

# twin research and human genetics

The official Journal of the International Society for Twin Studies and the Human Genetics Society of Australasia

## SPECIAL ISSUE

Twin family registries worldwide: An important resource for scientific research

### Guest Editors

Yoon-Mi Hur, Leonie H. Bogl, Juan R. Ordoñana,  
Jeanette Taylor, Sara A. Hart, Catherine Tuvblad,  
Eivind Ystrom, Christine Dalgård, Axel Skytthe  
and Gonneke Willemsen

Volume 22 Number 6

December 2019



# twin research and human genetics



The official journal of the  
**International Society  
for Twin Studies** and the  
**Human Genetics Society  
of Australasia**

*Twin Research and Human Genetics* is the official journal of the International Society for Twin Studies and, as such, is the successor journal to *Acta Geneticae Medicae et Gemellologiae*, which was founded in 1952 by Luigi Gedda. He edited it until its cessation in 1998, with Paolo Parisi as Acting Editor and then Executive Editor from 1968 to 1992. *Acta* became the official journal of ISTS when the society was established in 1974. The subtitle *Twin Research* was adopted in 1979. It was published by The Mendel Institute in Rome, except for the years 1979 to 1983, when it was published jointly with Alan R. Liss in New York.

*Twin Research* itself was founded in 1998 by Robert Derom, who edited it in 1998 and 1999. It has been edited by Nick Martin since 2000. It was published by Stockton Press (which became part of Nature Publishing Group) from 1998 to 2000, by Australian Academic Press from 2001 to 2012, and by Cambridge University Press since 2012.

The title *Twin Research and Human Genetics* was adopted from the beginning of Volume 8 in 2005 and is a translation of *Acta Geneticae Medicae et Gemellologiae*, Luigi Gedda's original title.

In 2008, *Twin Research and Human Genetics* was also adopted as the official journal of the Human Genetics Society of Australasia.

## Editor

Nicholas G. Martin, *Brisbane*

## Associate Editors

### CLINICAL GENETICS

Petra Zwijnenburg, *Amsterdam*

### BEHAVIOR GENETICS

Dorret Boomsma, *Amsterdam*

### EPIGENETICS

Jeff Craig, *Melbourne*

### TWIN REGISTRIES

Yoon-Mi Hur, *Jeonnam, South Korea*

### COMPLEX DISEASES

Jaakko Kaprio, *Helsinki*

### ENDOCRINOLOGY

Cornelis Lambalk, *Amsterdam*

### HUMAN GENETICS

Jozef Gecz, *Adelaide*

### NEWS & VIEWS

Nancy Segal, *Fullerton, CA*

### FETAL MEDICINE

Asma Khalil, *London*

### PSYCHIATRIC GENETICS

Wendy Slutsk, *Columbia, MO*

### SOCIAL SCIENCES

Levente Littvay, *Budapest*

### STATISTICAL MODELING

Michael Neale, *Richmond, VA*

## Book Review Editor

Dorret Boomsma, *Amsterdam*  
di.boomsma@psy.vu.nl

## Editorial Board

Isaac Blickstein, *Rehovot*

Charles Boklage, *Greenville*

Andreas Busjahn, *Berlin*

Kaare Christensen, *Odense*

Catherine Derom, *Leuven*

Lindon Eaves, *Richmond, Virginia*

David Evans, *Bristol*

Johan Fellman, *Helsinki*

Jack Goldberg, *Seattle*

Judith Hall, *Vancouver*

Jennifer Harris, *Oslo*

Yoko Imaizumi, *Suita City*

Kirsten Kyvik, *Odense*

Barbara Luke, *Miami*

Nancy Pedersen, *Stockholm*

Daniel Pérusse, *Montréal*

Robert Plomin, *London*

Danielle Posthuma, *Amsterdam*

Shaun Purcell, *Boston*

Roger Short, *Melbourne*

Tim Spector, *London*

Antonia Stazi, *Rome*

Martine Thomis, *Leuven*

Karen Thorpe, *Brisbane*

Mark Umstad, *Melbourne*

## Subscription Rates 2019

Individual subscriptions to *Twin Research and Human Genetics* as members of the International Society for Twin Studies (ISTS) and the Human Genetics Society of Australasia (HGSA):  
I YEAR INDIVIDUAL SUBSCRIPTION

Full member ..... AUD 180  
Nonprofessional/  
retired member ..... AUD 140  
Student member ..... AUD 100

For those members who wish to receive a printed copy, an additional fee of AUD 120 may be paid.

