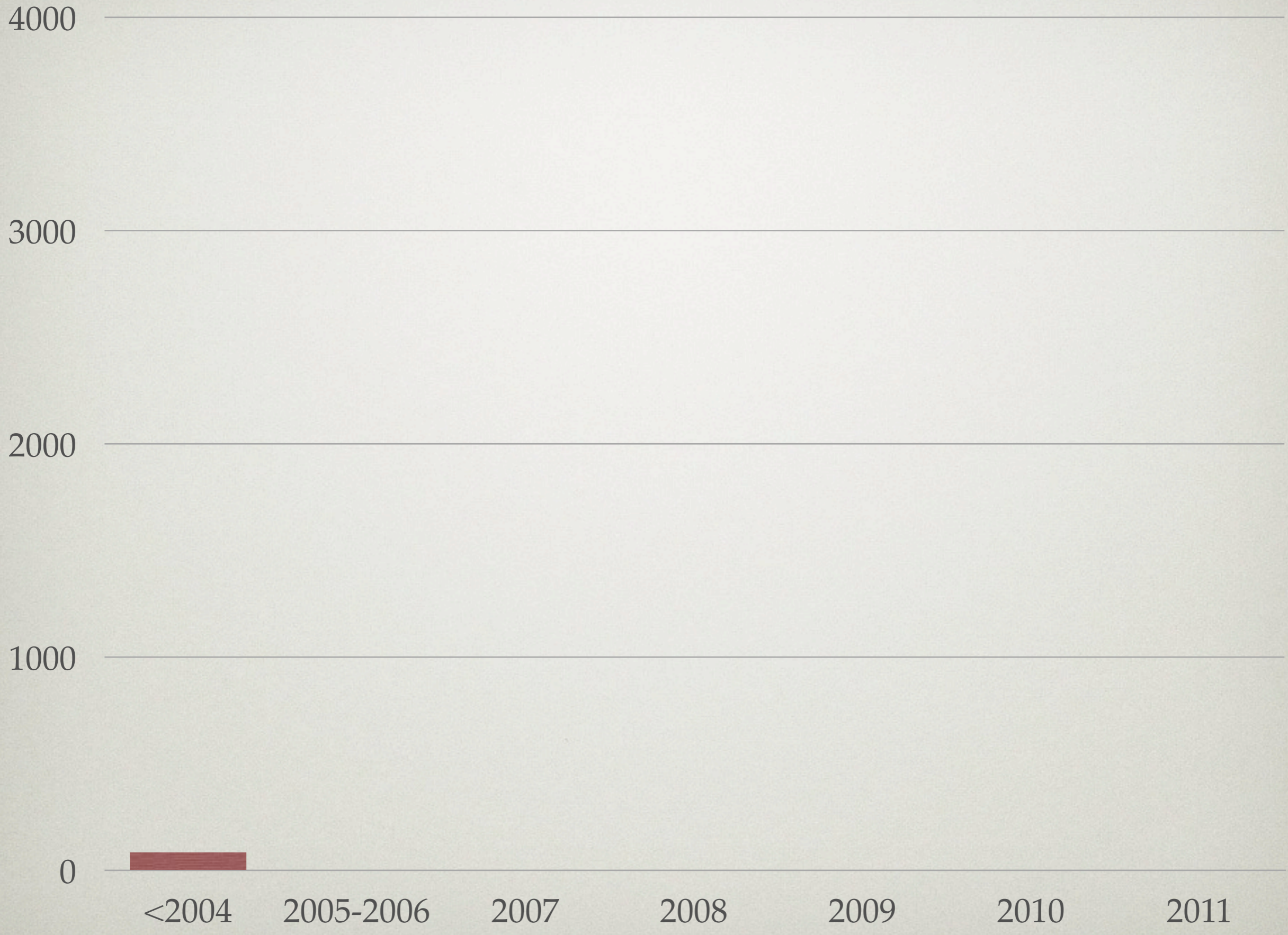
