

Supplementary note: Author list

Below are those in the International Human Genome Sequencing Consortium that participated in the finishing of the human reference sequence beyond the publication of the draft human genome (*Nature* **409** 861-921 (2001)). They are grouped into sequencing centers, analysis groups, and scientific management. Some center lists are further subdivided.

1. The Wellcome Trust Sanger Institute, Hinxton, Cambridgeshire, CB10 1RQ, United Kingdom

Zahra Abdellah, Alireza Ahmadi, Shahana Ahmed, Matthew Aimable, Rachael Ainscough, Jeff Almeida, Claire Almond, Andrew Ambler, Karen Ambrose, Kerrie Ambrose, Robert Andrew, Daniel Andrews, Neil Andrews, Dan Andrews, Eva Apweiler, Hazel Arbery, Beth Archer, Gareth Ash, Kevin Ashcroft, Jennifer Ashurst, Robert Ashwell, Deborah Atkin, Andrea Atkinson, Barry Atkinson, John Attwood, Keith Aubin, Katherine Auger, Terry Avis, Anne Babbage, Sarah Babbage, Joanne Bacon, Claire Bagguley, Jonathan Bailey, Andrew Baker, Ruby Banerjee, Simon Bardill, Darren Barker, Gary Barker, Daniel Barker, Karen Barlow, Laurent Baron, Anika Barrett, Rebecca Bartlett, David Basham, Victoria Basham, Alex Bateman, Karen Bates, Caroline Baynes, Lisa Beard, Susan Beard, David Beare, Alastair Beasley, Helen Beasley, Oliver Beasley, Stephan Beck, Emma Bell, Damian Bellerby, Tristram Bellerby, Richard Bemrose, James Bennett, David Bentley, Andrew Bentley, Mary Berks, Michael Berks, Graeme Bethel, Christine Bird, Ewan Birney, Helen Bissell, Suzanne Blackburne-Maze, Sarah Blakey, Christel Bolton, James Bonfield, Ralph Bonnett, Richard Border, Amanda Bradley, Nicola Brady, Jason Bray, Sarah Bray-Allen, Anne Bridgeman, Jonathan Brook, Shane Brooking, Andrew Brown, Clive Brown, Jacqui Brown, Margaret Brown, Mary Brown, Richard Bruskiwich, Jackie Bryant, David Buck, Veronica Buckle, Claire Budd, Sarah Buller, Jill Burberry, Deborah Burford, Joanne Burgess, Wayne Burrill, Christine Burrows, John Burton, Christine Burton, Phil Butcher, Adam Butler, Murray Cairns, Nick Camm, Christopher Campbell, Bruno Canning, Carol Carder, Paul Carder, Nigel Carter, Tamara Cavanna, Shani Chalk, Ka Chan, Joanna Chapman, Rachel Charles, Neil Chillingworth, Tom Chothia, Connie Chui, Rob Clack, Michele Clamp, Anthea Clark, Graham Clark, Kevin Clark, Sarah Clark, Sue Clark, Richard Clark, Betty Clarke, Eddie Clarke, Kay Clarke, Adrian Clarke, Laura Clarke, Chris Clee, Sheila Clegg, Karen Clifford, Julia Coates, Victoria Cobley, Alison Coffey, Penelope Coggill, Lotte Cole, Rachael Collier, Simon Collings, John Collins, Philip Collins, Louise Colman, Anthony Connolly, Richard Connor, Jennie Conquer, Donald Conroy, Doug Constance, Leanna Cook, Jonathan Cooper, Rachel Cooper, Robert Cooper, Maria Coppola, Teresa Copsey, Nicole Corby, Linda Cornell, Ruth Cornell, Christine Cornell, Amanda Cottage, Alan Coulson, Gez Coville, Anthony Cox, Tony Cox, Robert Coxhill, Matthew Craig, Tom Crane, Matt Crawley, Victor Crew, James Cuff, Karl Culley, Auli Cummings, Kirsti Cummings, Paul Cummings, Adam Curran, Valery Curwen, Jeffrey Cutts, Rachael Daniels, Lucy Davidson, Jonathon Davies, Joy Davies, Nicholas Davies, Robert Davies, John Davis, Jayne Davis, Matthew Davis, Elisabeth Dawson, Rebecca Deadman, Peter Dean, Simon Dear, Frances Dearden, Marcos Delgado, Panos Deloukas, Janet Dennis, Pawandeep Dhami, Catherine Dibling,

Ruth Dobbs, Richard Dobson, Catherine Dockree, Daniel Doddington, Steven Dodsworth, Norman Doggett, Thomas Down, Andrew Dunham, Ian Dunham, Anne Dunn, Matthew Dunn, Richard Durbin, Jillian Durham, Ireena Dutta, Ruth Dwyer, Lauren Dyer, Mark Earthrowl, Timothy Eastham, Emma Eastham, Carol Edwards, Karen Edwards, Andrew Ellington, David Elliott, Matthew Ellwood, Becky Emberson, Helen Errington, Gareth Evans, John Evans, Katie Evans, Richard Evans, Eduardo Eyras, Louisa Faulkner, Charlotte Fellingham, Theresa Feltwell, Stephen Fennell, Robert Finn, Tina Flack, Claire Felming, Kerry Fleming, Jonathan Flint, Mark Flint, Yvonne Floyd, Simon Footman, John Fowler, Deborah Frame, Matthew Francis, Stephen Francis, Adam Frankish, John Frankland, Audrey Fraser, David Fraser, Lisa French, David Fricker, Daniel Frost, Jackie Frost, Lorna Frost, Carole Frost, Liam Fuller, Kathryn Fullerton, Alison Gardner, Patrick Garner, Jane Garnett, Leigh Gatland, Lindsay Gatland, Jilur Ghorl, Ben Gibbs, Diane Gibson, Elizabeth Gibson, James Gilbert, Lisa Gilby, Christopher Gillson, Rebecca Glithero, April Gooderham, Matthew Gorton, Darren Grafham, Michael Grant, Susan Grant, Iain Gray, Emma Gray, Lisa Green, James Greenhalgh, Joe Greenhill, Sam Griffiths-Jones, Philippa Gregg, Simon Gregory, Susan Gribble, Coline Griffiths, Ed Griffiths, Mark Griffiths, Russell Grocock, Ian Guthrie, Rhian Gwilliam, Rebekah Hall, Karen Halls, Gretta Hall-Tamly, John Hamlett, John Hamlett, Sian Hammond, Julie Hancock, Adam Harding, Joanne Harley, David Harper, Georgina Harper, Patrik Harper, Grant Harradence, Charlene-Lou Harrison, Elliott Harrison, Ruth Harrison, Elizabeth Hart, Daniel Hassan, Natalie Hawkins, Kellie Hawley, Kerry Hayes, Paul Heath, Rosemary Heathcott, Cathy Hembry, Carl Henderson, Tim Herd, Stephen Hewitt, Douglas Higgs, Guy Hillyard, Russell Hinkins, Sara-Jane Ho, David Hodgson, Michael Hoffs, Jane Holden, Janet Holdgate, Ele Holloway, Ian Holmes, Sarah Holmes, Simon Holroyd, Alison Hooper, Lucy Hopewell, Ben Hopkins, Gary Hornett, Geoff Hornsby, Tony Hornsby, Sharon Horsley, Roger Horton, Philip Howard, Philip Howden, Kevin Howe, Gareth Howell, Timothy Hubbard, Elizabeth Huckle, Jaime Hughes, Jennifer Hughes, Louisa Hull, Holger Hummeric, Sean Humphray, Matthew Humphries, Adrienne Hunt, Paul Hunt, Sarah Hunt, Giselle Hunter, David Hyde, Michael Ince, Judith Isherwood, Vivek Iyer, Janet Izatt, Monica Izmajlowicz, Niclas Jareborg, Bijay Jassal, Grant Jeffery, Kim Jeffery, Colin Jeffrey, Kerstin Jekosch, Lee Jenkins, Tina Johansen, Cheryl Johnson, Christopher Johnson, David Johnson, Keith Jolley, Abigail Jones, Claire Jones, Juliet Jones, Matthew Jones, Michael Jones, Steven Jones, Shirin Joseph, Ann Joy, Linsey Joy, Victoria Joy, Gillian Joyce, Mark Jubb, Kanchi Karunaratne, Michael Kay, Danielle Kaye, Lyndal Kearney, Stephen Keenan, Simon Kelley, Joanna Kershaw, Ross Kettleborough, Cathy Kidd, Peter Kierstan, Andrew Kimberley, Andrew King, Simon Kingsley, Colin Kingswood, Gillian Klinge, Andrew Knights, Ian Korf, Anders Krogh, Heena Lad, Philip Laidlaw, Michael Laing, Gavin Laird, Christine Lambart, Ralph Lamble, Cordelia Langford, Ben Larke, Timun Lau, Stephanie Lawlor, Sampsa Leather, Minna Lehtaslahti, Johannes Lemke, Steven Leonard, Daniel Leongamornlert, Margaret Leversha, Julia Lightning, Sarah Lindsay, Matthew Line, Sally Linsdell, Peter Little, Christine Lloyd, David Lloyd, Victoria Lock, William Lock, Anne Lodziak, Ian Longden, Howard Loraine, Rachel Lord, Jane Loveland, Jamie Lovell, Georgina Lye, Neil Marriott, Anna Marrone, Paul Marsden, Victoria Marsh, Matthew Martin, Sancha Martin, Gareth Maslen, Debbie Mason, Lucy Matthews, Paul Matthews, Nick Matthews, Madalynne Maynard, Owen McCann, Joseph McClay, Craig McCollum, Louise McConnachie, Bill McDonald, Louise McDonald, Jennifer