ISTS membership application or renewal can be made online at <https://genepi.qimr.edu.au/ists/ists.cgi> Alternatively, the Word document is available upon inquiry from [ISTS@qimrberghofer.edu.au](mailto:ISTS@qimrberghofer.edu.au)

### INSTITUTIONAL SUBSCRIPTION RATES

This journal is published 6 times per year.  
The institutional rates (excluding VAT) are:

	Electronic Only
Australia	842 AUD
N America	784 USD
UK and ROW	506 GBP

EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Prices include delivery by air when appropriate. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan.

### Orders and subscription enquiries should be addressed to:

Cambridge University Press, Journals Fulfillment Department, UPH, Shaftesbury Road, Cambridge CB2 8BS, UK

### Orders from N America should be addressed to:

Cambridge University Press, 1 Liberty Plaza, Floor 20, New York, NY 10006, USA

*Twin Research and Human Genetics* and all other Cambridge Journals can be found at [cambridge.org/core](http://cambridge.org/core)

## ISTS Website

[www.ists.qimr.edu.au](http://www.ists.qimr.edu.au)

## Indexing/Abstracting

This journal is indexed in the following databases: MEDLINE/PubMed, EMBASE/Excerpta Medica, PsycINFO, Science Citation Index®, Journal Citation Reports/Science Edition, Science Citation Index Expanded® (available as the ISI Web of Science®), Current Contents®/Clinical Medicine, Current Contents®/Life Sciences

## E-mail Address for Manuscript Submission

See inside back cover for author instructions.

## Editorial Office

Nicholas G. Martin

Editor

*Twin Research and Human Genetics*

QIMR Berghofer Institute of Medical Research

Brisbane Qld 4029 Australia

E-mail: [ISTS@qimrberghofer.edu.au](mailto:ISTS@qimrberghofer.edu.au)

Covering all areas of human genetics with an emphasis on twin studies, genetic epidemiology, psychiatric and behavioral genetics, and research on multiple births in the fields of epidemiology, genetics, endocrinology, fetal pathology, obstetrics and pediatrics.

*Twin Research and Human Genetics* is published six times annually and issued to all financial ordinary, institutional and student members of ISTS and HGSA.

Copyright in all articles rests with authors. A limited set of permanent copyright permission licences has been granted by authors to the publisher to allow publication in this journal. Rights in the reproduction and distribution of the published articles as visual facsimiles of this published edition by either mechanical or digital means is controlled by the publisher and any distributions by CAL for copying of an author's work are due to the publisher in the first instance. All other rights in the words contained in this edition are controlled by the authors. Authors are therefore free to adapt and/or republish the words making up their own articles either online or in print.

Published by Cambridge University Press on behalf of Australian Academic Press Pty Ltd. and the International Society of Twin Studies. Cambridge University Press, University Printing House Shaftesbury Road Cambridge CB2 8BS, UK [www.cambridge.org](http://www.cambridge.org)

## Editorial

### Twin Family Registries Worldwide: An Important Resource for Scientific Research

Yoon-Mi Hur, Leonie H. Bogl, Juan R. Ordoñana, Jeanette Taylor, Sara A. Hart, Catherine Tuvblad, Eivind Ystrom, Christine Dalgård, Axel Skytte and Gonneke Willemsen

427

## Articles

### Twins Research Australia: A New Paradigm for Driving Twin Research

Kate Murphy, Janine Lam, Tessa Cutler, Jess Tyler, Lucas Calais-Ferreira, Shuai Li, Callie Little, Paulo Ferreira, Jeffrey M. Craig, Katrina J. Scurrah and John L. Hopper

