FIFTH INTERNATIONAL CNS GERM CELL TUMOR SYMPOSIUM

RENAISSANCE COLUMBUS DOWNTOWN HOTEL

JUNE 7 - JUNE 10, 2017
On behalf of the 2017 local organizing committee, we want to welcome you to downtown Columbus, Ohio, for the Fifth International Central Nervous System (CNS) Germ Cell Tumor Symposium. We do hope that you will enjoy your stay in our vibrant, welcoming cosmopolitan city. In addition to being the fifteenth largest city in the United States (US), the political capital city of the state of Ohio and a major commercial crossroad for half of the US population, Columbus is home to The Ohio State University, one of the largest public colleges in the US and to Nationwide Children's Hospital, which is now the largest children's hospital in the US. Furthermore, Columbus hosts a dynamic visual and performing arts scene (The Columbus Arts Festival, rated one of the top festivals in the nation, celebrates its 56th year of bringing the best in fine art and fine craft to downtown Columbus, June 9, 10 and 11.), many downtown restaurants in an environmentally conscious local-sourced culinary movement and, finally, professional sports (Columbus Blue Jackets hockey, Columbus Crew soccer and Columbus Clippers baseball).

We are especially honored to welcome both Dr. Masao Matsutano of Saitama, Japan and Dr. Jeffrey Allen of New York City, USA, as the first-ever recipients of the symposium’s Life Time Achievement Awards.

We are very pleased to welcome our internationally-renowned 20 Keynote speakers and 33 platform and poster session co-chairs from China, Japan, Taiwan, India, the United Kingdom, Italy, Australia, Germany, France, Argentina, Brazil, Canada and the United States.

Our overriding goal for this conference is to facilitate academic discussion on basic, translational and clinical aspects of CNS germ cell tumors stimulated by both platform and poster sessions and through networking. Speakers for the platform sessions were selected from among submitted abstracts with the assistance of our International Scientific Committee.

We are thrilled to be hosting, on the Saturday morning, a half-day satellite symposium particularly for CNS germ cell tumor patients and their families, with presentations by 13 clinicians and pertinent allied health care specialists in the field.

The conference schedule included in the Program book details the platform and poster sessions, meals, coffee/tea breaks and other social activities planned to aid you in networking, career development and collaboration.

We thank you for attending and hope you have an enjoyable and productive experience at the Fifth international CNS Germ Cell Tumor Symposium!

Sincerely,
Jonathan L. Finlay, MB, ChB, FRCP
Conference Chair
Arnab Chakravarti, MD
Conference Co-Chair
Jeffrey R. Leonard, MD
Conference Co-Chair

Soccer for Hope
Helping Kids is Our Goal!

Welcome!

Symposium Sponsors
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ORAL PRESENTATIONS
All main symposium sessions will be held in the Hayes CDE Grand Ballroom. In addition to keynote addresses from leading authorities in aspects of basic, translational and innovative clinical research and management, there will be oral presentations from submitted abstracts. Time will be given for Q&A after each presentation.

POSTER SESSION
The poster session will be held in the pre-function space outside of the Hayes Grand Ballroom on Thursday afternoon, June 8, 3:20 p.m.–4:20 p.m. All posters will be displayed during the entire symposium, beginning on Thursday morning, June 8.

Posters are numbered according to the Abstracts by Title section of this book and should be hung in the pre-function area on the poster board assigned to this number. Presenters should stand by their posters during the time of the poster session.

PATIENT/FAMILY MINI-SYMPOSIUM
For patients affected by CNS germ cell tumors, and for their immediate family members, we are hosting a special mini-conference on Saturday morning, June 10, with presentations by leading experts in the field on all aspects of survivorship. All presentations will be held in the Hayes A meeting room off the Grand Ballroom. The mini-symposium will conclude with lunch with physicians, scientists, psychologists, genetic counselors and social workers in the Hayes B meeting room.

CATERING
Breakfast, lunch and snacks will be offered throughout the symposium. Breakfast and snacks will be served outside the Hayes CDE meeting rooms in the pre-function area. Lunch will be served in the Hayes A and B meeting rooms.

EVENING EVENTS
Welcome Reception
Wednesday, June 7, 2017 | 7:00 p.m. – 9:00 p.m.
Renaissance Columbus Downtown Hotel | Cityview Terrace
All symposium attendees are invited to join us for cocktails and hors d’oeuvres at a special welcome reception on Wednesday evening.

Gala Dinner
Thursday, June 8, 2017 | 6:30 p.m. – 9:00 p.m.
Columbus Museum of Art | 480 East Broad Street
Derby Court & The McCoy Family Broad Street Lobby
$100 USD per person
Experience the glass sculpture of Dale Chihuly and a skylight ceiling filled with sun or stars in this grand and unique traditional space, the setting for the gala dinner. Guests will have access to galleries on the 1st and 2nd floors of the museum during the evening.

All symposium attendees are invited to the Gala Dinner. Shuttle service will be provided to and from the dinner. You must register in advance for the dinner. If you have not yet registered, please stop by the symposium registration desk.

LOCAL RESTAURANTS – GAY STREET DISTRICT
Symposium attendees are free to have dinner on their own on Friday night. The following restaurants are within walking distance of the Columbus Renaissance Hotel:
Due Amici, $$
Latitude 41 (inside the Columbus Renaissance), $$$
Mitchell’s Steakhouse, $$$$ 
Tip Top Kitchen and Cocktails, $
Elevator Brewery & Draught Haus, $$$

Average dinner entrée price:
$ = under $10, $5 = $10-$15
$$ = $15-$20, $$$ = $20+
See restaurant section on page 37 for other local establishments in the downtown area.
**FIFTH INTERNATIONAL CNS GERM CELL TUMOR CONFERENCE**

**PROGRAM AGENDA**

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**WEDNESDAY JUNE 7**

7:00-9:00 p.m.  
**WELCOME RECEPTION | Cityview Terrace**

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**THURSDAY JUNE 8**

7:00 a.m.  
**REGISTRATION & BREAKFAST | Pre-Function 2nd Fl All**

8:00 a.m.  
**WELCOME | Professor Jonathan Finlay, Columbus, OH | Hayes CDE**

8:10 a.m.  
**THE WYSS FAMILY POPULATION AND MOLECULAR EPIDEMIOLOGY SESSION | Hayes CDE**

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**THURSDAY JUNE 8 CONTINUED**

11:00 a.m.  
**DIAGNOSTIC IMAGING | Hayes CDE**

Chairs: Professor Marvin Nelson, Los Angeles, CA; Professor Jerome Rusin, Columbus, OH

K5. Keynote Address: Professor Andrew Pert, Birmingham, UK

Oral Presentations

O5. Magnetic Resonance Spectroscopy in the Diagnosis of Primary CNS Germ Cell Tumors  
Professor Marvin Nelson, Los Angeles, CA

O6. Hemo-sequences (Susceptibility Weighted Imaging and T2* Gradient Echo Sequences) in Midline and Off-midline Intra-cranial Germ Cell Tumors (GCT)  
Maria Luisa Garrè, Genou, Italy

O7. Incidence of Optic Nerve Involvement in Pediatric Intracrancial Germ Cell Tumors  
Shannon M. MacDonald, Boston, MA

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7:00-9:00 p.m.  
**WELCOME RECEPTION | Cityview Terrace**

7:00 a.m.  
**REGISTRATION & BREAKFAST | Pre-Function 2nd Fl All**

8:00 a.m.  
**WELCOME | Professor Jonathan Finlay, Columbus, OH | Hayes CDE**

8:00 a.m.  
**NEUROSURGICAL PRACTICE | Hayes CDE**

Sponsored by The Ohio State University Wexner Medical Center Department of Neurosurgery

Chairs: Professor Jeffrey Leonard, Columbus, OH; Professor Mark Souweidane, New York, NY

K6. Lifetime Achievement Award: Professor Maseo Matsutani, Saitama, Japan  
Presented by Professor Ryo Nishikawa, Saitama, Japan

Sponsored by Saitama Medical University International Medical Center

K7. Keynote Address: Professor Ryo Nishikawa, Saitama, Japan

Oral Presentations

O8. Time for a Change in Strategy: Radical Surgical Resection of Newly Diagnosed Primary Central Nervous System Mixed Malignant Germ Cell Tumors  
Professor Jeffrey R. Leonard, Columbus, OH

O9. Strategy for Central Nervous System Germ Cell Tumors with Residual Disease Following Chemotherapy and Radiotherapy  
Tomomari Suzuki, Saitama, Japan