McDowall, Sarah McGuire, Carole McKeown, Stuart McLaren, Kirsten McLay, James McLean, John McMurdo, Amanda McMurray, Des McMurray, Natalie McWilliams, Nalini Mehta, Patrick Meidl, Noel Menuge, Simon Mercer, Asab Miah, Gos Micklem, Simon Miles, Sarah Milne, Dippica Mistry, Shailesh Mistry, Jake Mitchell, Jeff Mitchell, Maryam Mohammadi, Christophe Molina, Paul Mooney, Madeline Moore, Andrea Moreland, Beverley Mortimore, Richard Mott, Ian Mullenger, Jim Mullikin, Brian Munday, Elaine Munday, Andy Mungall, Clare Murnane, Kerry Murrell, Alison Myers, David Negus, Bee Ng, David Niblett, Jonathan Nicholson, Tim Nickerson, Sukhjot Nijjar, Zemin Ning, James Nisbet, Karen Novik, Christopher Odell, Daniel O'Donovan, Frances Ogbighele, Tom Oinn, Hayley Oliver, Karen Oliver, Helena Orbell, Anthony Osborn, Joan Osborne, Emma Overton-Larty, Sophie Palmer, Richard Pandian, Adrian Parker, Christopher Parkin, Kim Parkin, Ginny Parry-Brown, Dina Patel, Ritesh Patel, Alexandra Pearce, Danita Pearson, Anna Peck, Richard Peck, John Peden, Sarah Pelan, Chantal Percy, Andrew Perito, Isabelle Perrault, Anna Peters, Roger Pettett, Ben Phillimore, Kim Phillips, Samantha Phillips, Darren Platt, Emma Playford, Bob Plumb, Matthew Pocock, Keith Porter, Tarryn Porter, Christopher Potter, Simon Potter, Don Powell, Radhika Prathalingham, Elena Prigmore, Michael Quail, Hanna Quarrie, Chris Quince, Matloob Qureshi, Helen Ramsay, Yvonne Ramsey, Sally Ranby, Richard Rance, Vikki Rand, Joanne Ratford, Lewis Ratford, Daniel Read, Donald Redhead, Richard Redon, Christine Rees, Mary Reid, Astrid Reinhardt, Alex Rice, Catherine Rice, Peter Rice, Suzanne Richard, Susan Richardson, Kerry Ridler, Lyn Riethoven, Rachel Rigby, Melanie Robinson, Rebecca Rochford, Jane Rogers, Lisa Rogers, Hugh Ross, Mark Ross, Angela Rule, James Rule, Ben Russell, Jayne Rutter, Kamal Safdar, Natalie Salter, Javier Santoyo-Lopez, David Saunders, Carol Scott, Deborah Scott, Ian Scott, Fiona Seager, Margaret Searle, Paul Searle, Stephen Searle, Harminder Sehra, Joe Shakespeare, Jason Shardelow, Greg Sharp, Teresa Shaw, Charles Shaw-Smith, Jennifer Shearing, Karen Sheppard, Richard Sheppard, Elizabeth Sheridan, Ratna Shownkeen, Richard Silk, Matthew Sims, Sarah Sims, Shanthi Sivadasan, Carl Skuce, Luc Smink, Andrew Smith, Laura Smith, Lorraine Smith, Michelle Smith, Russell Smith, Stephanie Smith, James Smith, Hannah Sneath, Cari Soderlund, Victor Solovyev, Erik Sonnhammer, Elizabeth Sotheran, William Spooner, Lee Spraggon, Janet Squares, Suzanna Squares, Michael Stables, James Stalker, Steve Stamford, Melanie Stammers, Helen Steingruber, Yvonne Stephens, Charles Steward, Aengus Stewart, Michael Stewart, Ian Still, Mo Stock, Lisa Stoppard, Philip Storey, Roy Storey, Sarah Stowe, Carol Strachan, Greg Strachan, Claire Stribling, John Sturdy, John Sulston, Chris Swainson, Mark Swann, David Swarbreck, Neil Sycamore, Matthew Tagney, Steven Tan, Elizabeth Tarling, Amy Taylor, Gillian Taylor, Kate Taylor, Ruth Taylor, Sam Taylor, Susan Taylor, Louise Tee, Julieanne Tester, Andrew Theaker, David Thexton, Craig Thomas, Daniel Thomas, Karen Thomas, Ruth Thomas, Roselin Thommai, Andrea Thorpe, Karen Thorpe, Glen Threadgold, Scott Thurston, Emma Tinsley, Alan Tracey, Jonathan Travers, Anthony Tromans, Ben Tubby, Cristina Tufarelli, Kathryn Turney, Darren Upson, Zoe Van Helmond, Mark Vaudin, Ramya Viknaraja, Wendy Vine, Paul Voak, David Vollenhoven, Sarah Walker, Melanie Wall, Justine Wallis, Michelle Wallis, Graham Warren, Georgina Warry, Andy Watson, Nicola Watt, Anthony Webb, Jeannette Webb, John Weir, Alan Wells, Sarah Wells, Robert Welton, Paul West, Tony West, Angela Wheatley, Carl Wheatley, Gideon Wheeler, Hayley Whitaker, Adam White, Amelia White, Brian White, Johnathon White, Simon White, Sally

Whitehead, Matthew Whiteley, Pamela Whittaker, Adam Whittaker, Sara Widaa, Anna Wild, Jane Wilkinson, Paul Wilkinson, David Willey, Andy Williams, Bill Williams, Leanne Williams, Helen Williamson, Tamsin Wilmer, Laurens Wilming, Brian Wilson, Gareth Wilson, Margaret Wilson, Nyree Wilson, Siobhan Wilson, Wendy Wilson, Piers Wilson, Philip Window, Jenny Winster, Claire Winzar, James Witt, Fred Wobus, Emma Wood, Joe Wood, Sharon Woodeson, Kathryn Woodfine, Rebecca Woodhouse, Rebecca Woodmansey, Richard Wooster, Matthew Wray, Paul Wray, Charmain Wright, Kathrine Wright, Debbie Wright, Julia Wyatt, Jane Xie, Louise Young, Sheila Young, Ruth Younger, Shenru Zhao

2. Washington University Genome Sequencing Center, Box 8501, 4444 Forest Park Avenue, St. Louis, Missouri 63108 USA

Amanda Abbott-Ozersky, Amber Isak, Amy Berghoff, Amy D. Reily, Andrea Holmes, Andrew Levy, Andrew Van Brunt, Aniko Sabo, Anthony Harris, Anu Desai, Asif Chinwalla, Aye M. Tin-Wollam, Betty Lamar, Brian Mailey, C. Richard Harkins, Caryn Wagner-McPherson, Catherine Marquis-Homeyer, Catrina Fronick, Chad Tomlinson, Charlene Pearman, Christine Nguyen, Chunyan Wang, Colin Kremitzki, Craig Pohl, Cynthia Strong, Dan Layman, Dan Bentley, Darin Blasiar, David Dooling, Delali Buatsi, Douglas Johnson, Edward A. Belter, Jr., Edward Paulson, Elaine R. Mardis, Elizabeth Boatright, Ernest Goyea, Feiyu Du, George Hu, Glendoria Elliott, Holly Bradshaw-Cordum, Hui Du, Hui Sun, James Randolph, Jason Carter, Jason E. Waligorski, Jason Maas, Jeffrey Woessner, Jennifer Edwards, Jennifer Murray, Jennifer Randall-Maher, Joanne Nelson, Joelle Kalicki-Veizer, Johar Ali, John McPherson, John Spieth, John Wallace, Jon Armstrong, Joshua Heyen, Kelly Carpenter, Kelie Kang, Kelly Mead, Kelsi Scott, Kimberley Delhaunty, Kyriena L. Schatzkamer, Kris Wylie, Krista Haglund, Kym Hallsworth-Pepin, Kyung Kim, Lachlan Oddy, LaDeana Hillier, Laura P. Courtney, Lauren Caruso, Lee Trani, Li Ding, Lucinda A. Fulton, Maria Cedroni, Marco Marra, Mark Johnson, Martin Yoakum, Matt Cordes, Maxim Radionenko, Michael Becker, Michael D. McLellan, Mike Nhan, Mike Wendl, Mundeep Sekhon, Nancy Miller, Neenu Grewal, Neha Shah, Nicolas Berkowicz, Patrick J. Minx, Patty Wohldmann, Phil Latreille, Philip Ozersky, Prashant Sinha, Rachel Maupin, Rekha Meyer, Rick Meyer, Richard K. Wilson, Robert S. Fulton, Robert H. Waterston, Sandra W. Clifton, Sara Kohlberg, Sara Jaeger, Shiaw-Pyng Yang, Scott Abbott, Scott Martinka, Scott S. Kruchowski, Sharhonda Swearengen-Shahid, Shawn Leonard, Shunfang Hou, Stacie Gattung, Stephanie Andrews, Stephanie Chissoe, Susan M. Rock, Tamberlyn Bieri, Theresa Rohlfing, Tina A. Graves, Tony Gage, Tracie Miner, William Nash, Yoram Shotland

3. Whitehead Institute for Biomedical Research, Center for Genome Research, Nine Cambridge Center, Cambridge, Massachusetts 02142 USA.