438

### Epigenetic Influences on Neurodevelopment at 11 Years of Age: Protocol for the Longitudinal Peri/Postnatal Epigenetic Twins Study at 11 Years of Age (PETS@11)

Pamela Leong, Yuk Jing Loke, Richard Saffery, Tim Silk, Alice Burnett, Elisha Josev, Katrina Scurrah, Christiane Theda, Anna Czajko, Emmanuel PK Pua, Marc L Seal and Jeffrey M Craig

446

### The East Flanders Prospective Twin Survey (EFPTS): 55 Years Later

Catherine Derom, Evert Thiery, Bart P.F. Rutten, Hilde Peeters, Marij Gielen, Esmée Bijnen, Robert Vlietinck and Steven Weyers

454

### TwinssCan — Gene-Environment Interaction in Psychotic and Depressive Intermediate Phenotypes: Risk and Protective Factors in a General Population Twin Sample

Lotta-Katrin Pries, Clara Snijders, Claudia Menne-Lothmann, Jeroen Decoster, Ruud van Winkel, Dina Collip, Philippe Delespaul, Marc De Hert, Catherine Derom, Evert Thiery, Nele Jacobs, Marieke Wichers, Sinan Guloksuz, Jim van Os and Bart P. F. Rutten

460

### The University of São Paulo Twin Panel: Current Status and Prospects for Brazilian Twin Studies in Behavioral Research

Emma Otta, Eloisa de Souza Fernandes, Jonas Arantes Bueno, Keven Leandro dos Santos, Nancy L. Segal, Tania Kiehl Lucci, Isabella França Ferreira, Gustavo Crivello Cesar, Vinicius Frayne David, David Pires Tatit, Paula Coeli Araújo Short, Lucas Outeda Fernandes, Ana Carla Crispim, Maria Lívia Tourinho Moretto, Nara Cortes Andrade, Sylvia Corte, Patricia Renovato Tobo, Carla Regina Barrichello, Regina Célia Gomes de Sousa, Mauro Dias Silva Júnior, Vera Silvia Bussab and Fernando José Leite Ribeiro

467

### The Quebec Newborn Twin Study at 21

Michel Boivin, Mara Brendgen, Ginette Dionne, Isabelle Ouellet-Morin, Lise Dubois, Daniel Pérusse, Philippe Robae, Richard E. Tremblay and Frank Vitaro

475

### The Chinese National Twin Registry: A Unique Data Source for Systems Epidemiology of Complex Disease

Tao Huang, Wenjing Gao, Jun Lv, Canqing Yu, Tao Wu, Shengfeng Wang, Chunxiao Liao, Lu Meng, Dongmeng Wang, Zhaonian Wang, Zengchang Pang, Min Yu, Hua Wang, Xianping Wu, Zhong Dong, Fan Wu, Guohong Jiang, Xiaojie Wang, Yu Liu, Jian Deng, Lin Lu, Weihua Cao and Liming Li

482

### The Beijing Twin Study (BeTwist): An Update

Dandan Bi, Xinying Li, Jie Chen, Nengzhi Jiang and Jianxin Zhang

486

### The Guangzhou Twin Eye Study: 2019 Update

Xiaohu Ding, Wei Wang, Jane Scheetz and Mingguang He

492

### The Danish Twin Registry: An Updated Overview

Dorthe Almind Pedersen, Lisbeth Aagaard Larsen, Marianne Nygaard, Jonas Mengel-From, Matt McGue, Christine Dalgård, Lars Hvidberg, Jacob Hjelmborg, Axel Skytte, Niels V. Holm, Kirsten Ohm Kyvik and Kaare Christensen

499

### Twins Early Development Study: A Genetically Sensitive Investigation into Behavioral and Cognitive Development from Infancy to Emerging Adulthood

