgium

Stephanie Amiel

King's College London, UK

Boris Mankovsky

National Medical University Kiev, Ukraine

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2017 Mentee Cohort

EASD 2017
Lisbon – Portugal

Inauguration Meeting 2017, Lisbon

Presentations

78th Scientific Sessions of the American Diabetes Association, Orlando 2018

EASD 54th Annual Meeting, Berlin 2018

European Association of Nuclear Medicine (EANM), Düsseldorf 2018

Third EASD Incretin Study Group Meeting, Bochum 2019

EASD Robert Turner Clinical Research Course 2018

Manuscript under review

"Altered Visual Plasticity in Morbidly Obese Subjects"

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Giuseppe Daniele

University of Pisa, Italy

Mentor: Hans-Ulrich Haering
University of Tuebingen, Germany

The effect of Glucagon-like Peptide-1 (GLP-1) on cognitive and non-cognitive function in human

This clinical study, performed at the mentee's institution in Pisa, will test the hypothesis that GLP-1 can exert favourable effects on multiple aspects of brain function including cognitive function, glucose metabolism and neuroplasticity. In addition, potential mechanism underlying the clinical results will be explored in in vitro and animal experiments. The project objectives will be further expanded employing the well-established expertise of the mentor's research group in Tuebingen in brain insulin resistance.

DIABETES, OBESITY AND METABOLISM
A JOURNAL OF PHARMACOLOGY AND THERAPEUTICS

ORIGINAL ARTICLE | Free Access

Long-term risk of cardiovascular disease in individuals with latent autoimmune diabetes in adults (UKPDS 85)

Ernesto Maddaloni MD, Ruth L. Coleman MSc, Paolo Pozzilli MD, Rury R. Holman MBChB

First published: 17 May 2019 | https://doi.org/10.1111/dom.13788

Funding information This study was funded through the EFSD Mentorship Programme supported by AstraZeneca

Presentations

79th Scientific Sessions of the American Diabetes Association, San Francisco 2019:

Maddaloni E, Coleman RL, Holman RR. Microvascular Complications in Latent Autoimmune Diabetes of Adults: Results from the UKPDS

Abstract was selected among the top scoring abstract of the ADA scientific sessions and included in the meeting highlights

EASD 54th Annual Meeting, Berlin 2018

EASD 55th Annual Meeting, Barcelona 2019

7th CODHy World Congress, Sorrento 2019

2019 National Meeting of the Italian Society of Endocrinology (SIE)

8th Minkowski EASD Advanced Postgraduate Course in Clinical Diabetes 2018

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Ernesto Maddaloni

Sapienza University of Rome, Italy

Mentor: Rury Holman
University of Oxford, UK

Improving the assessment of cardiovascular risk in diabetes in the contemporary era

This project aims to improve vascular risk stratification in diabetes by differentiating diabetes sub-populations, and to investigate potential novel biomarkers for diabetic vascular complications.
For this purpose, the long-term risk of macrovascular and microvascular complications in people with Latent Autoimmune Diabetes in Adults (LADA), compared with those who have type 2 diabetes (T2D) are evaluated using data from the United Kingdom Prospective Diabetes Study (UKPDS) for which the mentor is a co-director. Further, markers of bone metabolism as potential novel biomarkers for cardiovascular disease in people with T2D will be evaluated and validated within the cohort of patients with T2D who participated in the Exenatide Study of Cardiovascular Event Lowering (EXSCEL) cardiovascular outcome trial. Finally, the relationship between bone fragility and cardiovascular risk in T2D will be investigated.

EASD Rising Star 2017

EASD 53rd Annual Meeting, Lisbon, 2017
EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019

8th Minkowski EASD Advanced Postgraduate Course in Clinical Diabetes 2018

Felasa Course Certificate

Third EASD Incretin Study Group Meeting 2019

78th Scientific Sessions of the American Diabetes Association, Orlando 2018
79th Scientific Sessions of the American Diabetes Association, San Francisco, 2019

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Teresa Mezza

Catholic University of the Sacred Heart - Rome, Italy

Mentor: Jens Juuls Holst
University of Copenhagen, Denmark

Revealing function of intraislet incretin system

This project will investigate the expression of intraislet GLP1 and/or other proglucagon-derived peptides in response to different metabolic conditions (metabolic health, insulin resistance (IR) and type 2 diabetes) and their potential role in an intra-islet incretin system as regulator of insulin secretion and islet cell fate.

