



The Nikolas Symposia

on the histiocytoses

34th

Nikolas Symposium

May 7-10, 2026

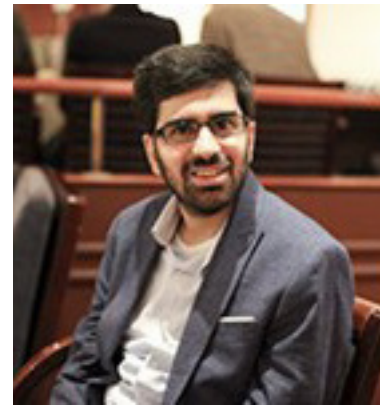
Decoding Langerhans cell histiocytosis
in the age of incipient AI



Who is Nikolas?

Nikolas Kontoyannis is the source of inspiration for this annual Symposium.

In 1981 Nikolas was barely four weeks old when he was rushed to Great Ormond Street Hospital in London with inexplicable skin rashes over his entire body and inside his mouth, secreting fluid. He was treated with topical mustard gas for this but his condition was deemed critical. Nikolas was put under the direct care of Dr. Jon Pritchard, a pediatric oncologist, who became his primary doctor.



The diagnosis: Histiocytosis X

The prognosis: Slim chances of survival

At the time, little was known about the disease and its pathological structure was difficult to discern. When he was less than a year old, Nikolas underwent a painful mouth curettage as a direct consequence of the disease, causing deformities in the mouth. There followed an uncertain period that would disrupt Nikolas' upbringing and life in his formative years and beyond.

Between the ages of 6 and 7 he was diagnosed with ataxia and osteoporosis. It became apparent that he was also suffering from growth deficiencies, which brought about the need for growth hormone treatment, lasting almost 4 years. Nobody knew what the future would hold for him and the threat to Nikolas' life was ever present.

By the age of 7, CNS (Central Nervous System) involvement was detected, and Nikolas was showing signs of short term memory loss and had started to develop learning difficulties. The latter gave rise to a precarious and unsettled puberty, triggering severe psychological issues and episodes for him as he was growing up.

At 11 years of age hydrocephalus was detected. Nikolas had to have a ventriculostomy performed, shortly after which he started having seizures, prompting the need for medication which he takes to this day. Due to CNS involvement, problems and accidents relating to Nikolas' balance, eating, drinking and movement increased over time; a fractured right hip and, when he was 29 years, a severe fall led a 6-hour operation to repair his right arm.

These and other incidents further worsened his ability to walk and balance himself unaided. Since then, Nikolas has required 24-hour assistance to ensure his safety when moving around and to live as normal and happy a life as possible.

Faced with this rare disease and having been in the dark for so long Nikolas' parents embarked on a journey of turmoil, pain and endurance but never gave up their fight to save him and learn more. Nikolas himself, as he grew older and more acutely aware of his situation, developed a spirit of his own and has proved to be a victorious warrior in his battle against the disease.

The Nikolas Symposium is an exceptionally poignant and important aspect of his life, and he remains to this day an active and proud spokesperson for the symposium named after him.

'The impact the disease has made on me and my life is almost beyond words. It sometimes makes me sad, angry and very tired. Sometimes my mind cannot figure it all out and the question is always, 'why me?' But the Symposium has shown me that I am not alone. My struggle has left me determined not to allow myself to settle for less in life...'

Nikolas Kontoyannis, 24th Nikolas Symposium, 2003

Tissue and Cellular Metabolism and the Langerhans cell histiocytosis lesion

Summary of the 33rd Nikolas Symposium, Athens, May 22-25, 2025

The Nikolas Symposium

The Nikolas Symposium is an annual meeting hosted by Paul and Elizabeth Kontoyannis, whose son Nikolas developed Langerhans Cell Histiocytosis (LCH) in infancy. Their motivation to initiate the Nikolas Symposium in 1989 was the lack of knowledge on the pathogenesis of this rare disease. The symposium is an interactive forum of basic scientists and clinicians who discuss a different topic each year that is related either to the clinical presentation of LCH, the spectrum of its complications (late effects), biological features of the neoplastic cells driving histiocytic neoplasms and new therapeutic targets (PMID 31831887). The meeting also provides an opportunity for Greek physicians to present difficult histiocytosis cases or their research. Traditionally, the scientific program is opened by Steering Committee members presenting the concept and history of the meeting, clinical and pathophysiological features of LCH and the summary of the previous symposium.