Kaili Rimfeld, Margherita Malanchini, Thomas Spargo, Gemma Spickernell, Saskia Selzam, Andrew McMillan, Philip S. Dale, Thalia C. Eley and Robert Plomin

508

(CONTINUED OVER)

# contents

continued

Children of the Twins Early Development Study (CoTEDS): A Children-of-Twins Study <i>Yasmin I. Ahmadzadeh, Thalia C. Eley, Robert Plomin, Philip S. Dale, Kathryn J. Lester, Bonamy R. Oliver, Andrew McMillan and Tom A. McAdams</i>	<b>514</b>
TwinsUK: The UK Adult Twin Registry Update <i>Serena Verdi, Golboo Abbasian, Ruth C. E. Bowyer, Genevieve Lachance, Darioush Yarand, Paraskevi Christofidou, Massimo Mangino, Cristina Menni, Jordana T. Bell, Mario Falchi, Kerrin S. Small, Frances M. K. Williams, Christopher J. Hammond, Deborah J. Hart, Timothy D. Spector and Claire J. Steves</i>	<b>523</b>
FinnTwin16: A Longitudinal Study from Age 16 of a Population-Based Finnish Twin Cohort <i>Milla Kaitosaaja, Sari Aaltonen, Leonie H. Bogl, Kauko Heikkilä, Sara Kaartinen, Urho M. Kujala, Ulla Kärkkäinen, Guiomar Masip, Linda Mustelin, Teemu Palviainen, Kirsi H. Pietiläinen, Mirva Rottensteiner, Pyry N. Sipilä, Richard J. Rose, Anna Keski-Rahkonen and Jaakko Kaprio</i>	<b>530</b>
The German Twin Family Panel (TwinLife) <i>Bastian Möndiek, Volker Lang, Lena Weigel, Myriam A. Baum, Eike F. Eifler, Elisabeth Hahn, Anke Hufer, Christoph H. Klatzka, Anita Kottwitz, Kristina Krell, Amelie Nikstat, Martin Diewald, Rainer Riemann and Frank M. Spinath</i>	<b>540</b>
The Study of Personality Architecture and Dynamics (SPeADy): A Longitudinal and Extended Twin Family Study <i>Christian Kandler, Angelika Penner, Julia Richter and Alexandra Zapko-Willmes</i>	<b>548</b>
The Guinea-Bissau Twin Registry Update: A Platform for Studying Twin Mortality and Metabolic Disease <i>Morten Bjerregaard-Andersen, Gabriel Marciiano Gomes, Ditte Egegaard Hennild, Dorte Møller Jensen, Kaare Christensen, Morten Sødemann, Henning Beck-Nielsen and Peter Aaby</i>	<b>554</b>
The Hungarian Twin Registry Update: Turning From a Voluntary to a Population-Based Registry <i>Adam D. Tarnoki, David L. Tarnoki, Bianka Forgo, Helga Szabo, Dora Melicher, Julia Metneki and Levente Littvay</i>	<b>561</b>
The Longitudinal Israeli Study of Twins (LIST) Reaches Adolescence: Genetic and Environmental Pathways to Social, Personality and Moral Development <i>Dana Vertsberger, Lior Abramson and Ariel Knaflo-Noam</i>	<b>567</b>
The Italian Twin Registry: An Update at 18 Years From Its Inception <i>Emanuela Medda, Virgilia Tocacceli, Corrado Fagnani, Lorenza Nisticò, Sonia Brescianini, Miriam Salemi, Maurizio Ferri, Cristina D'ippolito, Sabrina Alviti, Antonio Arnofi and Maria Antonietta Stazi</i>	<b>572</b>
Isfahan Twins Registry (ITR): An Invaluable Platform for Epidemiological and Epigenetic Studies: Design and Methodology of ITR <i>Mojgan Gharipour, Shaghayegh Haghjooy Javanmard, Marjan Mansourian, Mohammadreza Sabri, Elham Khosravi, Minoo Dianatkhan, Ladan Sadeghian, Zahra Jabarzare and Nizal Sarrafzadegan</i>	<b>579</b>
Twin Database of the Secondary School Attached to the Faculty of Education of the University of Tokyo <i>Syuichi Ooki</i>	<b>583</b>
Database of Families with Twins and Higher Order Multiples in Japanese Twins Mothers Clubs <i>Syuichi Ooki</i>	<b>588</b>
Psychosocial Twin Cohort Studies in Japan: The Keio Twin Research Center (KoTReC) <i>Juko Ando, Keiko K. Fujisawa, Kai Hiraishi, Chizuru Shikishima, Tetsuya Kawamoto, Mari Nozaki, Shinji Yamagata, Yusuke Takahashi, Kunitake Suzuki, Yoshiaki Someya, Koken Ozaki, Minako Deno, Mami Tanaka, Shoko Sasaki, Tatsushi Toda, Kazuhiro Kobayashi, Masamichi Sakagami, Mitsuhiro Okada, Nobuhiko Kijima, Ryu Takizawa and Kou Murayama</i>	<b>591</b>