LUNCH | Hayes AB
THURSDAY JUNE 8 CONTINUED

2:00 p.m. RADIATION ONCOLOGY PRACTICE | Hayes CDE
Sponsored by The Ohio State University Wexner Medical Center Department of Radiation Oncology
Chairs: Dr. Shannon MacDonald, Boston, MA; Professor Thomas Merchant, Memphis, TN; Dr. Erin Murphy, Cleveland, OH
K8. Keynote Address: Professor Thomas Merchant, Memphis, TN

Oral Presentations
O10. Dose-Reduced Radiotherapy with Platinum-Based Chemotherapy has Improved Quality of Life in the Long-Term Survivors with Central Nervous System Germinoma
Kazuhiko Sugiyama, Hiroshima, Japan
O11. The Relationship Between Ventricular Size and Whole Brain Irradiation Dose in Central Nervous System Germ Cell Tumors
Stephanie Toll, Los Angeles, CA
O12. Emergency Radiotherapy for Rapid Deterioration of Patients with Critical Intracranial Germ Cell Tumors – Twenty Case Reports
Linbo Cai, Guangzhou, China
O13. Long-term Experience with Whole Ventricle Irradiation (WVI) for Central Nervous System (CNS) Germinoma
Alice Indini, Milano, Italy
O14. A 40-Year Multi-Institutional Review of Intracranial Germ Cell Tumors in Adolescents and Young Adults
Andrea Lo, Toronto Canada

3:20 p.m. AFTERNOON TEA BREAK WITH POSTER PRESENTATIONS | Pre-Function 2nd Fl All
Poster Moderators: Blanca Diez, Buenos Aires, Argentina; Takamitsu Fujimaki, Saitama, Japan

4:20 p.m. LATE EFFECTS/QUALITY OF SURVIVAL | Hayes CDE
Chairs: Professor Charles Sklar, New York, NY; Professor Steven Sands, New York, NY
K9. Keynote Address: Professor Steven Sands, New York, NY
K10. Keynote Address: Professor Charles Sklar, New York, NY

Oral Presentations
O15. Neurocognitive Outcomes and Dosimetric Correlates in Central Nervous System Germ Cell Tumors: The St. Jude Experience
Christopher L. Tinkle, Memphis, TN
O16. Neurocognitive and Psychological Functioning in Pediatric Patients with Intracranial Germ Cell Tumors (GCT) After Treatment
Sonia Di Profio, Genoa, Italy

5:40 p.m. ADJOURN

6:30 p.m. GALA DINNER | Columbus Museum of Art | 480 E. Broad Street, Columbus, OH

FRIDAY JUNE 9

7:00 a.m. BREAKFAST | Pre-Function 2nd Fl All

8:00 a.m. THERAPEUTICS OVERVIEW | Hayes CDE
Professor Jonathan Finlay, Conference Chair, Columbus, OH
K11. Keynote Address: Dr. Lindsay Frazier, Boston, MA

8:30 a.m. PURE CNS GERMINOMAS | Hayes CDE
Chairs: Professor James Nicholson, Cambridge, UK; Dr. Ute Bartels, Toronto, Canada; Dr. Soumen Khattaa, Houston, TX
Oral Presentations
O17. The Second Interim Report of the Multi-institutional, Prospective Phase II Study of Radio-chemotherapy for Primary Intracranial Germinomas in Japan
Professor Masao Matsutani, Saitama, Japan
O18. Value of Positive Cerebrospinal Fluid Cytology Without Further Macroscopic Dissemination in Patients with Intracranial Germinoma: Is There Room for Reduction of Treatment?
Professor Gabriele Calaminus, Bonn, Germany
O19. Preliminary Results of a Brazilian Central Nervous System Germ Cell Tumor Consortium Protocol
Andrea Cappellano, Sao Paulo, Brazil
O20. Clinical and Neuropsychological Outcome of Pediatric Non-Midline Central Nervous System Germinoma Treated with Chemotherapy and Reduced Dose/Volume Irradiation: Children’s Hospital Los Angeles Experience
Kee Kiat Yeo, Los Angeles, CA

9:30 a.m. MORNING COFFEE BREAK | Pre-Function 2nd Fl All

10:00 a.m. MIXED MALIGNANT GERM CELL TUMORS | Hayes CDE
Chairs: Professor Gabriele Calaminus, Bonn, Germany; Dr. Garth Dhall, Los Angeles, CA
K12. Keynote: Professor Eric Bouffet, Toronto, Canada
Oral Presentations
O21. Impact on Outcome of Human Chorionic Gonadotropin-Beta (HCGβ) Elevations Alone in SIOP CNS GCT 96 Patients Treated as Non-geminomatous/Secreting Germ Cell Tumors (NGGCT) – Are we Over-Treating Germinoma?
Dr. James C. Nicholson, Cambridge, UK
O22. Single Institution Experience with Intracranial Germ Cell Tumors Treated According to the SIOP CNS GCT Protocols
Irene Slavc, Vienna, Austria

11:00 a.m. TERATOMA, MATURE AND IMMATURE | Hayes CDE
Chairs: Professor Tai-Tong Wong, Taipei, Taiwan; Dr. Andrea Cappellano, Sao Paulo, Brazil
K13. Keynote Address: Dr. Maria Luisa Garrè, Genova, Italy
**FIFTH INTERNATIONAL CNS GERM CELL TUMOR CONFERENCE**

**PROGRAM AGENDA**

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**FRIDAY JUNE 9 CONTINUED**

**11:30 a.m.**

LUNCH | Hayes AB

**1:00 p.m.**

**RECURRENT CNS GERM CELL TUMORS** | Hayes CDE

Chairs: Professor Stewart Kellie, Sydney, Australia; Dr. Sharon Gardner, New York, NY; Dr. Jason Fangusaro, Chicago, IL

K14. **Keynote Address**: Dr. Darren Feldman, New York, NY

**Oral Presentations**

O23. National Survey for Relapsed Central Nervous System (CNS) Germ Cell Tumors (GCT) by the Japan Children’s Cancer Group
Keita Terashima, Tokyo, Japan

O24. Relapse Pattern and Treatment Outcome of Recurrent Central Nervous System Germ Cell Tumors
Takaaki Yanagisawa, Tokyo, Japan

O25. New Approaches to the Management of Recurrent Central Nervous System (CNS) Germinoma in the Current Molecular Era
Diana S. Osorio, Columbus, OH

O26. Treatment and Outcomes of Central Nervous System Non-germinomatous Germ Cell Tumors with Early Relapse during Induction Chemotherapy
Dr. Hung Tran, Los Angeles, CA

O27. New Approaches to the Management of Recurrent Central Nervous System (CNS) Mixed Malignant Germ Cell Tumors (MMGCT) in the Current Molecular Era
Mohamed S. AbdelBaki, Columbus, OH

O28. Severe Central Nervous System (CNS) Damage Following High Dose Irradiation and Subsequent Multiple Cycle Marrow-Ablative Chemotherapy for Pediatric/Adolescent Recurrent CNS Malignant Germ Cell Tumors
Rolla Abu-Arja, Columbus, OH

**2:50 p.m.**

**GERM CELL CANCER METASTATIC TO THE CNS** | Hayes CDE

Chairs: Dr. Mark Ranalli, Columbus, OH; Professor Vinay Pudovalli, Columbus, OH

K15. **Keynote Address**: Dr. Mark Ranalli, Columbus, OH

**3:20 p.m.**

**AFTERNOON TEA BREAK** | Pre-Function 2nd Fl All

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**4:00 p.m.**

**MANAGEMENT OF CNS GERM CELL TUMORS IN DEVELOPING COUNTRIES** | Hayes CDE

Chairs: Professor Rakesh Jalali, Mumbai, India; Professor Zhong-ping Chen, Guangzhou, China; Dr. Ibrahim Qaddoumi, Memphis, TN

K16. **Keynote Address**: Professor Rakesh Jalali, Mumbai, India

K17. **Keynote Address**: Professor Zhong-ping Chen, Guangzhou, China

**Oral Presentations**

O29. Central Nervous System Germ Cell Tumors: Experience of a Referral Center in Guatemala
Ana Verónica Girón, Guatemala City, Guatemala

O30. New Approaches to the Irradiation-Free Management of Central Nervous System (CNS) Germ Cell Tumors (GCT) in the Developing World
Professor Jonathan L. Finlay, Columbus, OH

**5:25 p.m.**

**GERM CELL CANCER METASTATIC TO THE CNS** | Hayes CDE

Chairs: Professor Jonathan Finlay, Columbus, OH; Professor Jeffrey Leonard, Columbus, OH