Introduction to the 33rd symposium

Somatic mutations leading to aberrantly functioning intracellular signaling pathways particularly in myeloid lineage cells are a key characteristic of histiocytic neoplasms. This breakthrough discovery led to the exploration of targeted therapy as a new treatment option for patients refractory to conventional treatment. While these drugs rapidly induce disease remission, molecular monitoring revealed that mutated blood cells remain detectable in these cases. Hence, the hematopoietic cell-of-origin which gives rise to histiocyte precursor cells and other mutated cell types is not eradicated by these drugs. As targeted therapy is associated with significant toxicity issues particularly in adults, we need to think about alternative strategies that effectively block pathological function of circulating and tissue-accumulating mutation-expressing cells. The 2025 symposium brought together experts on the tumor microenvironment and metabolic processes that take place at different tissue sites. The immunometabolism field focuses on understanding how metabolic processes influence immune cell function and how metabolic reprogramming helps (cancer) cells to meet energy demands for important biological functions. This summary highlights the presentations covering the main topic of this meeting.

Key immune components and metabolic processes in histiocytosis lesions

Histiocytosis lesions typically contain high frequencies of cells with macrophage or dendritic cell features. A variable proportion of these cells expresses a driver mutation that sets the stage for still poorly understood hyperinflammatory effector functions. Data published in 2022 (PMID 34919661) provided the first evidence that the recurrent *KRAS*^{G12D} mutation – mostly seen in non-Langerhans cell histiocytosis lesions – drives an immunometabolic rewiring process leading to upregulation of the glucose transporter Glut-1 visualized in ex vivo cultured skin biopsies. This finding points out that MAPK activation directly upregulates glycolysis and activation of the TCA cycle resulting in increased lactate levels in the supernatants of these skin explants. Metabolic changes including upregulated synthesis and storage of fatty acids supply extra energy and anabolic substrates needed for macrophage activation, cytokine production and acquisition of an altered lipid-laden phenotype. The MEK inhibitor trametinib inhibited all these processes.

Which type of metabolic processes take place in macrophages and can these cells be metabolically rewired?

Dr. Pavan Reddy (Baylor College of Medicine) focused his talk on butyrate, a commensal bacteria-derived metabolite that affects the function of gut-resident macrophages. His team studied how specific food components modify gut microbial metabolism and how this could be used to prevent GI tract inflammation after allogeneic stem cell transplantation. Dr. Luke O'Neill (Trinity College Dublin) presented evidence supporting an inflammation-suppressive and anti-oxidative function of Itaconic acid produced upon activation of the TCA cycle in activated macrophages. His team explores how biochemically modified Itaconate derivatives can be used for the treatment of type I Interferon-driven autoimmune diseases.

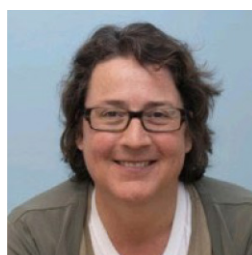
Prevalence and function of other immune cells in the tumor microenvironment