For this purpose, modifications of proglucagon-derived peptides will be explored in human pancreatic tissue from patients undergoing partial pancreatectomy and correlated with specific metabolic phenotypes (insulin sensitive, insulin resistant and type 2 diabetes), in order to determine their functions as potential regulators of islet plasticity. Further, the contribution of insulin and glucagon signaling on intra-islet incretin system will be investigated in an experimental mouse model of IR for a better understanding of the mechanisms underlying the observations made in humans. The in vivo experiments will be carried out at the mentee's institution in Rome, while the ex vivo experiments on pancreas tissue will be performed in collaboration with the mentor's institution in Copenhagen.


DIABETIC Medicine

DIABETES UK
KNOW DIABETES. FIGHT DIABETES.

James Lind Alliance Research Priorities

Are newer insulin analogues better for people with Type 1 diabetes ?

S. Misra, C. Mathieu

First published: 26 December 2018 | https://doi.org/10.1111/dme.13891

Additional grant awards related to project:

Diabetes UK Studentship (£100,000)
NIHR (£2,500)
Biomedical Research Council (£180,000)

IDF Young European Investigator of the Year 2017

EASD 53rd Annual Meeting, Lisbon, 2017
EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019

78th Scientific Sessions of the American Diabetes Association, Orlando 2018
79th Scientific Sessions of the American Diabetes Association, San Francisco, 2019

Invited speaker at Diabetes UK Professional Conference, London 2018

EASD Robert Turner Clinical Research Course 2018

Immunology of Diabetes Society Conference, London 2018

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Shivani Misra

Imperial College London, UK

Mentor: Chantal Mathieu
University of Leuven, Belgium

Exploring phenotype and genotype of type 1 diabetes in non-caucasian populations

This project will undertake detailed phenotyping and genotyping of different cohorts with type 1 diabetes to establish whether there are any differences according to ethnic group. The project is building on the mentor's expertise in type 1 diabetes and the mentee's doctoral thesis that explored young-onset diabetes in different ethnic groups (MY DIABETES study). A more detailed biochemical and immunological phenotype of south Asian and African-Caribbean people from the MY DIABETES cohort with type 1 diabetes will be examined. Genotyping of single nucleotide polymorphisms (SNPs) associated with type 1 diabetes will be performed in this cohort to generate a type 1 diabetes genetic risk score and compare across ethnic groups. Further, metabonomics of serum and urine samples in people with type 1 diabetes from different ethnic groups will be undertaken to establish any potential novel biomarkers that can discriminate type 1 diabetes from other types.

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Mentorship Programme Meeting 2018

3 October 2018, Berlin, Germany

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2018 Mentee Cohort

Mentorship Programme Meeting 2018, Berlin

Francesca Cinti

Catholic University of the
Sacred Heart - Rome, Italy

Mentor: Miriam Cnop
Université Libre de
Bruxelles, Belgium

The role of islet innervation in human type 2 diabetes

This project aims to investigate and provide clinical, molecular and genetic pathways linking innervation and β cell dedifferentiation in human type 2 diabetes. To dissect if the noradrenergic and/or dopaminergic system is involved in the process of β cell dedifferentiation, induced pluripotent stem cells (iPSCs) from type 2 diabetes patients and healthy controls will be differentiated into β cells and the impact of α2A-adrenergic receptor agonists and dopamine D2 receptor agonists on β cell function, morphology and cell viability will be studied. Subsequently, molecular pathways underlying these processes will be defined. The iPSCs generation and experiments will be performed at the mentor's institution in Brussels whereas following morphometric analyses will be performed at the mentee's institution in Rome.

EASD 54th Annual Meeting, Berlin, 2018

EFSD/Lilly Young Investigator Research Award 2019
– obtained with mentor's support for application

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Rumyana Dimova

Medical University Sofia, Bulgaria

Mentor: Stefano Del Prato
University of Pisa, Italy

The relationship between one hour postload plasma glucose and cardio-metabolic status at early stages of impaired glucose tolerance

This clinical study, conducted at the mentee's institution in Sofia, aims to assess the predictive value of one hour postload plasma glucose (1h PG) for the overall cardio-metabolic risk at early stages of glucose intolerance. For this purpose, the study will assess the relation between 1h PG and glucose variability by various means including continuous glucose monitoring (CGM) data, incretin and insulin levels, and cardiac autonomic function in subjects with normal glucose tolerance (NGT) and prediabetes. The methodology for evaluating the incretin effect, which is applied at the mentor's institution at the University of Pisa, will be adopted and performed at the mentee's institution in Sofia for the needs of this project.

EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019
79th Scientific Sessions of the American
Diabetes Association, San Francisco, 2019

5th EASD Postgraduate Course on Clinical
Diabetes, Sofia, 2019
Magyar Imre EASD Clinical Postgraduate
Course 2019

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Jan Gojda

Charles University - Prague, Czech Republic

Mentor: Fredrik Karpe
University of Oxford, UK

Metabolic derangements in cancer cachexia: Impaired insulin-mediated suppressibility of branched chain amino acid (BCAA) forearm flux in patients with pancreatic cancer cachexia

This project will use detailed physiological models to describe the metabolic derangement of carbohydrate and amino acid metabolism in human cancer cachexia. In human *in vivo* studies, performed at the mentee's institution in Prague, the hypotheses will be tested that increased circulating branched chain amino acids (BCAA) in cancer cachexia are associated with increased efflux of BCAA from skeletal muscle, measured in the forearm, and loss of insulin-mediated suppressibility of BCAA efflux, and that the high skeletal muscle BCAA flux relates to a low skeletal muscle glucose disposal (i.e. insulin resistance). In addition, the hypothesis will be tested that there is a decreased capacity of subcutaneous adipose tissue to utilize BCAA for de novo lipogenesis in cancer cachexia. Furthermore, pharmacological approaches will be used to target lipolysis in *ex vivo* experiments. Analyses of blood and adipose tissue samples will be done partly at mentee's institution and partly at the mentor's institution in Oxford.

EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019
79th Scientific Sessions of the American Diabetes Association, San Francisco, 2019
55th Diabetes days in Luhačovice, Czech national diabetes association congress 2019

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Rocky Strollo

University Campus Bio-Medico - Rome, Italy

Mentor: Colin Dayan
Cardiff University, UK

Role of insulin modified by reactive oxygen species as autoantigen in type 1 diabetes

The mentee has previously shown that insulin autoimmunity may be due to oxidative posttranslational modifications (oxPTM-insulin) and developed an ELISA to detect antibody reactivity to oxPTM-insulin. The objective of this project is to identify and isolate oxPTM-insulin specific B-lymphocyte from people with type 1 diabetes in order to generate an oxPTM-insulin specific IgG antibody. This oxPTM- insulin antibody will be used to to develop (1) an ELISA for detection of oxPTM-insulin in serum and (2) establish the developed assay for translation to clinic by using anti oxPTM-insulin as standard in the ELISA. In parallel, clinical, genetic and biochemical features associated with oxPTM-insulin-autoantibody reactivity will be evaluated in people with type 1 diabetes. oxPTM-insulin specific B lymphocytes studies will be performed at the mentor's institution in Cardiff. The remaining tasks of the project will be performed at the mentee's institution in Rome.

16th Immunology of Diabetes Society Congress 2018
12th International Conference on Advanced Technology & Treatments for Diabetes 2019
EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019
79th Scientific Sessions of the American Diabetes Association, San Francisco, 2019

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Domenico Tricó

St Anna School of Advanced Studies - Pisa, Italy

Mentor: Stephanie Amiel
King's College London, UK

Impact of plasma lipids on β cell function and insulin sensitivity

This project aims to test the hypothesis that elevated plasma triglycerides can directly produce chronic hyperinsulinemia and insulin resistance, with impaired glucose tolerance, all of which are early precursors of diabetes. This hypothesis will be tested in two approaches: A clinical study, performed at the mentee's institution in Pisa, will determine whether an acute elevation in plasma triglycerides by lipid infusion affects tracer-derived glucose metabolic fluxes, model-derived β-cell function, insulin sensitivity, and insulin clearance in normally glucose tolerant subjects. In vitro studies, performed at the mentor's institution in London, will test the effect of triglyceride and human very low-density lipoproteins (VLDL) on basal, glucose-induced, and GLP-1-induced insulin secretion in isolated beta cells and islets.

EASD Rising Star 2019

EASD 54th Annual Meeting, Berlin, 2018
EASD 55th Annual Meeting, Barcelona, 2019
79th Scientific Sessions of the American Diabetes Association, San Francisco, 2019

EASD Scientist Training Course 2018
EASD Robert Turner Clinical Research Course 2019

EASD-EGIR Study Group Annual Meeting, Lisbon 2019
EASD-NAFLD Study Group Annual Meeting, Lisbon 2019
Italian Society of Diabetes Annual Meeting, Riccione 2019

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2019 Mentee Cohort

Mohammad Alhadj Ali
Cardiff University, UK

Mentor: Chantal Mathieu, University of Leuven, Belgium

Claudia Cavelti-Weder
University Hospital Basel, Switzerland

Mentor: Marjo-Riitta Jarvelin, Imperial College London, UK

Caterina Conte
Università Vita-Salute San Raffaele, Milan, Italy

Mentor: Michael Roden, DDZ Duesseldorf, Germany

Konstantinos Toulis
AHEPA University Hospital, Thessaloniki, Greece

Mentor: Michael Nauck, Ruhr University of Bochum, Germany

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