(CONTINUED OVER)

# contents

**continued**

Update on Osaka University Twin Registry: An Overview of Multidisciplinary Research Resources and Biobank at Osaka University Center for Twin Research <i>Chika Honda, Mikio Watanabe, Rie Tomizawa, Osaka Twin Research Group and Norio Sakai</i>	<b>597</b>
The New West Japan Twins and Higher Order Multiple Births Registry <i>Yoshie Yokoyama</i>	<b>602</b>
The South Korean Twin Registry <i>Yoon-Mi Hur, Man Chull Kang, Hoe-Uk Jeong, Il Cook Kang and Jong Woo Kim</i>	<b>606</b>
First Steps of the Mexico Twin Registry (RGMex-MexTR) at the University of Guadalajara <i>Guillermo A. Cervantes-Cardona, Tania E. Cervantes-Nápoles, Gabino Cervantes-Guevara, Olga R. Manzo-Palomera, Alejandro González-Ojeda, Gabriela Silva-González, Clotilde Fuentes-Orozco, Ángel Sánchez-Michel and Adriana Nápoles-Echauri</i>	<b>609</b>
TwinsMX: Uncovering the Basis of Health and Disease in the Mexican Population <i>Ana V. Leon-Apodaca, Enrique Chiu-Han, Ivett Ortega-Mora, Talía V. Román-López, Ulises Caballero-Sánchez, Oscar Aldana-Assad, Adrián I. Campos, Gabriel Cuellar-Partida, Alejandra E. Ruiz-Contreras, Srael Alcauter, Miguel E. Rentería and Alejandra Medina-Rivera</i>	<b>611</b>
TwinLIFE: The Twin Longitudinal Investigation of FETal Discordance <i>Sophie G. Groene, Pia Todtenhaupt, Erik W. van Zwet, Melissa van Pel, Romy J. M. Berkhouwt, Monique C. Haak, Arno A. W. Roest, Enrico Lopriore, Jeanine M. M. van Klink and Bastiaan T. Heijmans</i>	<b>617</b>
The Netherlands Twin Register: Longitudinal Research Based on Twin and Twin-Family Designs <i>Lannie Ligthart, Catharina E.M. van Beijsterveldt, Sofieke T. Kevenaar, Eveline de Zeeuw, Elsje van Bergen, Susanne Bruins, René Pool, Quinta Helmer, Jenny van Dongen, Jouke-Jan Hottenga, Dennis van't Ent, Conor V. Dolan, Gareth E. Davies, Erik A. Ehli, Meike Bartels, Gonnieke Willemsen, Eco J.C. de Geus and Dorret I. Boomsma</i>	<b>623</b>
The Nigerian Twin and Sibling Registry: An Update <i>Yoon-Mi Hur, Hoe-Uk Jeong, Man Chull Kang, Frances Ajose, Jong Woo Kim, Jeffrey J. Beck, Jouke-Jan Hottenga, Hamdi Mbarek, Casey T. Finnicum, Erik A. Ehli, Nicholas G. Martin, Eco J. de Geus, Dorret I. Boomsma, Gareth E. Davies and Timothy Bates</i>	<b>637</b>
The Oslo University Adolescent and Young Adult Twin Project: Recruitment and Attrition <i>Svenn Torgersen and Trine Waaktaar</i>	<b>641</b>
The Norwegian Twin Registry <i>Thomas Nilsen, Ingunn Brandt and Jennifer R. Harris</i>	<b>647</b>
Familial Resemblance in Body Shape and Composition, Metabolic Syndrome, Physical Activity and Physical Fitness: A Summary of Research in Portuguese Families and Siblings <i>Sara Pereira, Carla Santos, Peter T. Katzmarzyk and José Maia</i>	<b>651</b>
Serbian Twin Registry <i>Snežana Smederevac, Dušanka Mitrović, Selka Sadiković, Ilija Milovanović, Bojan Branovački, Bojana M. Dinić, Željka Nikolašević, Jasmina Kodžopeljić, Vojsilava Bugarski Ignjatović, Marija Semnic, Tijana Vučanić Stankov, Nataša Vučinić, Milan Oljača, Dejan Pajić, Aleksandra Stojadinović, Tatjana Krstić and Aleksandra Milutinović</i>	<b>660</b>
An Update of Twin Research in Spain: The Murcia Twin Registry <i>Juan R. Ordoñana, Eduvigis Carrillo, Lucía Colodro-Conde, Francisco J. García-Palomo, Francisca González-Javier, Juan J. Madrid-Valero, José M. Martínez Selva, Olga Monteagudo, José J. Morosoli, Francisco Pérez-Riquelme and Juan F. Sánchez-Romera</i>	<b>667</b>
The Swedish Twin Registry: Content and Management as a Research Infrastructure <i>Ulrika Zagai, Paul Lichtenstein, Nancy L. Pedersen and Patrik K. E. Magnusson</i>	<b>672</b>