Like the microenvironment in solid tumors, variable numbers of T-cells and other immune cells are co-present in histiocytosis lesions. Dr. Max Krummel (UCSF) discussed results of a high dimensional pan-cancer study on the proportional prevalence of T-cells, myeloid cells and tissue stromal cells. This study led to classification of tumors into 6 distinct 'archetypes' defined as collections of cells in linked states, independent of tissue origin and differently affecting overall survival per tumor type. Dr. Erica Pearce (Johns Hopkins University) zoomed in on cytokine-induced changes in metabolic signals leading to reduced fatty acid oxidation and increased glycolysis preceding T-cell proliferation and differentiation. Dr. Hongbo Chi (St. Jude's Children's Research Hospital) shared his efforts using CRISPR screens to find negative regulators of T-cell function (T cell fate regulomes). Functional Reg-1 limits expansion of murine T cells. Disabling Reg-1 enhances metabolic pathways leading to enhanced in vitro expansion of T-cells expressing a chimeric antigen receptor specific for B7-H3. Reg-1 knock out CAR-T cells showed superior anti-tumor activity when infused into mice expressing B7-H3⁺ sarcoma cells. Dr. Ed Chouchani (Dana-Farber Cancer Institute) presented data on the regulation of biological processes by reactive oxygen species (ROS). His group has generated the 'Oximouse' to study how protein targets of ROS modification (i.e. production of redox-active metabolites) drives tissue-specific physiological processes like aging and malignant transformation. Their main aim is to use systemic tissue mapping to find redox-active cysteines that can be used for drug targeting. Dr. Subham Singh's research focuses on the role of sphingolipids in pathophysiological processes in the brain associated with frontotemporal dementia. He shared his results on their 'Lipid Cruncher' pipeline.

Collectively, the presentations provided valuable insights into different metabolic processes that take place in immune cells under normal and pathological situations. As robust data on the metabolome of neoplastic histiocytes are lacking, the conclusion was that metabolomic profiling of lesional myeloid cells could potentially yield new drug targets aiming at reducing their hyperinflammatory functional state.

Dr. Astrid van Halteren,

Department of Internal Medicine, Erasmus Medical Center, Rotterdam, The Netherlands



Program
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Thursday 7 May

16:00 – 18:00 Steering Committee Meeting (closed)

Session I INTRODUCTION – Poseidon C

Session Chair: Barrett Rollins

18:30-18:45 Barrett Rollins
Introduction to the Nikolas Symposium

18:45-19:30 Matthew Collin
LCH: A Clinical Overview

19:30- 20:00 Astrid van Halteren
Review of 33st Nikolas Symposium

20:30-22:30 Welcome Dinner at “Aphrodite C”

Program
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Friday 8 May

07:30-08:30 Breakfast “Anemos Restaurant”

Session II Adoption of AI for accelerating analysis and discovery – Poseidon C

Session Chair: Chris Glass

08:30-09:00 Jennifer Picarsic
An introduction to the histopathology of LCH

09:00-10:00 Veronica Rotemberg
Opportunities for Diagnosis and Disease Quantification Using Digital
Photography and Artificial Intelligence

10:00-10:30 Coffee Break “Poseidon Veranda”

10:30-11:30 Annalisa Pawloski (via zoom)
Tackling complex diseases with multi-insight analysis and Co-Scientist

11:30-12:30 Liron Pantanowitz
Beyond the microscope: AI as a modern tool for diagnosing and understanding
histiocytosis

12:30-14:00 Lunch “Anemos Restaurant”

Program
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Friday 8 May

Session III The clinical event horizon – Poseidon C

Session Chair: Astrid van Halteren

14:00-15:00 Carl Allen
Pulling the thread on ontogeny and LCH outcomes

15:00-16:00 Graham Ogg
CD1a and the Skin: Biology and Translation

16:00-16:30 Coffee break “Poseidon Veranda”

16:30-18:00 Jon Pritchard Fellows

Joanna Bandola-Simon
Defective MHC-II Peptide Editing in Dendritic Cells Impairs CD4 T Cell Priming
and Promotes Tumor Immune Evasion

Kudzai Nyamondo
The Clonal Origin and Evolution of High-Risk Multisystem Histiocytosis

Free evening OR

**20:00-00:00 Invitation by the Honorary Trustee of our parents association Mr. Simon
Palios for dinner at his premises (Meet at the lobby at 20:00)**

Program
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Saturday 9 May

07:30-08:30 Breakfast “Anemos Restaurant”

Session IV AI Applications – Poseidon C

Session Chair: Eli Diamond

08:30-09:30 Xinxin Cao
The treatment of adult LCH

09:30-10:30 Erik van den Akker
A transcriptomics-based diagnostic framework for subtyping Acute Myeloid
Leukemia – opportunities and lessons learned for precision medicine applications

10:30-11:00 Coffee Break “Poseidon Veranda”