Participants: Professor Mark Souweidane, Professor Thomas Merchant, Professor Ryo Nishikawa, Professor Rakesh Jalali, Professor Tai-Tong Wong, Professor Eric Bouffet, Professor Gabriel Calaminus, Professor Jeffrey Allen, Professor Maseo Manusanti

**ROUND TABLE DISCUSSION AND OPEN FORUM: THE FUTURE MANAGEMENT OF CNS GERM CELL TUMORS – IN WHICH DIRECTION?** | Hayes CDE

Chairs: Professor Jonathan Finlay, Columbus, OH; Professor Jeffrey Leonard, Columbus, OH

Participants: Professor Mark Souweidane, Professor Thomas Merchant, Professor Ryo Nishikawa, Professor Rakesh Jalali, Professor Tai-Tong Wong, Professor Eric Bouffet, Professor Gabriel Calaminus, Professor Jeffrey Allen, Professor Maseo Manusanti

**FRIDAY EVENING FREE FOR REGISTRANTS**
FIFTH INTERNATIONAL CNS GERM CELL TUMOR CONFERENCE

PROGRAM AGENDA

SATURDAY, JUNE 10

7:00 a.m.  BREAKFAST  | Pre-Function 2nd Fl All

8:00 a.m.  DEVELOPMENTAL BIOLOGY OF GERM CELL TUMORS  | Hayes CDE
Sponsored by Alex’s Lemonade Stand Foundation for Childhood Cancer
Chairs: Professor Koichi Ichimura, Tokyo, Japan; Professor Azim Surani, Cambridge, UK
K18. Keynote Address: Professor Koichi Ichimura, Tokyo, Japan
K19. Keynote Address: Professor Azim Surani, Cambridge, UK

9:00 a.m.  PATHOLOGY AND MOLECULAR BIOLOGY OF CNS GERM CELL TUMORS  | Hayes CDE
Sponsored by The Matthew Larson Foundation for Pediatric Brain Tumors
Chairs: Dr. Matthew Murray, Cambridge, UK; Professor Ching Lau, Farmington, CT
K20. Keynote Address: Dr. James Amatruda, Dallas, TX
K21. Keynote Address: Professor Bette Kleinschmidt-DeMasters, Denver, CO

10:00 a.m. MORNING COFFEE BREAK  | Pre-Function 2nd Fl All

10:45 a.m. PATHOLOGY AND MOLECULAR BIOLOGY OF CNS GERM CELL TUMORS (CONTINUED)  | Hayes CDE
K22. Keynote Address: Professor Elaine Mardis, Columbus, OH

Oral Presentations
Dr. Mathew Murray, Cambridge, UK
O32. Correlation of Clinical and Molecular Aspects of Central Nervous System Germ Cell Tumors: A Clinical and Research Experience in a Cohort Series in Taiwan
Professor Tai-Tong Wong, Taipei, Taiwan
O33. PD-L and PD-1 are Associated with Tumor-Infiltrating Lymphocytes in Intracranial Germinoma
Yoshiki Arakawa, Kyoto, Japan

11:55 a.m. CLOSING REMARKS  | Hayes CDE
Professor Jonathan Finlay, Columbus, OH; Professor Gabriele Calaminus, Bonn, Germany

12:15 p.m. ADJOURN - LUNCH  | Hayes B

FIFTH INTERNATIONAL CNS GERM CELL TUMOR CONFERENCE

PATIENT/FAMILY MINI-SYMPOSIUM

RENAISSANCE COLUMBUS DOWNTOWN HOTEL

SATURDAY, JUNE 10TH

7:00 a.m.  REGISTRATION & BREAKFAST  | Pre-Function 2nd Fl All

8:00 a.m.  INTRODUCTION AND OVERVIEW OF LONG-TERM SURVIVALSHIP  | Hayes A
Dr. Saro Armenian, Los Angeles, CA

8:30 a.m.  GENETIC COUNSELING FOR CHILDHOOD CNS GERM CELL TUMORS  | Hayes A
Ms. Kristin Zago, Columbus, OH

8:50 a.m.  NEUROSURGICAL ISSUES: LIFE LONG SHUNT MANAGEMENT  | Hayes A
Professor Charles Sklar, New York, NY

9:10 a.m.  GROWTH AND PHYSICAL DEVELOPMENT OUTCOMES  | Hayes A
Dr. Leena Nahata, Columbus, OH

9:30 a.m.  FERTILITY AND REPRODUCTIVE OUTCOMES  | Hayes A
Dr. Sabine Mueller, San Francisco, CA

9:50 a.m.  CEREBROVASCULAR OUTCOMES  | Hayes A
Dr. Nathan Rosenberg, Columbus, OH

10:10 a.m. MORNING COFFEE AND SNACK BREAK  | Pre-Function 2nd Fl All

10:30 a.m. COGNITIVE/INTELLECTUAL OUTCOMES  | Hayes A
Professor Stephen Sands, New York, NY

10:50 a.m. QUALITY OF LIFE OUTCOMES  | Hayes A
Dr. Tammi Young-Saleme, Columbus, OH

11:10 a.m. REHAB OF CHILDREN WITH BRAIN TUMORS OVER THE LONG TERM  | Hayes A
Dr. Nathan Rosenberg, Columbus, OH

11:30 a.m. HEARING OUTCOMES  | Hayes A
Ms. Kristin Knight, Portland, OR

11:50 a.m. SECOND CANCERS FOLLOWING TREATMENT OF CNS GERM CELL TUMORS  | Hayes A
Dr. Randal Olshefski, Columbus, OH

12:10 p.m. ROUND TABLE DISCUSSION  | Hayes A
Speakers + Ms. Jaime Banks, Bethesda, MD

1:00 p.m.  LUNCH WITH PHYSICIANS, SCIENTISTS, PSYCHOLOGISTS, GENETICS COUNSELORS AND SOCIAL WORKERS  | Hayes B

Summation
Professor Jonathan Finlay, Conference Chair, Columbus, OH
### KEYNOTE SPEAKERS – MAIN SYMPOSIUM

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<tr>
<td>James F. Amatruda, MD, PhD</td>
<td>University of Texas Southwestern Medical Center, Dallas, Texas, United States</td>
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<tr>
<td>Jill S. Barnholtz-Sloan, PhD</td>
<td>Case Western Reserve University School of Medicine, Cleveland, Ohio, United States</td>
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<tr>
<td>Eric Bouffet, MD</td>
<td>The Hospital for Sick Children, Toronto, Ontario, Canada</td>
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<tr>
<td>Zhong-ting Chen, MD</td>
<td>Sun Yat-sen University Cancer Center, Guangzhou, China</td>
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<tr>
<td>Bette Kleinschmidt DeMasters, MD</td>
<td>University of Colorado School of Medicine, Denver, Colorado, United States</td>
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<tr>
<td>Darren Feldman, MD</td>
<td>Memorial Sloan-Kettering Cancer Center, New York, New York, United States</td>
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<td>A. Lindsay Frazier, MD</td>
<td>Dana-Farber Cancer Institute, Boston, Massachusetts, United States</td>
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<td>Maria Luisa Garrè, MD</td>
<td>Giannina Gaslini Children's Hospital, Genoa, Italy</td>
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<td>Koichi Ichimura, MD</td>
<td>National Cancer Center Research Institute, Tokyo, Japan</td>
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<td>Rakesh Jalali, MBBS, MD</td>
<td>Tata Memorial Hospital, Mumbai, India</td>
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<td>Ching Lau, MD</td>
<td>Connecticut Children's Medical Center, Hartford, Connecticut, United States</td>
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<td>Elaine Mardis, MD</td>
<td>Nationwide Children's Hospital, Columbus, Ohio, United States</td>
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<td>Thomas Merchant, DO, PhD</td>
<td>St. Jude's Children's Research Center, Memphis, Tennessee, United States</td>
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<td>Ryo Nishikawa, MD</td>
<td>Saitama Medical University International Medical Center, Saitama, Japan</td>
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<td>Andrew Peer, PhD, MBBS</td>
<td>University of Birmingham, Birmingham, United Kingdom</td>
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<tr>
<td>Mark Randell, MD</td>
<td>Nationwide Children's Hospital, Columbus, Ohio, United States</td>
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<tr>
<td>Stephen Sands, DPay</td>
<td>Memorial Sloan-Kettering Cancer Center, New York, New York, United States</td>
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<tr>
<td>Charles Sklar, MD</td>
<td>Memorial Sloan-Kettering Cancer Center, New York, New York, United States</td>
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<tr>
<td>Azim Surani, PhD</td>
<td>Wellcome Trust/CRUK Girdwood Institute, University of Cambridge, Cambridge, United Kingdom</td>
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<tr>
<td>David Walker, MD</td>
<td>Children's Brain Tumor Research Centre, University of Nottingham, Nottingham, United Kingdom</td>
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### SYMPOSIUM FACULTY LISTING