(CONTINUED OVER)

# contents

**continued**

Arizona Twin Project: Specificity in Risk and Resilience for Developmental Psychopathology and Health <i>Kathryn Lemery-Chalfant, Veronica Oro, Gianna Rea-Sandin, Samantha Miadich, Emma Lecarie, Sierra Clifford, Leah D. Doane and Mary C. Davis</i>	<b>681</b>
Avera Twin Register Growing Through Online Consenting and Survey Collection <i>Julie M. Kittelsrud, Erik A. Ehli, Vikki Petersen, Tammy Jung, Jeffrey J. Beck, Noah Kallsen, Patricia Huizinga, Brittany Holm and Gareth E. Davies</i>	<b>686</b>
The Boston University Twin Project (BUTP) II <i>Kimberly J. Saudino and Jody M. Ganiban</i>	<b>691</b>
CATSLife: A Study of Lifespan Behavioral Development and Cognitive Functioning <i>Sally J. Wadsworth, Robin P. Corley, Elizabeth Munoz, B. Paige Trubenstein, Elijah Knaap, John C. DeFries, Robert Plomin, Chandra A. Reynolds and The CATSLife Team</i>	<b>695</b>
The Colorado Twin Registry: 2019 Update <i>Robin P. Corley, Chandra A. Reynolds, Sally J. Wadsworth, Sally-Ann Rhea and John K. Hewitt</i>	<b>707</b>
The Early Growth and Development Study: A Dual-Family Adoption Study from Birth Through Adolescence <i>Leslie D. Leve, Jenae M. Neiderhiser, Jody M. Ganiban, Misaki N. Natsuaki, Daniel S. Shaw and David Reiss</i>	<b>716</b>
The Florida State Twin Registry <i>Jeanette Taylor, Kimberly Martinez and Sara A. Hart</i>	<b>728</b>
Fullerton Virtual Twin Project: Overview and 2019 Update <i>Nancy L. Segal and Francisca J. Niculæ</i>	<b>731</b>
The Louisville Twin Study: Past, Present and Future <i>Deborah W. Davis, Eric Turkheimer, Deborah Finkel, Christopher Beam and Lesa Ryan</i>	<b>735</b>
The Michigan State University Twin Registry (MSUTR): 15 Years of Twin and Family Research <i>S. Alexandra Burt and Kelly L. Klump</i>	<b>741</b>
Minnesota Center for Twin and Family Research <i>Sylia Wilson, Kevin Haroian, William G. Iacono, Robert F. Krueger, James J. Lee, Monica Luciana, Stephen M. Malone, Matt McGue, Glenn I. Roisman and Scott Vrieze</i>	<b>746</b>
The Mid-Atlantic Twin Registry of Virginia Commonwealth University <i>Emily C. H. Liley, Anne-Taylor Morris and Judy L. Silberg</i>	<b>753</b>
The NAS-NRC Twin Registry and Duke Twins Study of Memory in Aging: An Update <i>Margaret Gatz, Brenda L. Plassman, Caroline M. Tanner, Samuel M. Goldman, Gary E. Swan, Marianne Chanti-Ketterl, Ellen E. Walters and David A. Butler</i>	<b>757</b>
The National Project on Achievement in Twins <i>Sara A. Hart, Kim Martinez, Patrick C. Kennedy, Colleen M. Ganley and Jeanette Taylor</i>	<b>761</b>
The Pennsylvania Longitudinal Study of Parents and Children (PALSPAC) Twin Registry <i>Amanda M. Ramos, Tong Chen, Peter K. Hatemi, H. Harrington Cleveland and Jenae M. Neiderhiser</i>	<b>765</b>
The Project Talent Twin and Sibling Study: Zygosity and New Data Collection <i>Carol A. Prescott, Ellen E. Walters, Thalida Em Arpwong, Catalina Zavala, Tara L. Gruenewald and Margaret Gatz</i>	<b>769</b>
The Southern Illinois Twins/Triplets and Siblings Study (SITSS): A Longitudinal Study of Early Child Development <i>Lisabeth Fisher DiLalla and Matthew R. Jamnik</i>	<b>779</b>

(CONTINUED OVER)