Current address: Eli and Edythe Broad Institute, 320 Charles Street, Cambridge, MA 02141-2023 (§Center Director; †Project Leadership; *Major Contributor)

Eric S Lander[§], Chad Nusbaum[†], Bruce Birren[†], Kerstin Lindblad-Toh[†], Jill P Mesirov[†], Robert Nicol[†], Michael C Zody[†], Jean L Chang[†], Christina A Cuomo[†], Ken Dewar[†], Mike Fitzgerald[†], David B Jaffe[†], Xiaoping Yang[†], Amr Abouelleil*, Nicole R Allen*, Harindra Arachchi*, Jennifer Baldwin*, Toby Bloom*, Mark Borowsky*, Boris Boukhgalter*, Jon Butler*, Bruno Chazaro*, Mieke Citroen*, April Cook*, Ben Corum*, Kurt DeArellano*, Kathy Dooley*, Lester Dorris*,

Matthew Endrizzi*, Jeffery Erickson*, Gary Gearin*, Sante Gnerre*, Andreas Gnirke*, Nabil Hafez*, Daniel Hagopian*, Jennifer Hall*, Catherine Hosage-Norman*, Charlien Jones*, Michael Kamal*, Asha Kamat*, Chinnappa Kodira*, Patrick Kuharic*, Kurt LaButti*, Teresa Lai*, Jessica Lehoczky*, Rosie Levine*, Xiaohong Liu*, Tashi Lokyitsang*, Annie Lui*, Richard Mabbitt*, Pendexter Macdonald*, John Major*, Jonathan Manning*, Lisa Marinelli*, Charles D Matthews*, Evan Mauceli*, Atanas Mihalev*, Glen Munson*, Jerome Naylor*, Cindy Nguyen*, Paula O'Donnell*, Sinead O'Leary*, Keith O'Neill*, Stephen Parker*, Bruno Piqani*, Anthony Rachupka*, Umadevi Ramasami*, Christina Raymond*, Joseph Rodriguez*, Rebecca Schupbach*, Christopher Seaman*, Ted Sharpe*, Andrew Sheridan*, Cherylyn Smith*, Carrie Sougnez*, Sabrina Stone*, Matthew Stubbs*, Jessica Talamas*, Pema Tenzin*, Kerri Topham*, Sarah Towey*, Vijay Venkataranan*, Charles Whittaker*, Jane Wilkinson*, Andrew Zimmer*, Emmanuel Adekoya, Mostafa Ait-Zahra, Alla Ali, Thaddeus Allen, Mechele Anderson, Scott Anderson, Jeff Armbruster, Pasang Bachatsang, Tashi Bayul, Berta Blitshsteyn, Jason Blye, Leonid Boguslavskiy, Jody Camarata, Kevin Campo, Yama Cheshatsang, Al Collymore, Tony Considine, Patrick Cooke, Robert David, Tenzin Dawoe, Stewart DeGray, Chemey Dhongsar, Passang Dorje, Kunsang Dorjee, Noah Duffy, Alan Dupes, Abderrahim Farina, Susan Faro, Pat Ferriera, Heather Fischer, Sheila Fisher, Karen Foley, Diane Gage, Steph Gardyna, Seth Gordon, Audra Goyette, Joe Graham, Edward Grandbois, Kunsang Gyaltzen, Birhane Hagos, Beah Hatcher, Andrew Heaford, Andrew Heller, Tracy Honan, Nathan Houde, Lee Hughes, Bill Hulme, Ilian Iliev, Cristyn Kells, Alix Kieu, Peter Kisner, Dawa Lama, Tom Landers, Jean Pierre Leger, Doreen Lewis, Tammy Lewis, Yeshi Lokyitsang, Christine MacLean, Dick Marabella, Kebede Maru, Megan McCarthy, Tina McGhee, James Meldrim, Louis Meneus, Tanya Mihova, Val Mlenga, Leon Mulrain, Christian Newes, Na Nguyen, Thu Nguyen, Chou Dolma Norbu, Nyima Norbu, Ose Okoawo, Jennifer O'Loughlin, Bamidele Omotosho, Sahal Osman, Tenzin Phulchung, Pema Phunkang, Nadia Pierre, Rayale Rameau, Vernada Ray, Cecil Rise, Peter Rogov, Steven Seaman, Ngawang Sherpa, Brian Spencer, John Stalker, Nicole Stange-Thomann, Sharon Stavropoulos, Kevin Stetson, Casey Stone, Pierre Tchuinga, Senait Tesfaye, Jوماتhe Theodore, Yama Thoulutsang, Tsamla Tsamla, Nawang Tsomo, Duane Valle, Helen Vassiliev, Rose Veil, Andy Vo, Tsering Wangchuck, Tsering Wangdi, Dudley Wyman, Shailendra Yadav, Shane Yeager, Rahel Retta Yeshitela, Geneva Young, Joanne Zainoun, Lisa Zembeck

4. US Department of Energy Joint Genome Institute, 2800 Mitchell Drive, Walnut Creek, California 94598 USA; comprising affiliations to the following institutes:

***Los Alamos National Laboratory (LANL); P.O. Box 1663 Los Alamos, NM 87545; §Lawrence Berkeley National Laboratory (LBNL) One Cyclotron Road Berkeley, CA. 94720; †Lawrence Livermore National Laboratory (LLNL) 7000 East Ave. Livermore, CA 94550-9234; ‡Stanford Human Genome Center, Stanford University School of Medicine, Palo Alto, California 94305 USA**

Anne Abrajano[§], Catherine Adam[‡], Aaron Adamson[‡], Andrea Aerts[§], Arun Aggarwal[§], Dana Alcivare[§], Michelle Alegria[‡], Michelle Alegria-hartmann[‡], Jennifer Alleman[‡], Susan Allen[‡], Michael R. Altherr^{*}, Chris Amemiya[‡], Gina Amico-keller[‡], Janice Andora[‡], Carol Andredesz[‡], Tim Andriese[‡], Sinoula Apostolou^{*}, Terisita Arcaina[§], Marlon Arcaina[§], Andre Arellano[‡], Perry Arellano-Jones[§], Linda K. Ashworth[‡], Cara Aslanidis[‡], Lawreen Asuncion[‡],