### SESSION CO-CHAIRS – MAIN SYMPOSIUM

| Jill S. Barnholtz-Sloan, PhD | Case Western Reserve University School of Medicine, Cleveland, Ohio, United States |
| Ute Barrels, MD              | Hospital for Sick Children, Toronto, Ontario, Canada                           |
| Eric Bouffet, MD             | The Hospital for Sick Children, Toronto, Ontario, Canada                       |
| Gabrielle Calaminus, MD      | Münster University Hospital, Münster, Germany                                  |
| Andrea Cappellino, MD        | Pediatric Oncology Institute, São Paulo, Brazil                                |
| Rakesh Jalali, MBBS, MD      | Sun Yat-sen University Cancer Center, Guangzhou, China                         |
| Girish Dhall, MD             | Children's Hospital of Los Angeles, Los Angeles, California, United States     |
| Jason Fangquao, MD           | Ann and Robert H. Lurie Children's Hospital, Chicago, Illinois, United States  |
| Jonathan L. Finlay, MB ChB, FRCP | Nationwide Children's Hospital, Columbus, Ohio, United States                |
| Sharon Gardner, MD           | New York University Langone Medical Center, New York, New York City, United States |
| Koichi Ichimura, MD          | National Cancer Center Research Institute, Tokyo, Japan                        |
| Rakesh Jalali, MBBS, MD      | Tata Memorial Hospital, Mumbai, India                                         |
| Stewart Kellie, MD           | Children's Hospital at West End, Sydney, Australia                            |
| Soumen Khatua, MD            | MD Anderson Cancer Center, Houston, Texas, United States                      |
| Ching Lau, MD                | Connecticut Children's Medical Center, Hartford, Connecticut, United States    |
| Jeffrey R. Leonard, MD       | Nationwide Children's Hospital, Columbus, Ohio, United States                |
| Shannon MacDonald, MD        | Massachusetts General Hospital, Boston, Massachusetts, United States          |
| Thomas Merchant, DO, PhD     | St. Jude's Children's Research Center, Memphis, Tennessee, United States      |
| Erin Murphy, MD              | Cleveland Clinic, Cleveland, Ohio, United States                             |
SESSION CO-CHAIRS – MAIN SYMPOSIUM CONTINUED
Matthew Murray, MD
University of Cambridge, Cambridge, United Kingdom
Marvin Nelson, MD
Children's Hospital of Los Angeles, Los Angeles, California, United States
James C. Nicholson, MD
Cambridge University Hospitals NHS Trust, Cambridge, United Kingdom
Roger Parker, MD
Children's National Medical Center, Washington, DC, United States
Vinay Puduvalli, MD
The Ohio State University Wexner Medical Center, Columbus, Ohio, United States
Ibrahim Qaddoumi, MD
St. Jude Children's Research Hospital, Memphis, Tennessee, United States
Mark Ranalli, MD
Nationwide Children's Hospital, Columbus, Ohio, United States
E. Steve Roach, MD
Nationwide Children's Hospital, Columbus, Ohio, United States
Jerome Rusin, MD
Nationwide Children's Hospital, Columbus, Ohio, United States
Stephen Sands, PsyD
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Charles Sklar, MD
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Mark Souweidane, MD
Weill Cornell Medicine and New York-Presbyterian Hospital, New York, New York, United States
Azim Surani, PhD
Wellcome Trust/CRUK Gurdon Institute, University of Cambridge, Cambridge, United Kingdom
Tai-Tong Wong, MD
Taipei Medical University Hospital, Taipei, Taiwan
INTERNATIONAL POSTER MODERATORS
Blanca Diez, MD
Foundation for the Fight against Neurological Diseases of Children, Buenos Aires, Argentina
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LIFETIME ACHIEVEMENT AWARD RECIPIENTS
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Jaime Banks
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We are pleased to introduce the abstracts accepted for presentation at the Fifth International Central Nervous System Germ Cell Tumor Conference, being held June 7th through the 10th 2017 in Columbus, Ohio, USA. The first of these conferences was held in 2003 in Tokyo, organized by Dr. Masao Matsutani; the second in Los Angeles in 2005 by Dr. Jonathan Finlay; the third in 2013 in Cambridge, England, organized by Dr. James Nicholson; and the fourth by Dr. Ryo Nishikawa in Tokyo in 2015. These conferences have brought together multi-disciplinary leaders from around the world to both update one another and attempt to resolve the many controversies that have persisted in the optimal diagnosis and management of these relatively rare tumors – which are nevertheless amongst the most common primary malignant brain tumors of childhood and adolescence in East Asia. Indeed, published consensus statements have emerged from the conferences and hopefully will continue to do so, in large measure predicated upon the information discussed and provided within many of these abstracts.

Jonathan L. Finlay, MB, ChB, FRCP, Conference Chair
Arnab Chakravarti, MD, Conference Co-Chair
Jeffrey R. Leonard, MD, Conference Co-Chair

Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA

ABSTRACT TITLE KEY:

K KEYNOTE INVITED PRESENTATIONS
O ORAL ABSTRACT PRESENTATIONS
P POSTER ABSTRACTS
SS SATURDAY SYMPOSIUM INVITED PRESENTATIONS

K1. EPIDEMIOLOGY OF CENTRAL NERVOUS SYSTEM GERM CELL TUMORS.
Jill Barnholtz-Sloan, Sally S. Morley Designated Professor in Brain Tumor Research, Professor and Associate Director for Bioinformatics/Translational Informatics, Case Comprehensive Cancer Center, Case Western Reserve University School of Medicine, Cleveland, Ohio, USA.

K2. GENETIC PREDISPOSITION TO INTRACRANIAL GERM CELL TUMORS.
Ching C. Lau, Connecticut Children’s Medical Center, Jackson Laboratory for Genomic Medicine, University of Connecticut School of Medicine, Hartford/Farmington, Connecticut, USA.

K3. HEADSMART EARLY DIAGNOSIS OF BRAIN TUMORS: A NEW FOCUS FOR PRECISION MEDICINE (WWW.HEADSMART.ORG.UK).
David Walker, Children’s Brain Tumor Research Centre (CBTRC), Division of Child Health and Obstetrics and Gynecology School of Medicine, University of Nottingham, Nottingham, United Kingdom.

K4. LIFETIME ACHIEVEMENT AWARD PRESENTATION.
Jeffrey C. Allen, Professor of Pediatrics and Neurology, New York Langone Medical Center, New York, USA.

K5. FUNCTIONAL IMAGING OF CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS IN CHILDREN.
Andrew C. Peet, Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom.

K6. LIFETIME ACHIEVEMENT AWARD PRESENTATION.
Masao Matsutani, M.D., DMSci., Professor Emeritus, Department of Neuro-oncology and Neurosurgery, Saitama Medical University, Saitama, Japan.

K7. SURGICAL ASPECTS OF PRIMARY CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS.
Ryo Nishikawa. Department of Neuro-Oncology/Neurosurgery, Saitama Medical University International Medical Center, Saitama, Japan.

K8. RADIATION THERAPY MANAGEMENT OF CENTRAL NERVOUS SYSTEM GERM CELL TUMORS.
Thomas E. Merchant. Chair, Radiation Oncology Department, St. Jude Children’s Research Hospital, Memphis, Tennessee, USA.

K9. LATE MEDICAL COMPLICATIONS IN SURVIVORS OF CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS.
Charles A. Sklar, MD. Department of Pediatrics, Memorial Sloan Kettering Cancer Center, New York, USA.

K10. LATE EFFECTS AND QUALITY OF SURVIVAL OF CHILDREN AND ADOLESCENTS WITH PRIMARY CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS.
Stephen A. Sands, Director of Pediatric Neuropsychology, Memorial Sloan Kettering Cancer Center, New York, USA.

K11. PEDIATRIC MALIGNANT GERM CELL TUMORS: A COMPARISON OF THE NEURO-ONCOLOGY AND SOLID TUMOR EXPERIENCE.
A. Lindsay Frazier, Dana-Farber Cancer Institute, Harvard Medical School, Boston, Massachusetts, USA.