# contents

**continued**

Current Status of the Vietnam Era Twin Study of Aging (VETSA) <i>William S. Kremen, Carol E. Franz and Michael J. Lyons</i>	<b>783</b>
The Washington State Twin Registry: 2019 Update <i>Glen E. Duncan, Ally R. Avery, Eric Strachan, Eric Turkheimer and Siny Tsang</i>	<b>788</b>
Wisconsin Twin Project Overview: Temperament and Affective Neuroscience <i>Nicole L. Schmidt, Kathryn Lemery-Chalfant and H. Hill Goldsmith</i>	<b>794</b>
The CODATwins Project: The Current Status and Recent Findings of Collaborative Project of Development of Anthropometrical Measures in Twins <i>K. Silventoinen, A. Jelenkovic, Y. Yokoyama, R. Sund, M. Sugawara, M. Tanaka, S. Matsumoto, L. H. Bogl, D. L. Freitas, J. A. Maia, J. v. B. Hjelmborg, S. Aaltonen, M. Piirtola, A. Latvala, L. Calais-Ferreira, C. V. Oliveira, P. H. Ferreira, F. Ji, F. Ning, Z. Pang, J. R. Ordoñana, J. F. Sánchez-Romera, L. Colodro-Conde, S. A. Burt, K. L. Klump, N. G. Martin, S. E. Medland, G. W. Montgomery, C. Kandler, T. A. McAdams, T. C. Eley, A. M. Gregory, K. J. Saudino, L. Dubois, M. Boivin, M. Brendgen, G. Dionne, F. Vitaro, A. D. Tarnoki, D. L. Tarnoki, C. M. A. Haworth, R. Plomin, S. Y. Öncel, F. Aliev, E. Medda, L. Nisticò, V. Tocaceli, J. M. Craig, R. Saffery, S. H. Siribaddana, M. Hotopf, A. Sumathipala, F. Rijssdijk, H.-U. Jeong, T. Spector, M. Mangino, G. Lachance, M. Gatz, D. A. Butler, W. Gao, C. Yu, L. Li, G. Bayasgalan, D. Narandalai, K. P. Harden, E. M. Tucker-Drob, K. Christensen, A. Skytthe, K. O. Kyvik, C. A. Derom, R. F. Vlietinck, R. J. F. Loos, W. Cozen, A. E. Hwang, T. M. Mack, M. He, X. Ding, J. L. Silberg, H. H. Maes, T. L. Cutler, J. L. Hopper, P. K. E. Magnusson, N. L. Pedersen, A. K. Dahl Aslan, L. A. Baker, C. Tuvblad, M. Bjerregaard-Andersen, H. Beck-Nielsen, M. Sodemann, V. Ullemar, C. Almqvist, Q. Tan, D. Zhang, G. E. Swan, R. Krasnow, K. L. Jang, A. Knafo-Noam, D. Mankuta, L. Abramson, P. Lichtenstein, R. F. Krueger, M. McGue, S. Pahnen, P. Tynelius, F. Rasmussen, G. E. Duncan, D. Buchwald, R. P. Corley, B. M. Huibregtsse, T. L. Nelson, K. E. Whitfield, C. E. Franz, W. S. Kremen, M. J. Lyons, S. Ooki, I. Brandt, T. S. Nilsen, J. R. Harris, J. Sung, H. A. Park, J. Lee, S. J. Lee, G. Willemsen, M. Bartels, C. E. M. van