Cristina Attix[†], Aaron Avila[†], Julie Avila[†], Phil Bach[§], Hummy Badri[†], Eva Bajorek[†], M. Baker[§], Richard Baker[§], Dan Baker[†], Michele Bakis[§], Michael Banda[§], Suba Basu[†], Mark Batzer[†], Jason Baumohl[§], Keith Beall[§], Leslie Beaucham *, George I. Bell *, J Benke[§], William Benner[§], Douda Bensasson[§], John Bercovitz[§], Anne Bergmann[†], Tony J. Beugelsdijk *, Rita Bhakta[†], Aleksandr Bituin[§], Stacey Black[†], Robert Blazej[§], Heather Blumer *, John Boehm[§], Juanan Boen[†], Marnel Bondoc[§], Eric Bowen[§], Brigitte F. Brandriff[†], Wade Brannon[§], Elbert Branscomb[†], Thomas Brettin *, Michael Bridgers *, Peter Brokstein[§], Nancy C. Brown *, Robert Bruce[†], David C. Bruce *, William J. Bruno *, Jennifer E. Bryant *, Judith M. Buckingham *, Kerem Bulbul[§], Nathan Bunker[†], Matt Burgin[†], Karolyn Burkhardt-Schultz[†], Paul Butler[†], Sean Caenepeel[§], David F. Callen *, Connie S. Campbell *, Evelyn W. Campbell *, Mary I. Campbell *, Mary L. Campbell *, Chenier Caoile[†], Lolo Cardenas[§], Faviola Cardenas[§], Anthony V. Carrano[†], Jason Carriere[†], Mario Cepeda[§], Patrick Chain[†], Jean F. Challacombe *, Yee Man Chan[†], Jarrod Chapman[§], Jeffrey Chapple[†], Leslie a. Chasteen *, Simeon Chavarria[§], Jin Chen *, Ray Chen[§], Chira Chen[†], Jan-Fang Cheng[§], Olga Chertkov *, Han C. Chi *, Sylvia Chin[†], Corey Chinn[§], Sally Chiu[§], Mari Christensen[†], A Chung[§], Michael J. Cinkowsky *, Lynn Clark[†], Lynn M. Clark *, David Cleveland[§], Jackie Cofield[†], Judith D. Cohn *, Rick Colayco[†], Jessie Combs[†], Robin Comstock[§], Karen Connolly[§], Alex Copeland[†], Rebecca Cordray[§], Earl Cornell[§], Sara Cotton[§], Olivier Couronne[§], Terrance Critchlow[†], Paul Critz[§], Stephanie Cummings[§], Eileen Dalin[§], Linda Danganan[†], Christopher Daum[†], Stuart Davidson[§], Cheryl Davis[§], Larry I. Deaven *, Larry L. Deaven *, Kerry Deere[†], David Degusta[§], Maria Deguzman[†], Paramvir Dehal[†], Pieter De Jong[†], Mirian Denys[†], John C. Detter[†], Laurie Devlin[†], Jennifer Dias[†], Victoria Dias[†], Genevieve Dibartolo[†], Mark Dickson[†], Jeanne Dietz-Band *, Richard Digennaro[§], Karen Dilts *, Mira Dimitrijevic-Bussod *, Kami Dixon[†], Long Do[†], Norman A. Doggett *, Kimberly Dong[§], Victor Dorsett[§], Suzanne Duarte[†], Inna Dubchak[§], Erin Dunwell[§], Evan Eichler[†], Chris Elkin[†], Jeffrey Elliott[†], Ger van den Engh[†], David Engle[§], Anne Marie Erler[†], Julio Escobar[†], Gerald Eveleth[†], Joseph J. Fawcett *, Alicia Ferguson[§], Anne Fertitta[†], Jim Fey[†], Patrick Fidel[§], Elizabeth Fields[†], Marie Fink[§], Laurice Fischer[†], Pat Fitch[†], J. Flanagan[§], Dave Flowers[†], Peg Folta[†], Jonathan Fong[§], Amanda F. Ford *, Dea Fotopulos[†], Matthew Fourcade[§], Jessica Fox[†], Ken Frankel[§], Marvin Frazier, Jane Fridlyand[§], Sharin Fuller[†], Celsa Gallegos *, Michael Galvez[§], Stuart Gammon[†], Emilio Garcia[†], Carmen Garcia[†], Antonio Garcia-Martinez[§], Alison Gardner *, Consuelo Garduno *, Jeffrey A. Garnes[†], Joseph M. Gatewood *, Binyam Gebreyesus[§], Cynthia Gelein[†], Maartin Gelpke[§], Anca Georgescu[†], Amy Geotina[§], Mary Gifford[§], Isaias Gil[§], Paul Gilna *, Jeff Gingrich[†], Kira Giovanelli *, Tijana Glavina[†], Darren Gold[†], Kristen Golinveaux[†], Maria Gomez[†], Eidelyn Gonzales[†], David Goodstein[§], Lynne A. Goodwin *, Laurie A. Gordon[†], Catherine Gordon[†], Ann Gorvad[†], Christine Gould[†], Deborah I. Grady *, Jennifer Grant[§], Bruce Gray[§], Jeffrey K. Griffith *, Igor Grigoriev[§], Jane Grimwood[†], Matthew Groza[†], Hannibal Guarin[§], Metzalli Guel[§], Kate Gunning[§], Jane Guo[§], Chi Ha[†], Allen Haim[§], Patrick Hajek[§], Matt Hamilton[§], Nancy Hammon[§], Sha Hammond[†], Khalid Hamza[§], Shunsheng Han *, Trevor Hawkins[§], Lauren Haydu[†], Keven Helfenbein[§], Uffe Hellsten[§], Nina Henderson[§], David Hendrix[§], Karla Henning[†], Victor Hepa[†], Charles Herman[§], Carl E. Hildebrand *, Issac Ho[§], Susan M.G. Hoffman[†], Ann Holtz[†], Caleb Holtzer[†], Roya Hosseini[§], Katherine Huang[§], Wayne Huang[†], Zhengping Huang[†], Heather Hue *, Hillary Hughes-Hull[†], David

Humphries[§], Rov Hunter II[§], Matt Hupman[§], Sandy Huynh[†], Paula Imbro[†],
 Nicole Inacio[§], Drew Ingram[†], Sanjay Israni[†], Mark Jacintho[§], Terri Jackson[§],
 Joseph Jaklevic[§], Michael Jaklevic[§], Jamie Jett[§], Phillip E. Jewett^{*}, Jian Jin[§],
 Lori Johnson[†], Stephanie Johnson[†], Genevieve Johnson[†], Myrna D. Jones^{*},
 Micheil Jones[§], Yun Jordan[§], Eugene Jung[§], Kristen Kadner[§], Orsalem Kahsai[§],
 Orsalem Kahsai[§], Pat Kale[†], Hitesh Kapur[†], Gifford Keen^{*}, Laura Kegelmeyer[†],
 Lisa Kegg[†], David Keys[§], Arsi Khan[†], Susu Khine[†], Jennifer Kim[§], Joomeyong
 Kim[†], Heather Kimball[§], William Kimmerly[§], Emanuel H. Knill^{*}, D Knorr[†], Arthur
 Kobayashi[†], William Kolbe[§], Marie-Claude Krawczyk^{*}, Gabriel Kremmidiotis^{*},
 Brent Kronmiller[†], Duane Kubischta[§], Jennifer Kuehl[§], Carol Kuhn[†], Chinnie
 Kwan[†], Amy Kyle[†], Anne Lacombe[§], Melanie Lafrades[§], Marissa Lam[§], Edward
 Lam[§], Jane E. Lamerdin[†], Christine Lansang[†], Victoria Lao[†], Alla Lapidus[§],
 Bernadette Lato[†], Lisa Lee[§], Peter Lee[§], Joon ho Lee[§], Denise Lee[†], Byung-in
 Lee[†], Karl Lehman[§], Gregory Lennon[†], Kendra Lesar^{*}, Keith Lewis[§], Tina
 Leyba^{*}, Kim Lieuallen[†], Ken Lindo[§], K. Lindquist[§], Kirsten Lindstrom[§], Albert
 Linkowski[§], Jing Mei Liu^{*}, Stephanie Liu[†], Crystal Llewellyn-Silva[§], Rebecca
 Lobb^{*}, Jonathan I. Longmire^{*}, Jonathan L. Longmire^{*}, Frederick Lopez[†], Jose
 Lopez[†], Yunian Lou[§], Michael G. Lowenstein^{*}, Stephen Lowry[§], Robert Lucas[§],
 Susan Lucas[†], Thom Ludeman^{*}, Lyndsey Lundgren[§], Daniel Lynch[§], Gary Ma[§],
 Migdad Machrus[§], Madison Macht[†], Catherine A. Macken^{*}, Ramki
 Madabhushi[†], Magner[†], Venus Mahmoodi[§], Ryan Mahnke[†], Stephanie
 Malfatti[†], Mary I. Maltbie^{*}, Chitra Manohar[†], Marisa Mariano[†], Graham A. Mark
^{*}, Thomas G. Marr^{*}, Christian Marroquin[§], Christopher Martin[§], Joel Martin[§],
 Michele Martinez[§], Diego Martinez[†], Hadi Masood[†], Cynthia Maunes[†], Mary Kay
 McCormick^{*}, Paula McCready[†], Phil McGurn[†], Kimberly McMurray^{*}, Kimberly
 L McMurray^{*}, Jenny McNinch[†], Catherine Medina[†], Linda J. Meincke^{*}, Linda J.
 Meincke^{*}, George Mercado[†], Carl Mieczkowski[§], Maggie Mier^{*}, Trini Miguel[§],
 Danielle Mihalkanin[†], Christie Miller[§], Donald Miller[†], Sheri Miner[†], Monica Misra
^{*}, Sophia Mitina[§], Harvey Mohrenweiser[†], Joseph Monforte[§], Mishelle
 Montgomery[†], Jenna Morgan[§], Jerry Morton[†], Robert K. Moyzis^{*}, Shibani
 Mukherjee[§], Mark O. Mundt^{*}, A. Christine Munk^{*}, Christie A. Munk^{*}, Michael
 Murphy[§], Christine Murray[†], Richard Myers[†], Richard Nandkeshwar[†], Cleo M.
 Naranjo^{*}, Deborah A. Nelson^{*}, Catherine Nelson[§], Ward Nelson[†], David O.
 Nelson[†], Kathryn Nelson[§], Jennifer Neunkirch[§], April Newman[†], Terrence Ng[§],
 Le-Thu Dinh Nguyen[§], Hoa Nguyen[§], Lisa Nguyen[§], Amber Nivens[§], Matt
 Nolan[†], Matt Nolan[†], Larry Nowlin[§], Pierre Oddone[§], Jason Olivas[†], Anne S.
 Olsen[†], Ivan Ovcharenko[§], David Ow[†], Paola Pace[§], Elizabeth Pack^{*},
 Anuradha Padki[§], Krishnaveni Palaniappan[§], Michael Palazzolo[§], Beverly
 Parson-Quintana^{*}, Shripa Patel[§], Robert M. Pecherer^{*}, Vivian Peng[§], Yi
 Peng[§], Ze Peng[§], Len A. Pennacchio[§], Rene Perrier[§], Brad Pesavento[†], Karl
 Petermann[§], Linda Peters[§], Ellen T. Peterson^{*}, Erin Peterson[§], Angela
 Peterson[†], Joyce Pfeiffer[§], Hoan Phan[†], C. Piscia[§], Maurice Pitesky[†], Sam
 Pitluck[§], Ingrid Plajzer-Frick[§], Alex Poliakov[§], Martin Pollard[§], Jos Polman[§],
 Aaron Porter[§], Martha Posada[§], Pat Poundstone[†], Jason Powell^{*}, Daisy
 Prado[†], Christa Prange[†], Paul Predki[§], Jennifer Primus[†], Lyle Probst[†], Nicholas
 Putnam[§], Osama Qasem[§], Glenda Quan[†], Mohan Rajagopal[§], Melissa
 Ramirez[†], Lucia Ramirez[†], Nicole Ramos[†], David Randolph[§], Irma Rapier[§],
 Barry Rappaport^{*}, Sam Rash[†], Robert I. Ratliff^{*}, Aditya Ray[§], Warren Regala[†],
 Charlie Reiter[§], James Retterer[†], Paul Richardson[§], Kristi Richardson[†], Paul
 Richardson[§], Darryl o. Ricke^{*}, B.E. Riley[§], Angel Rivera[†], Simon Roberts[§],
 Donna I. Robinson^{*}, Dezere Robinson[§], Chris Robinson[†], Donna L. Robinson^{*},