K12. NON-GERMINOMATOUS GERM CELL TUMORS OF THE CENTRAL NERVOUS SYSTEM: FROM CACOPHONY TO HARMONY?
Eric Bouffert, the Hospital for Sick Children, Toronto, Canada.
Maria Luisa Garré, 1 Giovanni Morana, 2 Luca Ramenghi, 3 Claudia Milansacci, 4 Armando Cama, 4 Luisella Bertoluzza, 5 Andrea Rossi, 2 Riccardo Haapu, 5 Neuro-oncology Unit, 1 Neonatology Unit, 3 Neonatology Unit, 3 Pediatrics Unit, 3 Department of Biomedical Imaging, Unit, 3 Institute of Medical Science, University of Tokyo, 7 Department of Pediatric Oncology, Children's Medical Center, Margaret Gill Center for Cancer and Blood Disorders, Children's Health, Dallas, TX 75390, USA; 6 Division of Clinical Departments of Pediatrics, 1 Molecular Biology, 2 Cell Biology, 3 Pathology, 4 and Internal Medicine, 5 University of Texas Southwestern Medical Center; 6 Department of Pathology, Massachusetts General Hospital; 1,5 Departments of Pediatrics, 1 Molecular Biology, 2 Cell Biology, 3 Pathology and Internal Medicine, 5 University of Texas Southwestern Medical Center; Margaret Cell Center for Cancer and Blood Disorders, Children's Health, Dallas, TX 75390, USA; 6,7 Department of Clinical Genome Research, Institute of Medical Sciences, University of Tokyo, Tokyo, Japan; 5,7 Department of Pediatric Oncology, Children's Hospital Dana-Farber Cancer Care, Boston, MA 02115, USA; 8 Department of Pathology, Erlangen-MC - University Medical Center, Rotterdam, Rotterdam, The Netherlands.

K14. NOVEL TREATMENT APPROACHES TO RELAPSED/REFRACTORY GERM CELL TUMORS.
Daren R. Feldman, Department of Medicine, Memorial Sloan Kettering Cancer Center, New York, USA.

K15. CENTRAL NERVOUS SYSTEM (CNS) METASTASES FROM PRIMARY SYSTEMIC GERM CELL TUMORS (GCT) OF CHILDREN, ADOLESCENTS AND YOUNG ADULTS.
Mark A. Kanali, MD, Associate Professor of Pediatrics, The Ohio State University College of Medicine, Director, Embryonal Tumor Program, Division of Hematology, Oncology and Bone Marrow Transplantation, Nationwide Children's Hospital, Columbus, Ohio, USA.

K16. MANAGEMENT OF CNS GERM CELL TUMORS IN DEVELOPING COUNTRIES.
Rakesh Jalali and Raees Tonse. Neuro Oncology Group, Tata Memorial Hospital, Mumbai, India.

K17. MANAGEMENT OF CENTRAL NERVOUS SYSTEM GERM CELL TUMORS IN CHINA.
Zhong-ping Chen, Department of Neurosurgery/Neuro-oncology, Sun Yat-sen University Cancer Center, Guangzhou, China.

K18. CELLULAR ORIGIN OF CENTRAL NERVOUS SYSTEM GERM CELL TUMORS.
Kosichi Ichimura, 1 Shintaro Fukahama, 1,2 Hiroaki Takami, 1,3 Yoshikazu Nakano, 1 Sakura Kuzumasa, 1,3 Masaos Matsutani, 2,3 Ryo Nishikawa, 2,3 on behalf of The Intracranial GERM Cell Tumor Genome Analysis Consortium. 3 Division of Brain Tumor Translational Research, National Cancer Center, Tokyo, Japan; 1 Department of Neuro-oncology/Neurosurgery, Saitama Medical University International Medical Center, Hidaka, Japan; 2,3 The Intracranial GERM Cell Tumor Genome Analysis Consortium.

K19. HUMAN GERMLINE: SPECIFICATION AND EPIGENETIC PROGRAMMING.
Azim Surani, Wellcome Trust Cambridge Research UK Giardon Institute, University of Cambridge, Tennis Court Road, Cambridge, United Kingdom.

K20. EGF RECEPTOR AND MTORC1 ARE NOVEL THERAPEUTIC TARGETS IN NON-SEMINOMATOUS GERM CELL TUMORS.
Kenneth S. Chen, 1,6 Nicholas J. Fustin, 1,6 Christina Atrekk, 1 Alhuy A. Shokadi, 1,6 Satia Stuart, 1,4 Kiyoshi Yamaguchi, 3,7 Piyal Kapur, 4 A. Lindsay Frazier, 3 Lawrence Lumm, 3 Leonard H.J. Loosjes, 3,9 Theodore Laetsch, 1,6 Dinesh Radke, 1,4 and James F. Amatruda, 1,2,5,6 Departments of Pediatrics, 1 Molecular Biology, 2 Cell Biology, 3 Pathology and Internal Medicine, 5 University of Texas Southwestern Medical Center; 6 Department of Pathology, Massachusetts General Hospital, Boston, MA 02115, USA; 8 Department of Pathology, Erlangen-MC - University Medical Center, Rotterdam, Rotterdam, The Netherlands.

K21. CHALLENGES REMAIN IN CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMOR DIAGNOSIS.
Beatre Kleinschmidt-DeMasters, Department of Neuropathology, University of Nebraska Medical Center, Omaha, Nebraska, USA.

K22. IMMUNOGNOMICS OF BRAIN TUMOURS.
Elaine R. Mardis, Institute for Genomic Medicine, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA.

01. CANADIAN PATTERNS OF PRACTICE FOR INTRACRANIAL GERM CELL TUMORS IN ADOLESCENTS AND YOUNG ADULTS.
Andrea Lo, 1,2 Normand Lapierre, 1,3 David Hodgson, 1,3 Eric Boulter, 3 James Nicholson, 4 Michael McKenzie, 2 Juliette Hukin, 5 and Karen Goddard, 2,3 Princess Margaret Cancer Centre, Toronto, Ontario, Canada; 1,3 British Columbia Cancer Agency, Vancouver, British Columbia, Canada; 2 The Hospital for Sick Children, Toronto, Ontario, Canada; 3 Addenbrooke's Hospital, Cambridge, United Kingdom; 4 and The British Columbia Children's Hospital, Vancouver, British Columbia, Canada.

02. PRIMARY CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS IN DOWN SYNDROME.
Mohamed S. Abdelbaki, 1 Jeffrey Leonard, 1,2 Joseph Torkildson, 3 Jerry Cheng, 4 Riccardo X. Wang, 4 Kenneth E. Wong, 5 Torunn Yock, 6 Girish Dhall, 5 and Jonathan L. Finlay 1 The Neuro-oncology Program, Divisions of Hematology, Oncology and BMT and Neurosurgery2, The Research Institute of Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, the Children's Hospital of Oakland, California, USA; 3 Kaiser Permanente of Southern California, Los Angeles, California, USA; 4 the Children's Center for Cancer and Blood Diseases, Children's Hospital Los Angeles, California, USA; 5 and the Radiation Oncology Program, Massachusetts General Hospital, Boston, Massachusetts, USA.

03. VISUAL COMPLAINTS IN INTRACRANIAL GERMINOMAS.
Didier Verrico, 1 Claire Pedone, 2 Philippe Thieuss, 2 Alexandre Scehmat, 4 Cécile Faure, 3,4,5 Carmen Montoloe, 4 Christian Carriz, 3,4,5 Departments of Oncology, 1 Radiology, and Radiotherapy, 3 Institut d'Hématologie et d'Oncologie Pédiatrique, Lyon, France, and the Department of Neurosurgery, Wertheimer, Bron, France.

04. NECESSITY FOR HISTOLOGICAL VERIFICATION OF GERMINOMA WITH BIFOCAL LESION, DIABETES INSIPIDUS AND NORMAL LEVELS OF TUMOR MARKERS.
Masayuki Kanamori, Hirokazu Takami, Ryuta Saito, Teiji Tominga, Koschi Ichimura, Ryo Nishikawa. Department of Neurosurgery, Tohoku University Graduate School of Medicine, Sendai, Japan.

05. MAGNETIC RESONANCE SPECTROSCOPY IN THE DIAGNOSIS OF PRIMARY CNS GERMINOMA TUMORS.
Stefan Bluin, Benita Tamrazi, Marvin D. Nelson, Department of Radiation, Division of Neuroradiology, Children's Hospital Los Angeles, Los Angeles, California, USA.