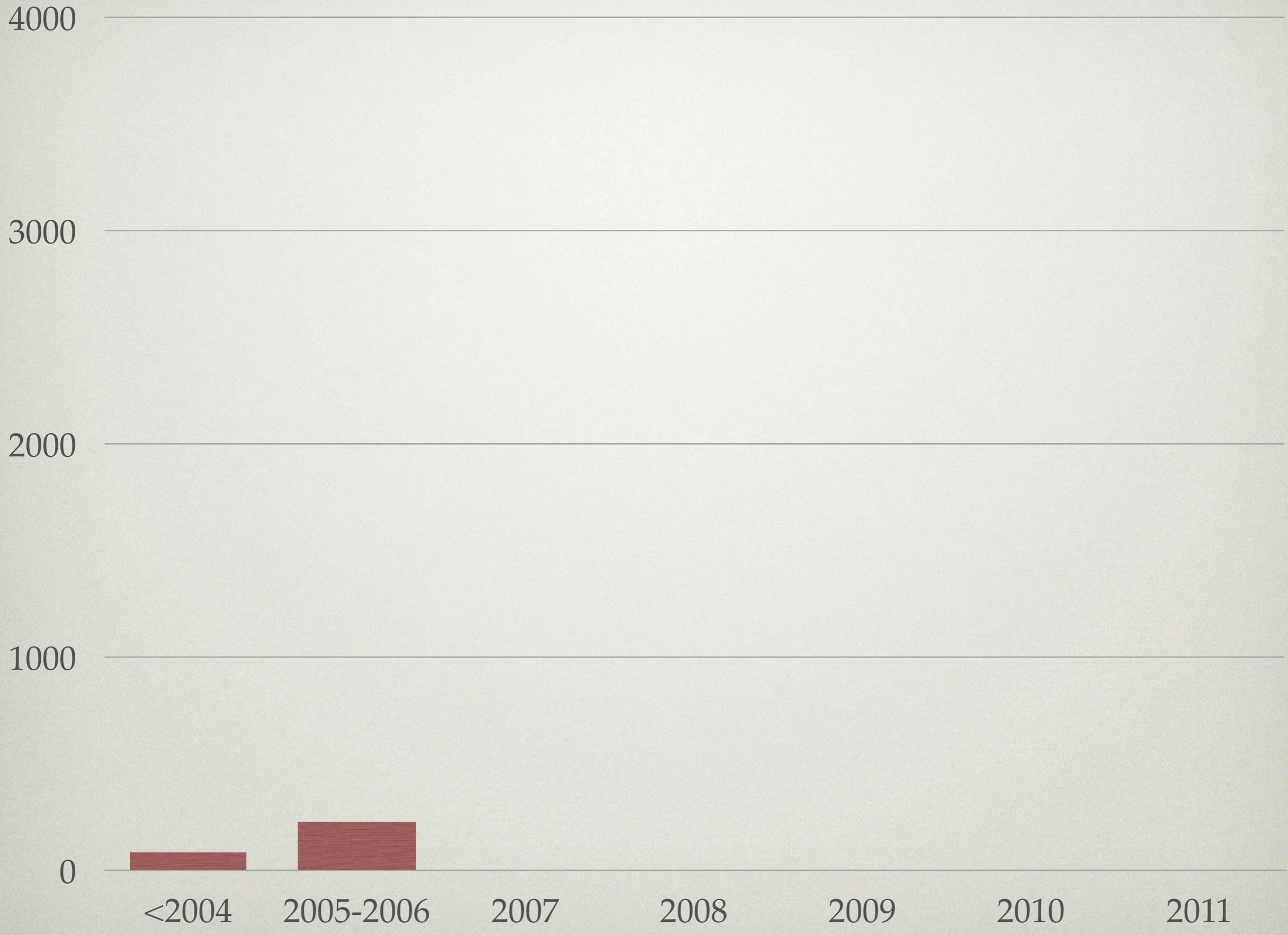