11:00-11:30 Thales Papagiannakopoulos
Metabolic mechanisms of cancer progression

11:30-13:00 **Patients & Family Session**

Polyzois Makras
Vitamin D and skeletal related quality of life in adult patients with LCH

Vasiliki Tzotzola / Vassilios Papadakis
Juvenile Xanthogranuloma Disease: consolidating current knowledge and
Experience

Efthymia Rigarou / Antonios Kattamis
Sequential Occurrence of Juvenile Xanthogranuloma following LCH in a
Pediatric Patient

Program

34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

13:00-14:30 Snack “Poseidon Veranda”

15:00-22:30 Excursion (Meet at the Lobby at 15:00)

Archaiological Museum of Athens | Estia tavern in plaka

Sunday 10 May

07:30-08:30 Steering Committee Meeting (closed)

07:30-08:30 Breakfast “Anemos Restaurant”

Session V New Frontiers – Poseidon C

Session Chair: Florent Ginhoux

08:30-09:30 Raphael Rodriquez
Chemical Control of Cell Adaptation

09:30-10:30 Petri Polonen
How can genomics guide the treatment of childhood T-lineage acute lymphoblastic leukemia?

10:30-10:45 Coffee Break “Poseidon Veranda”

10:45-11:45 Chris Glass
Monocyte replacement of embryonically derived microglia during human aging

11:45-12:00 Matthew Collin
Summation and Future Directions

12:00-12:15 Closing

List of Participants

34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Dr. Erik van den Akker

Leiden University Medical Center
Leiden Computational Biology Center
Eindhovenweg 20,
2333 ZC, Leiden
THE NETHERLANDS

Email: [e.b.van den akker@lumc.nl](mailto:e.b.van_den_akker@lumc.nl)

Dr. Carl Allen

Associate Professor
Texas Children's Cancer Center
Feigin Center, Suite 730.06
1102 Bates Street
Houston TX 77030
USA

Email: ceallen@txch.org

Dr. Joanna Bandola-Simon PhD

Jon Pritchard Fellow

Experimental Immunology Branch
Center for Cancer Research
National Cancer Institute
Bethesda MD 20892
USA

Email: Joanna.bandola@nih.gov

Dr. Xinxin Cao M.D.

Dept of Medical Oncology
National Cancer Center/National Clinical
Research Center for Cancer
Cancer Hospital, Chinese Academy of Medical Sciences
And Peking Union Medical College Beijing
No. 17, Panjiayuan Nanli
Chaoyang District
Beijing 100021
CHINA

Email: caoxinxin@126.com

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Prof. Matthew Collin

Institute of Cellular Medicine
Newcastle University
Framlington Place
Newcastle upon Tyne NE2 HH
UK

Email: matthew.collin@newcastle.ac.uk

Dr. Eli L. Diamond, MD

Neuro-Oncology and Histiocytosis
Memorial Sloan Kettering Cancer Center
Department of Neurology
Memorial Sloan Kettering Cancer Center
160 East 53rd St, Second Floor Neurology
New York, New York 10022
USA

Email: diamonel@mskcc.org

Dr. Florent Ginhoux

Principal Investigator
Institute Gustave Roussy
Bâtiment Médecine moléculaire (B2M)
(2^{ème} étage, pièce 240)
32 Rue Camille Desmoulins,
94800 Villejuif
FRANCE

Email: Florent_Ginhoux@a-star.edu.sg

Prof. Christopher K. Glass

Professor of Cellular and Molecular Medicine
Professor of Medicine
9500 Gilman Dr. Mail code 0651
GPL Bldg., Room 210
La Jolla, CA92093-0651
USA

Email: cglass@health.ucsd.edu

List of Participants

34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Dr. Astrid van Halteren

Department of Internal Medicine
NFU Expertise Centrum for Histiocytosis
ErasmusMC
Dr. Molewaterplein 40
3015 GD Rotterdam
THE NETHERLANDS

Email: a.vanhalteren@erasmusmc.nl

Prof. Antonis Kattamis

Assoc Prof of Pediatric Hematology-Oncology
Head, Division of Pediatric Hematology-Oncology
Aghia Sofia Children's Hospital
Papadiamantopoulou and Levadias
Goudi 115 27, Athens
GREECE