Beijsterveldt, C. H. Llewellyn, A. Fisher, E. Rebato, A. Busjahn, R. Tomizawa, F. Inui, M. Watanabe, C. Honda, N. Sakai, Y.-M. Hur, T. I. A. Sørensen, D. I. Boomsma and J. Kaprio</i>	<b>800</b>
IGEMS: The Consortium on Interplay of Genes and Environment Across Multiple Studies — An Update <i>Nancy L. Pedersen, Margaret Gatz, Brian K. Finch, Deborah Finkel, David A. Butler, Anna Dahl Aslan, Carol E. Franz, Jaakkko Kaprio, Susan Lapham, Matt McGue, Miriam A. Mosing, Jenae Neiderhiser, Marianne Nygaard, Matthew Panizzon, Carol A. Prescott, Chandra A. Reynolds, Perminder Sachdev and Keith E. Whitfield</i>	<b>809</b>
The Nordic Twin Study on Cancer — NorTwinCan <i>Jennifer R. Harris, Jacob Hjelmborg, Hans-Olov Adami, Kamila Czene, Lorelei Mucci, Jaakkko Kaprio and Nordic Twin Study of Cancer (NorTwinCan) Collaboration</i>	<b>817</b>
<b>News, Views and Comments</b>	
Justifying Separate Experiences for Twins: Dorothy Burlingham's Classic Twin Study/Twin Research Reviews: Monozygotic Twins with Maturity-Onset Diabetes, Gene Editing of Chinese Twins, Educational Disadvantage of Early-Born Twins and Developmental Trajectories of Movements in Fetal Twins/In the News: Twins with Nearly Identical License Plates, Rare Case of Fetus-in-Fetu, Twin Brothers Killed at Pearl Harbor, Death of a 96-Year-Old Twin Holocaust Survivor, Death of Male–Female Twin Toddlers in a Heated Car and Confusion of Identical Twin Politicians <i>Nancy L. Segal</i>	<b>824</b>
<b>Corrigendum</b>	
CATSLife: A Study of Lifespan Behavioral Development and Cognitive Functioning – Corrigendum <i>Sally J. Wadsworth, Robin P. Corley, Elizabeth Munoz, B. Paige Trubenstein, Elijah Knaap, John C. DeFries, Robert Plomin, Chandra A. Reynolds and The CATSLife Team</i>	<b>829</b>