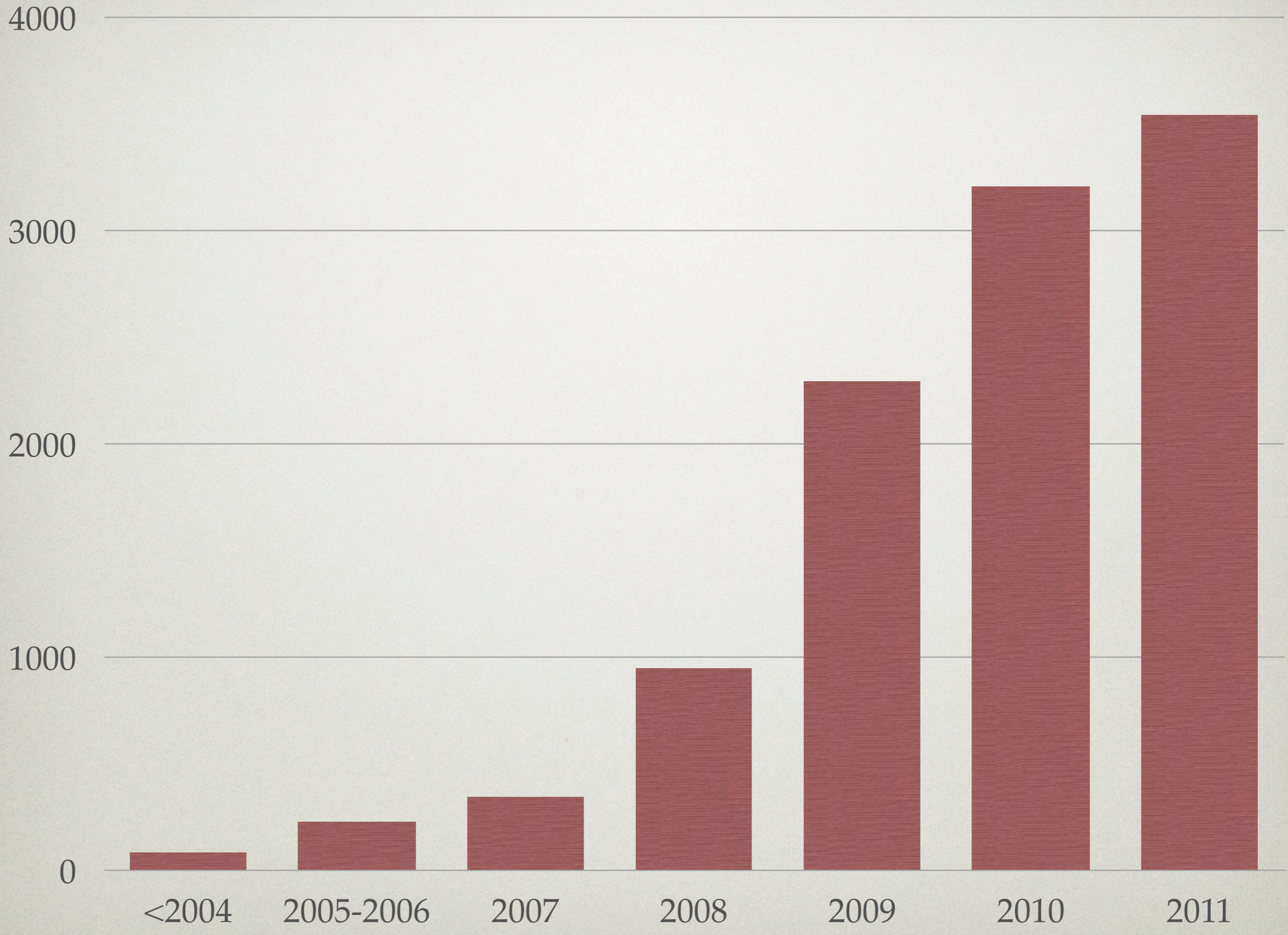