Email: ankatt@med.uoa.gr

Dr. Polyzois Makras MD, PhD

Endocrinologist
Dpt of Endocrinology & Diabetes; Dpt of Medical Research
LCH and ECD Adult Clinic
251 Hellenic Airforce & VA General Hospital
3 Kanellopoulou St, 11525, Athens
GREECE

Email: pmakras@gmail.com

Prof. Maria Moschovi MD

Associate Professor
of Pediatric Hematology-Oncology
Hematology – Oncology Unit
First Dept. of Paediatrics
University of Athens
Agia Sophia Children's Hospital
115 27, Athens
GREECE

E: mmoschov@med.uoa.gr

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Dr. Kudzai Nyamondo

Jon Pritchard Fellow

Sanger-CRUK Excellence Postdoctoral Research Fellow
Wellcome Sanger Institute
Wellcome Genome Campus
Hinxton, Cambridgeshire CB10 1SA
UK

Email: kn8@sanger.ac.uk

Prof. Graham Ogg, FMedSci FRCP DPhil

Medical Research Council Translational Immune Discovery Unit
MRC Weatherall Institute of Molecular Medicine
Radcliffe Department of Medicine
University of Oxford
John Radcliffe Hospital
Headington, Oxford OX3 9DS
UK

Email: graham.ogg@ndm.ox.ac.uk

Prof. Liron Pantanowitz MD PhD MHA

Chair and Professor of Pathology
UPMC/University of Pittsburgh
4200 Fifth Avenue
Pittsburgh PA 15260
USA

Email: pantanowitzl2@upmc.edu

Prof. Vassilios Papadakis MD PhD

Director of the Department
Of Pediatric Hematology - Oncology
Marianna V Vardinoyannis-ELPIDA Oncology Unit
Agia Sofia Children's Hospital, Athens, Greece
Head Histiocytoses Group of the Hellenic Society of Pediatric Hematology- Oncology
GREECE

Email: vpapadak@otenet.gr

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Dr. Thales Papagiannakopoulos PhD

Associate Professor, Dept of Pathology
NYU Grossman School of Medicine
NYU Langone Health
550 First Avenue, Smilow Building
5th floor, Room 505
New York, NY 10016
USA

Email: Thales.Papagiannakopoulos@nyulangone.org

Dr. Annalisa Pawlosky

via zoom

Senior Research Scientist at Google Research
Rochester-Bern Executive Programs
Hochschulstrasse 4
3012 Bern
SWITZERLAND

Email: apawlosky@google.com

Prof. Jennifer Picarsic, MD

Chief of Pediatric Pathology and Head of Laboratories
University of Pittsburgh School of Medicine
UPMC Children's Hospital of Pittsburgh
4401 Penn Ave
Pittsburgh, PA 15224
USA

Email: picarsicjl@upmc.edu

Dr. Petri Polonen PhD

Expert in Bioinformatics and Computational Systems Biology
St. Jude Children's Research Hospital
262 Danny Thomas Place
Memphis, TN 38105-3678
USA

Email: Petri.Polonen@STJUDE.ORG

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Dr. Efi Rigarou M.D.

Pediatric Oncologist
First Dept of Pediatrics
National & Kapodistrian University of Athens
"Aghia Sophia" Children's Hospital
Papadiamantopoulou and Levadias
Goudi 11527 Athens
GREEECE

Email: e_regat@yahoo.com

Dr. Raphael Rodriguez

CNRS Research Director
Insitute Curie Research Center
CNRS Delegation Ile-de-France Sud: Paris
FRANCE

Email: Rachael.Rodriguez@curie.fr

Prof. Barrett Rollins

Linde Family Professor of Medicine
Harvard Medical School
Chief Scientific Officer
Dana-Faber Cancer Institute
450 Brookline Avenue
Boston, MA 02215
USA

Email: barrett_rollins@dfci.harvard.edu

Dr. Veronica Rotemberg M.D., PhD

Dermatologist
David H Koch Center for Cancer Care at
Memorial Sloan Kattering Cancer Center
530 East 74th Street
NY, New York 10021
USA