Juan Rodriguez[§], Alex Rodriguez[†], Stephanine Rogers[†], Daniel Rokhsar[§], Stephanie Ross[‡], Edward M. Rubin[§], Jeffrey Rule[§], Andrea Ryan[§], George Sakaldas[‡], Azaf Salamov[§], Angelica Salazar[†], Brent Sanders[§], Christina Sanders[‡], R. Sarmiento[§], Suraj Satpathy[§], Elizabeth H. Saunders^{*}, William W. Sawhill^{*}, Eric Saxman^{*}, Jeremy Schmutz[†], Duncan Scott[§], Paul Scott[§], Damian Scott[‡], Burt Seymour[‡], Saima Shams[‡], Harris Shapiro[§], Maria Shin[§], Timothy Shought^{*}, Jeff Shreve[§], Linda Sindelar[§], Evan Skowronski[‡], Nathaniel Slater[§], Tom Slezak[‡], Karen Smith[§], Doug Smith[§], Joel Smith[‡], Troy Smith[‡], Cari Soderlund^{*}, Corey Spainhower[§], Raymond I. Stallings^{*}, Malinda Stalvey^{*}, Justin T. Stege^{*}, Shaella Stephens-Bolds[§], Victor Stevko[§], Evan Stone[§], Jonathan Strasser[§], Lisa Stubbs[‡], Janet Stultz[§], Sandhya Subramanian[§], Leslie J. Summers[‡], Robert D. Sutherland^{*}, Grant R. Sutherland^{*}, Kristina Tacey[§], Beckie Tagett^{*}, Tori Takaoka[§], Tracy Takenaka[§], Serena Tam[§], Olivia Tan[†], Roxanne Tapia^{*}, Owatha I. Tatum^{*}, Astrid Terry[‡], Judith G. Tesmer^{*}, Nina Thayer^{*}, James Theil[§], Paulette Thomas[‡], Linda S. Thompson^{*}, Hope Tice[‡], Damon Tighe[§], David C. Torney^{*}, Mary Tran-Gyamfi[‡], Margie Trankiem[‡], Barbara J. Trask[‡], Marianne Treuhaff[‡], Stephan Trong[‡], Ming Tsai[†], Susan Tsujimoto[‡], Heidi Turner[‡], Katherine Tynan[‡], Stephanie Ueland[‡], Samantha Ueng^{*}, Levy E. Ulanovsky^{*}, Chun Un[§], Quyen Ung[§], Anna Ustaszewska[‡], Michelle Valdez^{*}, Yvonne Valles[§], Marvin Van Dilla[‡], Ryan Van Luchene[§], Zachary Vardanian[§], Michelle Vargas[‡], Steffan Vartanian[†], Eugene Veklerov[§], Nelson Velasco[‡], Lisa Velasquez[‡], Lisa Vergez[‡], Vijay Viswanathan[‡], Nu Vo[†], Mark Wagner[‡], Mark Wagner[‡], Keya Walker[§], Mei Wang[§], Joann Wang[§], Edward Wehri[‡], Richard Weidenbach[§], Li Weng[§], Sarah Wenning[‡], Sara Wentz[‡], Jeremy Wheeler[†], P. Scott White^{*}, Catherine White[§], Jennifer White[‡], Scott P. White^{*}, Scott Whitmore^{*}, Sarah Wiegel[†], Albert I. Williams^{*}, Albert L. Williams^{*}, Patricia I. Wills^{*}, Richard Wills[‡], Patricia L. Wills^{*}, Steve Wilson[§], Jessica Wollard[‡], Andrew W. Womack^{*}, Benjamin Wong[‡], Diane Wood^{*}, Eric Woods[§], Tanja Woyke[§], Kristin Wright[‡], Jung-Rung Wu^{*}, Kevin Wu[†], Melissa Wycoff-Montenegro[§], Stacia Wyman[§], Gary Xie^{*}, Alex Xu[§], Lynn Yamamoto[§], Joan Yang[†], Candace Yano[§], Mimi Yeh[‡], Kathy Yokobata[‡], Jennifer Yokoyama[§], Charles Yu[§], Brian Yumae[§], Rui Yun[§], Qing Zhang[§], Carol Zhou[‡], Deborah Zierten[†]

5. Baylor College Of Medicine Human Genome Sequencing Center, Baylor College Of Medicine, One Baylor Plaza, Houston Texas 77030 USA

Charles Q. Adams, Babajide Adio-Oduola, Carlana C. Allen, Heather Allen, Stephen L. Alsbrooks, Harshinie C. Amaratunge, Amita G. Amin, Vivian Anyalebechi, Heather Hope Arredondo, Chinwe O. Asomugha, Shannon Michelle Austin, Mulu Ayele, Dilrukshi P. Bandaranaike, Pertrice Baptiste, Joseph A. Barbaria, Arthur Beaudet, Terell M. Bellard, Michael Anthony Benard, Venita Bhuchar, Keshia E. Bimage, Kaneza Biswalo, Jessica Anne Blair, Tia Blanks, David B. Blomstrom, Peter R. Blyth, David Bonnin, Angela K. Brimhall, Mary J. Brown, Michael Brown, Nathaniel P. Bryant, Christian J. Buhay, Paula Ellen Burch, Carrie E. Burkett, Kevin L. Burrell, Eliana Calderon, Veronica Cardenas, Kelvin Carter, Kristal Casias, Iracema Cavazos, Sandra R. Cavazos, Heather Ceasar, Joseph Chacko, Sheryl N. Chan, Dean Chavez, Guan Chen, Mike Z. Chen, Rui Chen, Zhijian Chen, Constantine Christopoulos, Joseph Chu, Kerstin Petra Clerc Blankenburg, Raynard Cockrell, Caroline D. Cox, Marcus D. Coyle, Amanda L. Crawford, Andrew Cree, Michelle Dang, Stephanie R. Dathorne, Mary Louise Davila, Candi Mon'et Davis, Clay Davis, Latarsha Davy-Carroll, Claudia