- Число публикаций, упоминающих метод полногеномного анализа ассоциации (Genome-Wide Association, GWA) по годам
- База данных PubMed
- Запрос ("genome-wide association" OR "whole-genome association") AND 2011[dp]







4000

3000

Теоретическое
обсуждение,
разработка
технологии и
ресурсов

0

<2004

2005-2006

2007

2008

2009

2010

2011



- Основной результат метода GWA - определение геномных районов (локусов), вариация последовательности которых связана с болезнями и другими признаками (человека)
- Число идентифицированных локусов (база данных GWAS Integrator)

8000

6000

4000

2000

0

2005

2006

2007

2008

2009

2010

2011

8000

6000

4000

2000

0



2005

2006

2007

2008

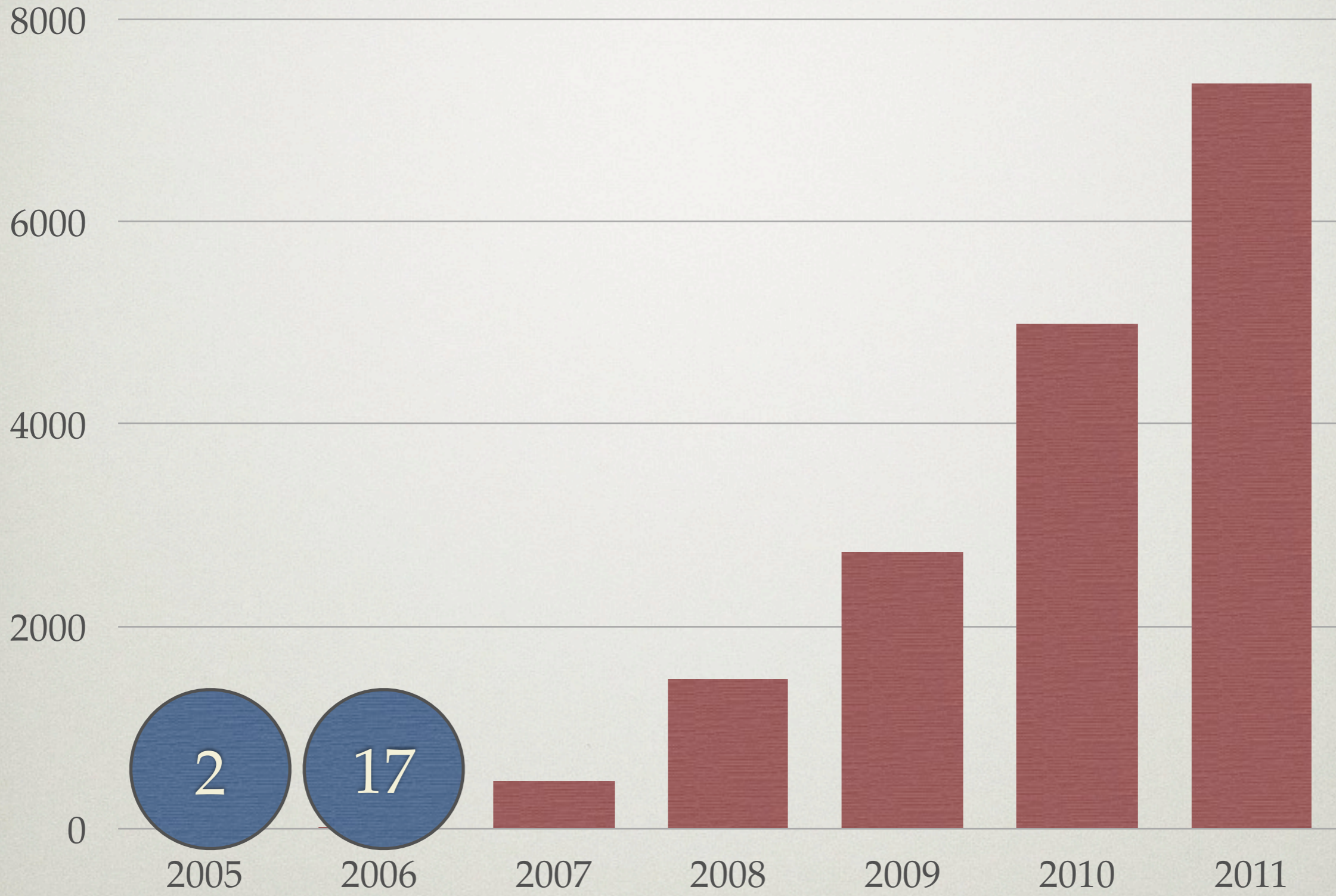
2009

2010

2011







A Genome-Wide Screen for Interactions Reveals a New Locus on 4p15 Modifying the Effect of Waist-to-Hip Ratio on Total Cholesterol