06. HEME-SEQUENCES (SUSCEPTIBILITY WEIGHTED IMAGING AND T2* GRADIENT ECHO SEQUENCES) IN MIDLINE AND OFF-MIDLINE INTRA-CRANIAL GERM CELL TUMORS (GCT).
Giovanni Morana, 1 Cesar Augusto Alves, 2 Domenico Tortora, 1 Maria Savina Severino, 1 Paolo Nozza, 3 Armando Cama, 4 Antonio Verrico, 5 Claudia Milansacci, 5 Andrea Rossi, 1 Maria Luiu Garret, 5 The Neuro-oncology Unit, Istituto Giannina Gaslini, Genova, Italy; 1 The Radiology Institute, Hospital das Clinicas, Sao Paulo, Brasil; 2 The Pathology Unit, Istituto Giannina Gaslini, Genova, Italy; 3 The Neurosurgery Unit, Istituto Giannina Gaslini, Genova, Italy; 4 and the Neuro-oncology Unit, Istituto Giannina Gaslini, Genova, Italy.

07. INCIDENCE OF OPTIC NERVE INVOLVEMENT IN PEDIATRIC INTRACRANIAL GERM CELL TUMORS.
Shannon M. MacDonald, 1 Guy Savir, 1 Joanna Y. Chin, 2 Roshan V. Sethi, 2 Claire P. Goebel, 1 Otto Rapalino, 3 Torunn I. Yock, 1 Nancy J. Tarbell, 1 and Paul Caruso. 3 Department of Radiation Oncology, Massachusetts General Hospital, Boston, Massachusetts, USA.

08. TIME FOR A CHANGE IN STRATEGY: RADICAL SURGICAL RESSECTION OF NEWLY DIAGNOSED PRIMARY CENTRAL NERVOUS SYSTEM MIXED MALIGNANT GERM CELL TUMORS.
Jeffrey R. Leonard and Jonathan L. Finlay, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA.
ABSTRACTS BY TITLE

09. STRATEGY FOR CENTRAL NERVOUS SYSTEM GERM CELL TUMORS WITH RESIDUAL DISEASE FOLLOWING CHEMOTHERAPY AND RADIOTHERAPY.
Tomonari Suzuki,1 Eita Uchida,1 Yohi Miyake,1 Yuiuki Kuboyoshi,1 Jun-ichi Adachi,1 Takamitsu Fujimaki,2 Takakiya Yamagishi,3 Kazuhiko Mochizuki4 and Ryo Nishikawa.1 Saitama Medical University International Medical Center, Hidaka, Japan,1 Saitama Medical University Hospital, Saitama, Japan,2 and Jikei University School of Medicine, Tokyo, Japan,3

010. DOSE-REDUCED RADIOTHERAPY WITH PLATINUM-BASED CHEMOTHERAPY HAS IMPROVED QUALITY OF LIFE IN THE LONG-TERM SURVIVORS WITH CENTRAL NERVOUS SYSTEM GERMINOMA.
Kazuhiko Sugiyama,1 Fumiuki Yamasaki,2 Kao Kuruizumi,2 and Kazunori Arita.3 Department of Clinical Oncology, Hiroshima University Hospital,1 Department of Neuroradiology, Hiroshima University Hospital2 and Department of Neurosurgery, Kagoshima University Hospital.3

011. THE RELATIONSHIP BETWEEN VENTRICULAR SIZE AND WHOLE BRAIN IRRADIATION DOSE IN CENTRAL NERVOUS SYSTEM GERM CELL TUMORS.
Stephanie Toll, Marjorie Jones, Emi J. Yoshida, Arthur Olich, Girish Dhall and Kenneth Wong. The Children's Hospital of Los Angeles, Los Angeles, California, USA.

012. EMERGENCY RADIOTHERAPY FOR RAPID DETERIORATION OF PATIENTS WITH CRITICAL INTRACRANIAL GERM CELL TUMORS - TWENTY CASE REPORTS.
Linbo Cai, Xiaoguang Qiu, Mingzuo Lai, Weiping Hong, Juan Li, Jiangfen Zhou, Ping Zhang, Lichao Wang, The Department of Oncology, Guangdong 999 Brain Hospital, Guangzhou, China.

013. LONG-TERM EXPERIENCE WITH WHOLE VENTRICULAR IRRADIATION (WVI) FOR CENTRAL NERVOUS SYSTEM (CNS) GERMINOMA.
Alice Indini, Veronica Biasioni, Elisabetta Sivilli, Barbara Diletto, Emilia Pecori, Lorenzo Gandola and Maura Massimino, Institute for Advanced Studies, Milan, Italy.

014. A 40-YEAR-MULTI-INSTITUTIONAL REVIEW OF INTRACRANIAL GERM CELL TUMORS IN ADOLESCENTS AND YOUNG ADULTS.
Andrea Lui,1,2,6,7 Karen Goddard,2,7 David Hodgson,1,2,7 Jennifer Bang,1 Scott Ytseley,2,7 Eric Bouffet,2,7,8 Simone S Aguas,1,2 Elvis Valera5 and Nausha 5 da Silva.1 IOP/GRACCC/UNIFESP; Sao Paulo, Brazil,1 National Institute of Cancer, Sao Paulo, Brazil,2 Hospital de Cancer de Barretos, Barretos, Sao Paulo, Brazil,3 Centro Infantil Boldrini, Campinas, Sao Paulo, Brazil,4 Brazilian Government, Brazil,5 and FMRP, Ribeirão Preto, Sao Paulo, Brazil,5

015. NEUROCOGNITIVE OUTCOMES AND DOSIMETRIC CORRELATES IN CENTRAL NERVOUS SYSTEM GERM CELL TUMORS: THE ST. JUDE EXPERIENCE.
Christopher L. Tinkle, Sudharsan Srinivasan, Sarah Scott, Yimei Li, Arthur Olch, Girish Dhall and Kenneth Wong. The Children's Hospital of Los Angeles, Los Angeles, California, USA,1 and Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA,2

016. NEUROCOGNITIVE OUTCOMES AND PSYCHOLOGICAL FUNCTIONING IN PEDIATRIC PATIENTS WITH INTRACRANIAL GERM CELL PROTOCALS.
Irene Slavc,1 Ulrike Leiss,1 Andreas Peyrl,1 Monika Chocholus,1 Amedeo Azizi,1 Karin Dieckmann,2 Thomas Czech,3,6,7 Departments of Pediatrics,1 Radiotherapy2 and Neurosurgery,3 Medical University of Vienna, Vienna, Austria,1 and  Addenbrooke's Hospital, Cambridge, United Kingdom.2

017. THE SECOND INTERIM REPORT OF THE MULTI-INSTITUTIONAL, PROSPECTIVE PHASE II STUDY OF RADIO-CHEMOTHERAPY FOR PRIMARY INTRACRANIAL GERMINOMAS IN JAPAN.

018. VALUE OF POSITIVE CEREBROSPINAL FLUID CYTOLOGY WITHOUT FURTHER MACROSCOPIC DISSEMINATION IN PATIENTS WITH INTRACRANIAL GERMINOMA. IS THERE ROOM FOR REDUCTION OF TREATMENT?
Gabriele Calaminus1, Didier Frappaz9, Claire Alapetite,5 Rolf-Dieter Kortmann,3 Maria Luisa Garre,6 Umberto Ricardi,4 Frank H. Saran,7 Tomas Czech8 and James C. Nicholson2 on behalf of the SIOP CNS GCT Group. University Hospitals, Bonn, Germany,1 Centre Leon Berard, Lyon, France,9 Institut Curie, Paris, France,3 University of Leipzig, Leipzig, Germany,3 University of Turin, Turin, Italy,4 Galinski Children's Hospital, Genova, Italy,6 The Royal Marsden Hospital, United Kingdom,7 Medical University of Vienna, Vienna, Austria9 and Addenbrooke's Hospital, Cambridge, United Kingdom.2

019. PRELIMINARY RESULTS OF A BRITISH CENTRAL NERVOUS SYSTEM GERM CELL TUMOR CONSORTIUM PROTOCOL.
Andrea Cappellano,1 Jonathan L. Finlay,2 Bruna Manzano,3 Daniela Barbosa,1 Sergio Cavalcante,1 Patricia A D'tosti,1 Frederico A Silva,1 Simone S Aguas,1 Elvis Valera5 and Nausha S da Silva.1 IOP/GRACCC/UNIFESP; Sao Paulo, Brazil,1 National Institute of Cancer, Sao Paulo, Brazil,2 Hospital de Cancer de Barretos, Barretos, Sao Paulo, Brazil,3 Centro Infantil Boldrini, Campinas, Sao Paulo, Brazil,4 Brazilian Government, Brazil,5 and FMRP, Ribeirão Preto, Sao Paulo, Brazil,5