De Anda, Andrea De Latorre, Oliver Delgado, Shawn Denson, Christine Deramo, Yan Ding, Huyen H. Dinh, Jeremy E. Donlin, Karen J. Douthwaite, Heather Draper, Lisa Marie D'Souza, Shannon Dugan-Rocha, Adam M. Dunn, Kenneth J. Durbin, Darius Dziuda, Christopher D. Earnhardt, Kristy A. Eaves, Darren Edgar, Susan Omwanghe Osayanro Edionwe, Amy Egan, Natalia Emelianenko, Alexandra J. Emery-Cohen, Michael Escotto, Craig S. Eugene, Sonia Fernandez, Pushpa Ranjani Fernando, Maria C. Finley, Nicole Flagg, Lisa D. Forbes, Myre J. Foster, Abdul M. Gabisi, Marvin Garcia, Ricardo M Garcia III, Toni T. Garner, Melissa Garza, Laura Gay, Stephanie L Gench, Sayantan Ghose, Richard A. Gibbs, Rachel Gill, Guillermo B. Gonzalez, Michelle L. Grady, William Guerra, Whitney V. Guevara, Preethi Gunaratne, Brett Lynn Hall, Brittany Hall, Cerissa Hamilton, Keelan A. Hamilton, Vincent A. Hanak, Brandy A. Harbes, Paul Havlak, Alicia C. Hawes, Ebere Sylvia Onyirioha Hawkins, Nicholas Henderson, Judith Hernandez, Omar Hernandez, Allyson Herseim, Sandra Hines, Matthew Edward Hitchens, Anne V. Hodgson, Marilyn E. Hogues, Mara Hollaway, Barbara Hollins, Deana K. Homs, Farah J. Homs, Amber Hornsby, Stephanie R. Howard, Latoya Lynette Howell, Sally Lucinda Howells, Mei Huang, James W. Huber, Steven Hulyk, Jennifer Hume, Michael Hunt, Devincent G. Idlebird, Kelvin C. Imo, Laronda R. Jackson, Leni Susan Jacob, Alberto Jimenez, Bennie Johnson, Rudy Johnson, Angela Jolivet, Ryan Kagan, Shayna P. Kelly, Susan H. Kelly, Umer F. Khan, Ziad Mohid Khan, Divya Khurana, Laquisha Monique King, Haika Kisamo, Christie L. Kovar, Larissa Kulish, Belita Leal, Heather Lebow, Cherie Jenae Lee, Kenneth Lee, Fitzherbert Henderson Legall III, Jaclyn M. Levan, Ernest K. Lewis, Lakeshia C. Lewis, Lora R. Lewis, Jane Li, Zhangwan Li, Jing Liu, Jing Liu, Wen Liu, Yih-Shin Liu, Dhammika Liyanage, Pamela London, John Lopez, Lora Lopez, Lorna M. Lorensuhewa, Hermela Loulseged, Demetria A. Lovett, Ryan J. Lozado, Xiuhua Lu, Yue Lu, Alice Lucier, Raymond L Lucier, Jie Ma, Xiaohui Ma, Renita C. Madu, Manjula Maheshwari, Mathew Mahindartne, Kevin Malloy, Brian Mangum, Patricia Mapua, David Mareth, Kirt Martin, Ashley D. Martindale, Evangelina Martinez, Elizabeth Massey, Sterling D. Matthews, Samantha Mawhiney, Michael P. McLeod, John D. McPherson, Michael G. Meador, Sylvia Mendez, Christian Mercado, Iracema C. Mercado, Christina E. Merritt, Michael Lee Metzker, Mason W. Mileur, George R. Miner, Emmanuel Minja, Teresa Mitchell, Farida Mohabbat, Khatera Mohabbat, Julie Montemayor, Baize Montgomery, Niki Moore, Margaret B. Morgan, Sidney Morris, Mala Munidasa, Matthew B. Murphy, Debra Dianne Murray, Donna Marie Muzny, Latha Nair, Seema R. Nair, Amit N. Nanavati, Colin E. Nankervis, Lynne V. Nazareth, Dearly D. Neal, Robin Ngoc Ngo, Bao-Viet Nguyen, Natalie M. Nguyen, Ngoc Bich Nguyen, Elizabeth Nickerson, Sarah Louise Norris, Ogechi O. Nwaokemele, Stanley Nwokenkwo, Melissa Obregon, Maryann Oguh, Geoffrey O. Okwuonu, Kenneth C. Okwuonu, Alisa Olarnpunsagoon, Njideka Oragunye, Jerry Orantes, Rodolfo J. Oviedo, Araceli C. Pace, Shane Pahlavan, Vladimir Panasenkov, David Neil Parker, Kenya L. Parks, Shiran Pasternak, Bella Mayurkumar Patel, Jalpa N. Patel, Vishal V. Patel, James Patrick, Heidie A. Paul, Brett A. Payton, Agapito Perez, Lesette M. Perez, William Perrin, Leonard G. Peters, Adam Pickens, Natasha Pieper, Farah Jo Homs Plopper, Alan Poindexter, Nima M. Pourrajabi, Eltrick L. Primus, Ling-Ling Pu, Maria Puazo, Xiang Qin, Miyo M. Quiles, Juana B. Quiroz, Dina Rabata, Eric K. Rachlin, Kacy Reeves, Richard A. Reigh, Yanru Ren, Stephen Richards, Catharine M. Rives, Travis L. Rodkey, Alberto Rojas, Erica M. Ruiz, San Juana Ruiz, Moazzam Mohammad Sana, Wendi Sanders, Jireh Santibanez, Glenford G. Savery, Steven Edward Scherer, Matthew

Schnabl, Graham Scott, Hua Shen, Ida Sisson, Erica Sodergren, Titilola Sonaike, Xing-Zhi Song, Richard P. Sorelle, Anastasia L. Sparks, David Steffen, Angelica E. Sutton, Amanda F. Svatek, Jessica Svetz, Leah Anne Svetz, Paul E. Tabor, Kavitha S. Tamerisa, Aparna Tamirisa, Hongli Tang, Jennifer Tansey, Christina C. Taylor, Tineace R. Taylor, Ethan Brett Telford, Nicole Thomas, Shereen Thomas, Rachel Diane Thorn, Ly Thanh Tran, Zulma Y. Trejos, Brenda Kaye Trevino, Ogechi Nkemdirim Ukegbu, Jeremy B. Urban, Kamran Usmani, Ruben E. Valas, Charles E. Vargo, Lydia I. Vasquez, Virginia A. Vera, Daniel Verduzco, Donna M. Villasana, Lenee Waldron, Davian L. Walker, Randy E. Wall, Natalie Walsham, Jie Wang, Ling Wang, Qiaoyan Wang, Suzhen Wang, Stephanie Ward-Moore, James T. Warren, Xuehong Wei, George Weinstock, Mary Melissa Wesley, David A. Wheeler, Flower White, Manosha I. Wickremasinghe, Gabrielle A. Williams, Angela L. Williamson, Regina Wleczyk, Hailey S. Wooden, Steven H. Wooden, Kim Carlyle Worley, Rita A. Wright, Jiaqian Wu, Syed Yakub, Jennifer Yen, Lillienne Yoon, Vivienne Yoon, Fuli Yu, Ye Yuan, Jingkun Zhang, Shaojie Zhang, Zhengdong Zhang, Jianling Zhou, Sara E. Zorrilla

6. RIKEN Genomic Sciences Center, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama City, Kanagawa, 230-0045, Japan (*Technical Staff; †Technical Support)

Yoshiyuki Sakaki, Masahira Hattori, Asao Fujiyama, Todd Duane Taylor, Atsushi Toyoda, Yasushi Totoki, Hidemi Watanabe, Tetsushi Yada, Yoko Kuroki, Hideki Noguchi, Katsuhiko Murakami, Tomoyuki Aizu*, Rie Arai*, Fumio Ejima*, Tomoko Hasegawa*, Etsuko Hashimoto*, Wakako Hashimoto*, Naomi Inagaki*, Shuuji Inoue*, Hinako Ishizaki*, Emi Isozaki*, Noriko Ito*, Mariko Iwatate*, Mikiko Iwatsu*, Kaoru Kaida*, Takako Kato*, Moe Kimura*, Miho Kiyooka*, Kayo Maruyama*, Ayuko Motoyama*, Hiroko Morita*, Maho Naka*, Saori Nakagawa*, Aki Nishida*, Etsuko Ogawara*, Reina Okumura*, Nao Ohta*, Ritsuko Ozawa*, Ryoko Sakai*, Noriko Shiino*, Minami Shoji*, Keiko Takahashi*, Nobuhiro Takano*, Yoriko Terada*, Miwako Tochigi*, Iori Tomizawa*, Yumi Tsukamoto*, Rina Tsuzuki*, Nozomi Uyama*, Noriko Yamamoto*, Yuko Yamamoto*, Yasue Yamashita*, Miho Yonezawa*, Satoru Yoshida*, Hiromi Wada*, Michiru Fujioka†, Rintaro Fukawa†, Takehiko Itoh†, Takujiro Katayama†, Chiharu Kawagoe†, Syunsuke Nagao†, Nobuhiro Oomori†, Kenshiro Ooshima†, Hidetsugu Shimizu†, Jiu Qin Sun†, Takashi Tahara†

7. University of Washington Genome Center, Fluke Hall on Mason Road, Box 352145 Seattle WA 98195 USA

Rajinder Kaul, Maynard V. Olson, Will Gillet, Eric Haugen, Chris Raymond, Yang Zhou, Anthony Palmeiri, Channakhone Saenphimmachak, Sandhya Subramanian, Zaining Wu, Karen Phelps

8. Genoscope and CNRS UMR-8030, 2 Rue Gaston Cremieux, CP 5706, 91057 Evry Cedex, France

Roland Heilig, Ralph Eckenberg, Jean-Louis Petit, Núria Fonknechten, Corinne Da Silva, Laurence Cattolico, Michaël Levy, Valérie Barbe, Véronique de Berardinis, Abel Ureta-Vidal, Eric Pelletier, Virginie Vico, Véronique Anthouard, François Artiguenave, Catherine Robert, Corinne Cruaud, Thomas Bröls, Philippe Brottier, Béatrice Ségurens, Sylvie Samain, Hervé Crespeau, Claude Scarpelli, Gábor Gyapay, Patrick Wincker, William Saurin, Jean Weissenbach, Fumihiko Matsuda

9. Department of Molecular Biology, Keio University School of Medicine 35 Shinanomachi Shinjuku-ku, Tokyo 160-8582, Japan