Email: rotembev@mskcc.org

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Ms. Jen Silvers MBA, CFRE

Executive Director
Histiocytosis Association
332 North Broadway
Pitman, NJ 08071
USA

Email: jensilvers@histio.org

Dr. Vassiliki Tzotzola

Senior Attending
Department of Pediatric Hematology - Oncology
Marianna V Vardinoyannis-ELPIDA Oncology Unit
Agia Sofia Children's Hospital, Athens
GREECE

Email: vtzotzola@gmail.com

OTHER PARTICIPANTS

Mr. Peter Bienenstock

Allen & Overy LLP
268A Avenue de Tervuren
1150 Brussels
BELGIUM

Email: peter.bienenstock@gmail.com

Mr. Apostolos Kontoyannis

CEO Investments and Finance Ltd.
10 Skouze Street
185 36 Piraeus
GREECE

Email: akontoyannis@investmentsandfinance.com

List of Participants
34th Nikolas Symposium May 7-10, 2026

Decoding Langerhans cell histiocytosis in the age of incipient AI

Mr. Steven D. Kontoyannis

Histiocytosis Hellas
10 Skouze Street
185 36 Piraeus
GREECE

Email: stevenkontoyannis@gmail.com

Mrs. Dora Moustaka

Symposium Organizer
10 Skouze Street
185 36 Piraeus
GREECE

Email: dmoustaka@investmentsandfinance.com

Steering Committee

The Nikolas Symposium research program is organized by a dedicated Steering Committee. Members of the Steering Committee are elected for a five-year term and include the Chairman of the Histiocyte Society, as ex-officio, and the Chairman of the Histiocytosis Association.

The current Steering Committee is:

Chair



Christopher K. Glass, M.D., Ph. D.
University of California
San Diego
La Jolla, USA



Matthew Collin, M.D.
Scientific Secretary
Haematological Sciences
Institute of Cellular Medicine
Newcastle University

Co-Chairs Emeriti



Professor Barrett Rollins
Scientific Chair (US)
Dana-Farber Cancer Institute
Harvard Medical School

Members



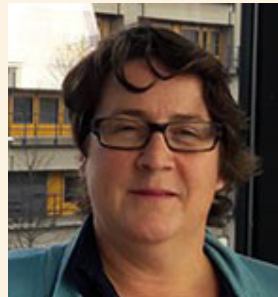
Carl Allen M.D., Ph.D.
Baylor College of Medicine
Texas Children's Cancer Center



Eli L. Diamond M.D.
Neuro-Oncology and Histiocytosis
Memorial Sloan Kettering Cancer Center



Florent Ginhoux Ph.D.
Principal Investigator
Singapore Immunology Network (SIgN)
Agency for Science, Technology &
Research



Astrid GS van Halteren, M.D., Ph.D.
Department of Internal Medicine-Researcher
Immunology-NFU Expertise Centrum for
Histiocytosis



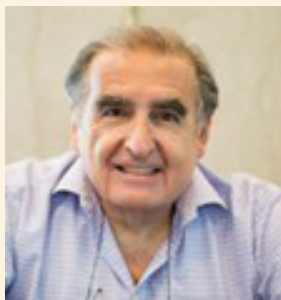
Jennifer Picarsic, MD
University of Pittsburgh
School of Medicine,
Professor of Pathology UPMC Children's
Hospital of Pittsburgh Chief of
Pathology and Head of Laboratories



Jen Silvers
Executive Director
Histiocytoses Association
New Jersey, USA



Mr. Peter Bienenstock
Administrative Secretary
Retired Partner
Allen & Overy (Brussels) LLP
Brussels, BELGIUM



Mr. Paul Kontoyannis
CEO of Investments & Finance Ltd.
Piraeus, GREECE



Ms Dora Moustaka
Symposium Organizer
Piraeus, GREECE



John A. Kontoyannis
New York, USA



Steven D. Kontoyannis
London, UK



Vasanta Nanduri
Consultant Paediatrician
Oncology & Endocrinology
Head of School of Paediatrics
HEE, East of England Officer
for Examination
Royal College of Paediatrics and Child Health
UK