020. CLINICAL AND NEUROPSYCHOLOGICAL OUTCOME OF PEDIATRIC NON-MIDLINE CENTRAL NERVOUS SYSTEM GERMINOMA TREATED WITH CHEMOTHERAPY AND REDUCED DOSE/VOLUME IRRADIATION: CHILDREN'S HOSPITAL LOS ANGELES EXPERIENCE.
Kee Kiat Yee,1 Kimberly Kayser,1 Ashley Magel,1 Jessica Lenihan,1 Hung N Tran,1 Kenneth Wong,1 Nathan Robinson,1 Jonathan Finlay,1,2 and Girish Dhall.1 Children's Center for Cancer and Blood Diseases, Division of Hematology, Oncology and Blood Marrow Transplantation, Children's Hospital Los Angeles, Norris Comprehensive Cancer Center, Keck School of Medicine, University of Southern California, Los Angeles, California,1 and Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA,2

021. IMPACT ON OUTCOME OF HUMAN CHORIONIC GONADOTROPIN (HCG) ELEVATIONS ALONE IN SIOP CNS GCT 96 PATIENTS TREATED AS NON-GERMINOMATOUS/SECRETING GERMINOMA CELL TUMORS (NGCCT) – ARE WE OVER-TREATING GERMINOMA?
James C. Nicholson1, Claire Alapetite5, Rolf-Dieter Kortmann3, Maria Luisa Garre,6 Umberto Ricardi,4 Frank H. Saran7, Tomas Czech8, Didier Frappaz9 and Gabriele Calaminus2, on behalf of the SIOP CNS GCT Group. University Hospitals, Cambridge, United Kingdom,1 Münster, Germany,2 Leipzig, Germany,3 Turin, Italy,4 Institut Curie, Paris, France,5 Galinski Children's Hospital, Genova, Italy,6 the Royal Marsden Hospital, London, United Kingdom,7 Vienna, Austria,8 and Centre Leon Berard, Lyon, France,9

022. SINGLE INSTITUTION EXPERIENCE WITH INTRACRANIAL GERM CELL TUMORS TREATED ACCORDING TO THE SIOP CNS GCT PROTOCOLS.
Irene Slavc,1 Ulrike Leiss,1 Andrea Poyl,1 Monica Chocholus,1 Amedeo Azizi,1 Karin Dieckmann,2 Thomas Czech,3 Departments of Pediatrics,1 Radiotherapy2 and Neurosurgery,3 Medical University of Vienna, Vienna, Austria,1
023. NATIONAL SURVEY FOR RELAPSED CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS (GCT) BY THE JAPAN CHILDREN’S CANCER GROUP.

Keita Terashima, 1 Maonori Yoshida 1, Ryo Nishikawa 2, Toshitomo Kume 3, Fumiyuki Yamasaki 4, Yuki Yuta 5, Yoji Sashida 6, Tetsuya Takimoto 7 and Jun Ichihara 8. Children’s Cancer Center, National Center for Child Disease and Development, Tokyo, Japan,1 the Department of Brain and Spinal Cord Tumors, Saitama Medical University International Medical Center, Saitama, Japan,2 Department of Neurosurgery, Kitasato University, Minato, Tokyo, Japan,3 Department of Neurosciences, Hiroshima University, Hiroshima, Japan,4 Department of Hematology-Oncology, Tokyo Metropolitan Children’s Medical Center, Tokyo, Japan,5 Department of Pediatrics, Tohoku University, Sendai, Japan,6 Division of Radiation and Research for Childhood Cancer, National Center for Child Disease and Development, Tokyo, Japan,7and the Department of Pediatric Hematology and Oncology, Osaka City General Hospital, Osaka, Japan.8

024. RELAPSE PATTERN AND TREATMENT OUTCOME OF RECURRENT CENTRAL NERVOUS SYSTEM GERM CELL TUMORS.

Takasaki Yanagisawa, Tomonori Suzuki, Kohki Fukusaki, Jun-ichi Adachi, Kazuhiko Mihashi, Ryo Nishikawa, Takamitsu Fujimaki, Masao Matsutani, Masayoshi Yamaoa, W. Oyama, Masaharu Akiyama, Yuichiro Nonaka, Yasuharu Akasai, Yuichi Murayama. Division of Pediatric Neuro-oncology, Jikei University School of Medicine, Tokyo, Japan and the Saitama International Medical Center, Hidaka, Japan.

025. NEW APPROACHES TO THE MANAGEMENT OF RECURRENT CENTRAL NERVOUS SYSTEM (CNS) GERMINOMA IN THE CURRENT MOLECULAR ERA.

Diana S. Osorio, Jeffrey Leonard and Jonathan L. Finlay, The Neuro-oncology Program, the Division of Hematology, Oncology and BMT, and the Division of Neurosurgery, The Research Institute at Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA.

026. TREATMENT AND OUTCOMES OF CENTRAL NERVOUS SYSTEM NON-GERMINOMATOUS GERM CELL TUMORS WITH EARLY RELAPSE DURING INDUCTION CHEMOTHERAPY.

Hung N. Tran, Ashley Margol, Nathan Robison, Kenneth Wong, Jonathan L. Finlay and Girish Dhall. Children’s Hospital Los Angeles, Los Angeles, California, USA.

027. NEW APPROACHES TO THE MANAGEMENT OF RECURRENT CENTRAL NERVOUS SYSTEM (CNS) MIXED MALIGNANT GERM CELL TUMORS (MMGCT) IN THE CURRENT MOLECULAR ERA.

Mohamed S. AbdelBaki and Jonathan L. Finlay, Neuro-oncology Program, Division of Hematology, Oncology and BMT, Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA.

028. SEVERE CENTRAL NERVOUS SYSTEM (CNS) DAMAGE FOLLOWING HIGH DOSE IRRADIATION AND SUBSEQUENT MULTIPLE CYCLE MARROW-ABLATIVE CHEMOTHERAPY FOR PEDIATRIC/ADOLESCENT RECURRENT CNS MALIGNANT GERM CELL TUMORS.

Rolla Abou-Arja,1 Girish Dhall,2 Tanja Teksator,3 Alan Ikeda,4 Erin Murphy,3 Kenneth E. Wong2 and Jonathan L. Finlay1. Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA1, the Children’s Hospital Los Angeles and the University of Southern California, Los Angeles, California, USA2, the Cleveland Clinic, Cleveland, Ohio, USA3, and the Children’s Specialty Center of Nevada, Las Vegas, Nevada, USA4.

029. CENTRAL NERVOUS SYSTEM GERM CELL TUMORS: EXPERIENCE OF A REFERRAL CENTER IN GUATEMALA.

Ana Verónica Girón1, MA Ortega1, M Castellanos1, F. Aníñilón1, D. Osoiro2, U. Bartels.1 Unidad Nacional de Oncología Pediátrica (UNOP), Guatemala, Central América,1 Nationwide Children’s Hospital, Columbus, Ohio, United States 2 and the Department of Pediatric Hematology and Oncology, Osaka City General Hospital, Osaka, Japan.8

030. NEW APPROACHES TO THE IRRADIATION-FREE MANAGEMENT OF CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMORS (GCT) IN THE DEVELOPING WORLD.

Jonathan L. Finlay and Diana S. Osorio, Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA.

031. TOWARDS NON-INVASIVE MICRONRNA-BASED DIAGNOSIS AND RISK-STRATIFICATION OF CENTRAL NERVOUS SYSTEM (CNS) MALIGNANT GERM CELL TUMORS: A PROPOSED PATHWAY.

Laura Esposito,1 Dawn Ward,1 Isabella Syring,2 Jorg Ellinger,2 James Nicholson,3 Nicholas Coleman,1 4,* and Matthew Murray,1, 3 The Department of Pathology, University of Cambridge, Cambridge, UK,1 the Department of Urology, University Hospital Bonn, Bonn, Germany,2 the Department of Paediatric Haematology and Oncology, Addenbrooke’s Hospital, Cambridge, UK,3 and the Department of Histopathology, Addenbrooke’s Hospital, Cambridge, UK 4 *Joint senior authors.

032. CORRELATION OF CLINICAL AND MOLECULAR ASPECTS OF CENTRAL NERVOUS SYSTEM GERM CELL TUMORS: A CLINICAL AND RESEARCH EXPERIENCE IN A COHORT SERIES IN TAIWAN.