Nobuyoshi Shimizu, Shinsei Minoshima, Jun Kudoh, Shuichi Asakawa, Kazuhiko Kawasaki, Kazunori Shibuya, Takashi Sasaki, Atsushi Takayanagi, Atsushi Shimizu, Ai Shintani, Eriko Nakato, Susumu Mitsuyama, Satoru Yamazaki, Izumi Obayashi, James Schmeits, Masafumi Ohtsubo, Michiyo Okui, Yuji Murayama, Meng K. Lim, Saho Ohno, Kentaro Nagamine, Yimin Wang, Jun Wang, Aiko Shiohama, Norie Aoki, Nobuaki Shindoh, Hideto Maeda, Katsuhiro Hosono, Hao Yang, Tomohiro Izumiyama, Miho Tatsuyama, Nori Sawada, Yoshitaka Yamaguchi, Masataka Suzuki, Yosuke Ohsawa, Michi Asahina, Yuko Matsushita, Sabine K. Ishikawa, Mio Mejima, Tamami Adachi, Teruyo Asakawa, Mie Furuhashi, Misuzu Osada, Kyoko Ohmori, Etsuko Nakamura, Naoko Sanuki, Masayo Nakagawa, Naoko Togashi, Junko Hamada, Meishan Shen, Mai Kobayashi, Junko Onoda, Aki Mitsui, Saki Watanabe, Akemi Miyazawa, Shinobu Iwakawa, Akiko Ishibashi, Kei Hosoda, Shuko Matsumoto, Kazuyasu Kojima, Hiromi Tsuruoka, Yali Xuan, Fumiaki Ito*, Yoshiko Shimizu[§], Stylianos E. Antonarakis[‡]

**Setsunan University, Hirakata, Osaka, Japan*

§Kyorin University School of Health Sciences, Hachioji, Tokyo, Japan

‡University of Geneva Medical School & University Hospitals, Switzerland

10. Genome Therapeutics Corporation, 100 Beaver St. Waltham, Massachusetts 02453 USA. Current address: Agencourt Bioscience Corp 100 Cummings Center, Beverly MA 01915 USA

John Battles, Patrick Cahill, David Camire, Lynn Doucette-Stamm, Kim Fechtel, Erik Gustafson, Jennifer Horne, Christopher Hynds, Arnold Kana, Hong-Mei Lee, Minh Nguyen, Andrea Rogosin, Marc Rubenfield, Douglas R. Smith, Lisa Standing, Bill Torcaso, Jason Tsolas, Jennifer Walsh, Ying Wang, Keith Weinstock

11. Institute for Systems Biology, 1441 N. 34th Street, Seattle WA 98103

Brian Birditt, Scott Bloom, Leroy Hood, Amardeep Kaur, Ryan Nesbitt, Lee Rowen

12. Department of Genome Analysis, Institute of Molecular Biotechnology, Beutenbergstrasse, 11, D-07745, Jena, Germany

Matthias Platzer, Cornelia Baumgart, Silke Förste, Petra Galgoczy, Gernot Glöckner, Yvonne Görlich, Ivonne Heinze, Niels Jahn, Dorothee Lagemann, Rüdiger Lehmann, Elke Meier, Evelyn Michaelis, Uta Petz, Kathrin Reichwald, Markus Schilhabel, Kathleen Seitz, Roman Siddiqui, Stefan Taudien, Gaiping Wen, Daniela Werler

13. Beijing Genomics Institute/James D. Watson Institute of Genome Sciences

(¹ Beijing Genomics Institute, Chinese Academy of Sciences/James D. Watson Institute of Genome Sciences, China; ² Institute of Human Genomics Aarhus University, Aarhus, Denmark; ³ Northern National Genome Center, Beijing, China; ⁴ Southern National Genome Center, Shanghai, China; ⁵ School of Medicine, Southeast University, Nanjing, China; ⁶ College of Life Sciences, Peking University, Beijing, China; ⁷ Center of Bio-X Life Sciences, University of Communication, Shanghai, China; ⁸ Department of Medical Genetics, University of Washington, Seattle, USA; ⁹ Institute of Biophysics, Chinese

Academy of Sciences, Beijing, China; ¹⁰ Genome Sequence Center, BC Cancer Research Center, Vancouver, Canada; ¹¹ Institute of Microbiology, Chinese Academy of Sciences, Beijing, China; ¹² Medical college, Xi'an Jiaotong University, Xi'an, China; ¹³ Hebei Medical University, Shijiazhuang, China; ¹⁴ The High School Affiliated to Renmin University Of China, Beijing, China; ¹⁵ Wenzhou Medical College, Wenzhou, China)

Jingyue Bao^{1,15}, Qiyu Bao^{1,15}, Weidong Bao, Shihua Bi, Xuemeng Bian, Lars Bolund^{1,2}, Tianjing Cai³, Zhen Cai⁴, Ting Cao, Yuzhu Cao, Baoxian Chen, Chong Chen, Cong Chen, Jianlong Chen, Jie Chen⁴, Junbao Chen, Lixia Chen³, Shu Chen¹⁴, Tong Chen^{4,5}, Xiaoyun Chen⁴, Xinyi Chen¹⁴, Yanjiong Chen^{1,12}, Yiyu Chen, Zhu Chen⁷, Zhihua Cheng⁷, Cheng Chi¹⁴, Hongjuan Cui, Jinhui Cui, Peng Cui^{1,13}, Bin Cong¹³, Li Dai, Yajun Deng^{1,12}, Hao Ding, Hui Dong⁷, Wei Dong, Xiaojia Dong³, Yutao Du^{1,13}, Hongyuan Fan, Keke Fan¹⁴, Jianqiu Fang, Guodong Feng, Haiyan Feng, Jie Feng, Xiaoli Feng, Gang Fu⁴, Qiushi Fu¹⁴, Anwu Gao, Jimei Gao, Quan Gao³, Yang Gao, Yimei Gao, Jianing Geng^{1,13}, Guanghui Gong, Jinying Gong³, Jingli Gu⁴, Jun Gu³, Wenyi Gu⁴, Xiaocheng Gu⁶, Qiaoning Guan, Qi Gui, Daorong Guo, Lili Guo¹³, Guiqing Han, Xurong Han, Wei Huang⁴, Fengying He³, Jiaying He, Lin He⁷, Jie Hu, Songnian Hu, Fang Huang, Guyang Huang^{4,7}, Xiaodi Hou¹⁴, Jia Jia⁴, Nan Jia, Xingchang Jia, Lu Jiang, Yanrui Jiang³, Ziyong Jiang, Yetao Jin, Yongsan Jin, Hui Kang⁴, Ning Kang³, Mary-Clare King^{4,8}, Yi Kong, Zhaohui Kou³, Jianghua Lai^{1,12}, Meng Lei, Changfeng Li, Chenji Li, Eryao Li³, Feifei Li, Gang Li, Jiayang Li, Jihong Li, Jing Li, Jingfei Li, Jingxiang Li, Li Li, Lili Li, Lin Li, Ming Li⁷, Nan Li, Ran Li, Shengbin Li¹², Shuping Li, Shuxia Li, Shuangding Li¹², Shuangli Li^{1,13}, Songgang Li, Tao Li^{1,12}, Wei Li⁹, Wenjie Li, Yan Li, Yanni Li, Yi Li, Zhijie Li, Jinsong Liao, Wei Lin, Wei Ling⁷, Boyong Liu, Cong Liu¹⁴, Dianwu Liu¹³, Haili Liu, Jing Liu, Jun Liu, Kai Liu, Ning Liu⁵, Siqi Liu, Wei Liu³, Xinshe Liu¹², Yanhua Liu, Yannan Liu, Yilin Liu, Ying Liu, Yu Liu, Yu Liu, Zhanwei Liu, Lingfeng Lu⁴, Tao Lu³, Yongxiang Lu, Chunqing Luo, Gang Lv⁹, Cheng Ma, Jiao Ma, Qingmei Ma³, Shanshan Meng, Feng Mu, Lin Ni⁴, Yuxin Niu, Jiaofeng Pan, Sisu Pan¹⁴, Qiuhui Qi, Xiaohua Qi, Xufang Qian⁷, Zengmin Qian, Boqin Qiang⁶, Zhenyong Qiao⁷, Shuangxi Ren⁷, Li Rong⁶, Chunyan Shao⁴, Yufen Shao, Fengye Shen⁷, Yan Shen⁶, Guibin Shi³, Hongfang Shi^{1,13}, Michael Smith^{4,10}, Liping Song, Shuping Song, Xiaohu Su¹⁴, Jiajia Sun, Jiandong Sun, Min Sun, Tao Sun, Wei Sun, Yongqiao Sun^{1,13}, Yu Sun, Yue Sun, Xinyu Tan⁶, Xiangjun Tang, Ran Tao, Chaoguang Tian, Wei Tian, Yan Tian, Yong Tian³, Yuqing Tian⁵, Jingli Tong, Yuefeng Tu⁴, Ma Wan⁷, Dong Wang, Feng Wang, Guangxin Wang, Guihai Wang, Hongjuan Wang⁷, Hongwei Wang⁶, Huanjie Wang¹⁴, Huifeng Wang, Jian Wang, Jingqiang Wang, Juan Wang, Jun Wang, Li Wang, Lijie Wang, Lijuan Wang, Lijun Wang⁴, Liquan Wang⁷, Shifen Wang, Shu Wang³, Wenjun Wang, Xiaolei Wang, Xiaoling Wang, Xiaoning Wang⁵, Xuefei