Tai-Tong Wong,1 Tsung-Han Huieh,1 Yun-Ru Lai,1 Ting-Yu Chang,1 Yun-Yen,1 Yen-Lin Lai,2 Hsin-Lun Lee,3 Kevin Li-Chun Huieh,1 Moh-Li Liang,2 Robert Hsin-Hung Chan,2 Donald M. Hsio,2 Yi-Wen Chen,2 Feng-Chi Chen,2 Diego Shih-Chih Lin2 and Yi-Yen Lee2. Pediatric Brain Tumor Program, Taipei Medical University Hospital (TMUH)1 and the Pediatric Brain Tumor Study Group, Taipei Veterans General Hospital (VGH),2 Taipei, Taiwan.

033. PD-L1 AND PD-1 ARE ASSOCIATED WITH TUMOR-INFILTRATING LYMPHOCYTES IN INTRACRANIAL GERMINOMA.

Yoshida Akawara,1 Bin Liu, Yohei Mineshara, Masahiro Tanji, Ryuta Yokogawa, Daiki Murata, Ko-ichi Fujimoto, Nobuyuki Fukui, Yukinori Terada, Enzuo Hattori, Susumu Miyamoto, Department of Neurosurgery, Kyoto University Graduate School of Medicine, Kyoto, Japan.

P1. DIAGNOSTIC YIELD OF SERUM AND CEREBROSPINAL FLUID TUMOR MARKERS IN PINEAL REGION TUMORS.

William Gump, Division of Neurosurgery, Norton Children’s Hospital, Louisville, Kentucky, USA.

P2. THE EYES AS THE WINDOW: OPTIC ATROPHY WITH CENTRAL NERVOUS SYSTEM (CNS) GERM CELL TUMOR.

Gestin F. Keating, James A. Garrity and Laurence J. Eckel. The Mayo Clinic, Rochester, Minnesota, USA.

P3. RETINAL INFILTRATION BY GERMINOMATOUS ELEMENTS FROM A PRIMARY (LOCALLY RECURRENT) CENTRAL NERVOUS SYSTEM (CNS) MIXED MALIGNANT GERM CELL TUMOR (MATURE TERATOMA WITH PURINE GERMINOMA).

Melissa Stallings, Lance Gomérez, Christopher R. Perason, Jonathan L. Finlay, Randal Olshefski, Daniel R. Boat. Nationwide Children’s Hospital and The Ohio State University, Columbus, Ohio, USA.

P4. CENTRAL NERVOUS SYSTEM (CNS) GERMINOMA RADIOGRAPHICALLY MIMICKING GLIOMATOSIS CEREBRI.

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P5. LYMPHOCYTIC HYPOPHYSITIS WITH SUBSEQUENT FINDING OF CENTRAL NERVOUS SYSTEM GERMINOMA: A CASE REPORT.

Mauro Merx, Maira Cynthia Fuentez, Enrique Jimenez, Rodrigo Dussan, Nicolas Uchebe, Juan Lammoglia, Martha Sanchez-Lopez, Adriana Flores, Maria Soto, Juan Lopez, Victor Rozo, Dolly Diaz. Hospital Universitario Fundación Santa Fe de Bogotá. Bogotá D.C. Colombia.


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COLUMBUS WELCOMES

The 5th International CNS Germ Cell Tumor Symposium

Columbus, the 15th largest city in the country (right behind San Francisco), as well as the largest and fastest-growing city in Ohio, is a smart and open community whose dynamic convention package fits the needs of every attendee. Located within a one-day drive or one-hour flight from more than half of the U.S. Population, Ohio’s state capital is easily accessible for all.

Upon arrival, attendees love exploring the place that is fast becoming known as one of the nation’s most creative, forward-thinking and exciting cities. Celebrated for its incredible arts, entertainment, fashion and culinary offerings; exciting collegiate and professional sports teams and events; and spectacular riverfront with a sprawling ribbon of parkland on the Scioto Mile through downtown, this city on the move has something for everyone.

LIVELY URBAN ENTERTAINMENT DISTRICTS

Convention attendees are right in the middle of “Five on High” – the five-mile span of High Street connecting downtown’s districts – packed with entertainment, restaurants and shops. Many of Columbus’ unique neighborhoods are accessible on foot, including the cool galleries of the Short North Arts District, awesome architecture of Victorian Village, named one of America’s most beautiful neighborhoods by Thistlist, and the energetic crowds of the Arena District. Venture north, and you’ll find yourself in The Ohio State University District. Or, take a short CBUS ride south to check out quaint and Historic German Village with a stop in the Brewery District along the way.

WORLD-CLASS ARTS & CULTURE

The city’s art scene is bustling with creativity, leading it to be named one of the “30 Most Fun Places to Live in the U.S.” by U.S. News & World Report and one of “17 Must-Visit Destinations in 2017” by Expedia. Check out Shadowbox Live, America’s largest resident theater company, don’t miss the world-class visual art at the Columbus Museum of Art, take in what ARTNews calls one of the top art collections in the world at The Pizzuti Collection or view the largest collection of local artists just by walking the halls of the Greater Columbus Convention Center.

A FOODIE’S PARADISE

As Food Republic said, “If you can’t find excellent places to eat in Columbus, you’re no food enthusiast.” There are more than 100 restaurants within walking distance of the convention center alone, including the North Market, where you’ll find an array of fresh and prepared foods. Explore the Columbus Ale and Coffee Trails, and don’t miss Columbus-based Jeni’s Splendid Ice Creams from well known, James Beard Award-winning cookbook author Jeni Britton Bauer, called one of the best ice cream spots in the U.S. by Food & Wine.

FASHION-FORWARD

Columbus has the third-highest concentration of fashion designers in the country, behind New York and Los Angeles. Hit up the Short North’s eclectic boutiques or check out Fashion, dubbed the “Rodies Drive of the Midwest” by USA Today. To this day, Easton serves as a blueprint for the modern shopping center thanks to the brilliant minds behind it, including Les Wexner, founder of L-Brands (Victoria’s Secret, Bath & Body Works, etc.), one of five Fortune 500 companies headquartered in Columbus.

TOP-RANKED ATTRACTIONS

Hang out in the Heart of Africa at “Jungle” Jack Hanna’s home zoo, the Columbus Zoo and Aquarium. Get hands-on at Columbus Skyline, the top ranked science center loved by kids and adults of all ages. Check out Franklin Park Conservatory and Botanical Gardens, the only botanical garden in the world with a permanent collection of glass artwork by Dale Chihuly. Let loose a little at Flowerless Scarf Downs or Hollywood Casino Columbus.

RESPECTED SPORTS SCENE

The Arena District is home to NHL’s Columbus Blue Jackets, as well as The Columbus Crew, Triple-A baseball affiliate of the Cleveland Indians, whose home stadium, Huntington Park, was named “Ballpark of the Year” four times in its first six years of operation. Nearby MLS’ Columbus Crew SC play at MAPFRE Stadium, the first soccer-specific stadium built in the country. Columbus is also home to The Ohio State Buckeyes, winners of the first College Football Playoff National Championship and the Jack Nicklaus Museum, a tribute to the Columbus native and golf legend.

GETTING HERE AND AROUND

John Glenn Columbus International Airport offers nonstop service to 55 destinations and is just eight miles or 10 minutes from downtown, a short ride on COTA’s AirConnect. Once downtown, hop on the free CBUS circular or use alternative transportation services such as Uber, Lyft, CDTA (bike-sharing) and Car2Go to explore beyond the city limits.

AirConnect | Express bus service runs between John Glenn International, the Greater Columbus Convention Center (GCCC) and downtown hotels. The connector stops at luggage claim every 30 minutes and costs $2.75 each way.

CBUS | The Central Ohio Transit Authority (COTA) operates bus service in Columbus. The CBUS is a free downtown circulator that runs every 10-15 minutes from the Short North Arts District in the north to the Brewery District/German Village in the south, with stops at many popular downtown locations along the way.


STILL CURIOUS?

• Columbus won the $40 million U.S. Department of Transportation Smart City Challenge.
• The Washington Post calls Columbus the “new destination for food lovers.”
• Time has named Columbus among the country’s top big cities and best places to live for millennials.
• According to Forbes, Columbus is the #1 opportunity city in the country.

It’s our pleasure to assist you with an amazing Columbus experience. To learn more, visit experiencecolumbus.com, follow us on Twitter @expcolts or find us on Facebook.