¹ Beijing Genomics Institute, Chinese Academy of Sciences/James D. Watson Institute of Genome Sciences, China

² Institute of Human Genomics Aarhus University, Aarhus, Denmark

³ Northern National Genome Center, Beijing, China

⁴ Southern National Genome Center, Shanghai, China

⁵ School of Medicine, Southeast University, Nanjing, China

⁶ College of Life Sciences, Peking University, Beijing, China

⁷ Center of Bio-X Life Sciences, University of Communication, Shanghai, China

⁸ Department of Medical Genetics, University of Washington, Seattle, USA

⁹ Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

¹⁰ Genome Sequence Center, BC Cancer Research Center, Vancouver, Canada

Wang, Xuegang Wang, Yan Wang, Ying Wang, Yuanyuan Wang, Shulin Wei, Gane K-S Wong, Chungeng Wu⁷, Dongying Wu, Qingfa Wu, Ruiming Wu, Xiao Wu¹⁴, Xiaojing Wu, Yan Xi, Yingying Xi³, Fei Xie, Yuqing Xiong, Jing Xu, Ruqin Xu, Shuhua Xu⁷, Wei Xu, Yan Xu¹⁴, Yuning Xu³, Zuyuan Xu, Zhenyu Xuan¹², Rui Xue, Yali Xue, Chunxia Yan, Fei Yan⁸, Guangmei Yan^{4,11}, Huanming Yang, Rui Yang¹⁴, Shudong Yang, Xiaonan Yang, Yongkui Yang, Zhijian Yao⁶, Chen Ye, Haifeng, Yin⁴, Bo You, Bing Yu^{1,12}, Jun Yu, Kaiwen Yuan, Yida Yuan, Shujie Yue, Yixin Zeng, Dong Zhai, Bo Zhang, Caimin Zhang, Fengmei Zhang, Guangyu Zhang, Guohua Zhang, Haiqing Zhang, Hongbo Zhang, Jingjing Zhang, Jiuchun Zhang, Lanzhi Zhang, Li Zhang, Meihua Zhang, Meng Zhang, Ming Zhang⁷, Ruhua Zhang, Tiezhen Zhang, Wei Zhang⁷, Xianglin Zhang⁴, Xiaoliang Zhang, Xiuqing Zhang, Wei Zhang, Yan Zhang³, Yi Zhang⁴, Yilin Zhang, Ying Zhang, Yuansen Zhang^{1,13}, Yuzhi Zhang, Hongmei Zhao, Lijian Zhao^{1,13}, Zhijing Zhao, Zhicheng Zhen⁶, Haibo Zheng^{1,12}, Ming Zhong⁷, Haixia Zhou, Nannan Zhou, Xinfeng Zhou³, Yan Zhou⁷, Yi Zhou³, Bingying Zhu⁷, Bofeng Zhu^{1,12}, Fenghua Zhu⁴, Genfeng Zhu⁴, Miao Zhu, Ning Zhu⁶, Yongge Zhu, Zhen Zhu, and Shitao Zhuang³

Finishing Group:

Weidong Bao, Bin Chen⁴, Chong Chen, Lihong Chen³, Zhu Chen⁴, Peng Cui, Keyue Ding³, Wei Dong, Gang Fu⁴, Wenyi Gu⁴, Wei Huang⁴, Jia Jia⁴, Wei Li, Boyong Liu, Chunqing Luo, Gang Lv⁴, Yuxin Niu, Xiaohua Qi, Shuangxi Ren⁴, Li Rong³, Yan Shen³, Haihui Sheng⁴, Liping Song, Xinyu Tan³, Chaoguang Tian, Yuefeng Tu⁴, Huifeng Wang, Jian Wang, Jing Wang⁶, Jingqiang Wang, Jinhua Wang³, Jun Wang, Qingfa Wu, Hui Xiong⁴, Jing Xu, Huanming Yang, Zhijian Yao³, Xiaonan Yang, Jun Yu, Haiqing Zhang, Li Zhang, Xianglin Zhang⁴, Yilin Zhang, and Genfeng Zhu⁴

Administrative Group:

Zhu Chen, Gang Fu, Jun Gu, Wei Huang, Jiayang Li, Zaiping Li, Qian Liu, Boqin Qiang, Yan Shen, Guihai Wang, Jian Wang, Xinlai Xu, Zhihong Xu, Huanming Yang, Jun Yu, Guoping Zhan

14. Max Planck Institute for Molecular Genetics Ihnestrassse 73, 14195, Berlin, Germany

Ralf Sudbrak, Alfred Beck, Alia BenKahla, Katja Borzym, Donald Buczek, Verena Gimmel, Katja Heitmann, Steffen Hennig, Sven Klages, Anna Kosiura, Michael Kube, Ines Müller, Hans Lehrach, Silvia Schmoger, Marie-Laure Yaspo, Richard Reinhardt

**15. Department of Genome Analysis, GBF – German Research Centre for Biotechnology. Mascheroder Weg 1, D-38124 Braunschweig, Germany
www.genome.gbf.de**

Helmut Blöcker, Ansgar Conrad, Martin Czubayko, Klaus Hornischer, Doris Järke, Michael Jarek, Gerhard Kauer, Tschong-Hun Löhnert, Gabriele Nordsiek, Maren Scharfe, Oliver Schön, Stephanie Thies

¹¹ Institute of Microbiology, Chinese Academy of Sciences, Beijing, China

¹² Medical college, Xi'an Jiaotong University, Xi'an, China

¹³ Hebei Medical University, Shijiazhuang, China

¹⁴ The High School Affiliated to Renmin University Of China, Beijing, China

¹⁵ Wenzhou Medical College, Wenzhou, China

16. Advanced Center for Genetic Technology, Applied Biosystems Division of Perkin-Elmer Corp., Foster City, CA 94404, USA

Ellson Chen (current address: Vita Genomics, Inc. 7FL, NO. 6, SEC. 1, JungShing Road, Wugu Shiang, Taipei 248, Taiwan), Primo Babayan, Chun-Nan Chen, Cheryl Heiner, Peter Ma, Massimo Zollo, Lin Zuo
Mapping Group (Washington University in St. Louis):
R. Nagaraja, David Schlessinger

17. Analysis group. Individuals listed below in alphabetical order performed analyses discussed in the manuscript, and/or were responsible for assembling and maintaining the finished sequence in the public database. Includes individuals listed under other headings. (¹Department of Computer Science, University of California at Santa Cruz, Santa Cruz CA 95064 USA; ²National Center for Biotechnology Information National Institutes of Health Bldg 38A 8600 Rockville Pike, Bethesda MS 20894 USA; ³MRC Functional Genetics Unit, University of Oxford, Department of Human Anatomy and Genetics, South Parks Road, Oxford, OX1 3QX, UK; ⁴Department of Genetics, Case Western Reserve University, 2109 Adelbert Road Cleveland, OH 44106 USA; ⁵Wistar Institute, 36th & Spruce Streets, Philadelphia, PA 19104 USA)

Robert Baertsch ¹, Ewan Birney ⁶, Hsiu-Chuan Chen ², Hiram Clawson ¹, Mark Diekhans ¹, Evan Eichler ⁴, Xose Fernandez-Suarez ⁶, Terrence S. Furey ¹, Leo Goodstadt ³, Martin Hammond ⁶, David Haussler ¹, Angela S. Hinrichs ¹, Fan Hsu ¹, Philip Johnson ², Donna Karolchik ¹, Arek Kasprzyk ⁶, Damian Keefe ⁶, W. James Kent ¹, Paul Kitts ², Darin London ⁶, Yontao T. Lu ¹, Donna Maglott ², Graham McVicker ⁶, Craig Melsopp ⁶, Sheila Paul ⁵, Chris P. Ponting ³, Glenn Proctor ⁶, Kim Pruitt ², Stephen Rice ³, Harold Riethman ⁵, Kate R. Rosenbloom ¹, Krishna M. Roskin ¹, Barbara Ruef ², Esther Schmidt ⁶, Gregory Schuler ², Michael Schuster ⁶, Jessica Severin ⁶, Xinwei She ⁴, Adam C. Siepel ¹, Damian Smedley ⁶, Arne Stabenau ⁶, Charles W. Sugnet ¹, Daryl J. Thomas ¹, Heather Trumbower ¹, Abel Ureta-Vidal ⁶, Imre Vastrik ⁶, Caleb Webber ³, Ryan J. Weber ¹, Cara Woodwork ⁶

18. Scientific management National Human Genome Research Institute, National Institutes of Health, Bethesda MD 20892 USA

Francis S. Collins, Mark Guyer, Jane Peterson, Adam Felsenfeld, Kris Wetterstrand, Sandra Kamholz