Ida Surakka^{1,2,3}, Aaron Isaacs^{3,4,5}, Lennart C. Karssen³, Pirkka-Pekka P. Laurila^{1,2,5}, Rita P. S. Middelberg^{6,7}, Emmi Tikkanen^{1,2}, Janina S. Ried⁸, Claudia Lamina⁹, Massimo Mangino¹⁰, Wilmar Igl¹¹, Jouke-Jan Hottenga¹², Vasiliki Lagou^{13,14}, Pim van der Harst¹⁵, Irene Mateo Leach¹⁵, Tõnu Esko^{16,17}, Zoltán Kutalik^{18,19}, Nicholas W. Wainwright^{20,21}, Maksim V. Struchalin³, Antti-Pekka Sarin^{1,2}, Antti J. Kangas²², Jorma S. Viikari²³, Markus Perola^{1,2,16}, Taina Rantanen²⁴, Ann-Kristin Petersen⁸, Pasi Soininen²⁵, Åsa Johansson¹¹, Nicole Soranzo^{10,20}, Andrew C. Heath²⁶, Theodore Papamarkou^{20,21}, Inga Prokopenko^{13,14}, Anke Tönjes^{27,28}, Florian Kronenberg⁹, Angela Döring^{29,30}, Fernando Rivadeneira^{31,32,33}, Grant W. Montgomery⁶, John B. Whitfield⁶, Mika Kähönen^{34,35}, Terho Lehtimäki^{35,36}, Nelson B. Freimer^{37,38}, Goncke Willemsen¹², Eco J. C. de Geus¹², Aarno Palotie^{1,5,20,39}, Manj S. Sandhu^{20,21}, Dawn M. Waterworth⁴⁰, Andres Metspalu^{16,17,41}, Michael Stumvoll⁴², André G. Uitterlinden^{31,32,33}, Antti Jula⁴³, Gerjan Navis⁴⁴, Cisca Wijmenga⁴⁵, Bruce H. R. Wolfenbuttel⁴⁶, Marja-Riitta Taskinen⁴⁷, Mika Ala-Korpela^{22,25,48}, Jaakko Kaprio^{1,49,50}, Kirsten O. Kyvik^{51,52}, Dorret I. Boomsma¹², Nancy L. Pedersen⁵³, Ulf Gyllenstein¹¹, James F. Wilson⁵⁴, Igor Rudan^{54,55}, Harry Campbell⁵⁴, Peter P. Pramstaller^{56,57,58,59}, Tim D. Spector¹⁰, Jacqueline C. M. Witteman^{31,32,33}, Johan G. Eriksson^{60,61,62,63,64}, Veikko Salomaa⁶⁵, Ben A. Oostra⁶⁶, Olli T. Raitakari^{67,68}, H.-Erich Wichmann^{29,69,70}, Christian Gieger⁸, Marjo-Riitta Jarvelin⁷¹, Nicholas G. Martin⁶, Albert Hofman^{31,32,33}, Mark I. McCarthy^{13,14,72}, Leena Peltonen^{1,2,5,18,39}†, Cornelia M. van Duijn^{3,4,33}, Yurii S. Aulchenko³¹, Samuli Ripatti^{1,2,20}*, for the ENGAGE Consortium

A Genome-Wide Screen for Interactions Reveals a New Locus on 4p15 Modifying the Effect of Waist-to-Hip Ratio on Total Cholesterol

Ida Surakka^{1,2,3}, Aaron Isaacs^{3,4,5}, Lennart C. Karssen³, Pirkka-Pekka P. Laurila^{1,2,5}, Rita P. S. Middelberg^{6,7}, Emmi Tikkanen^{1,2}, Janina S. Ried⁸, Claudia Lamina⁹, Massimo Mangino¹⁰, Wilmar Igl¹¹, Jouke-Jan Hottenga¹², Vasiliki Lagou^{13,14}, Pim van der Harst¹⁵, Irene Mateo Leach¹⁵, Tõnu Esko^{16,17}, Zoltán Kutalik^{18,19}, Nicholas W. Wainwright^{20,21}, Maksim V. Struchalin³, Antti-Pekka Sarin^{1,2}, Antti J. Kangas²², Jorma S. Viikari²³, Markus Perola^{1,2,16}, Taina Rantanen²⁴, Ann-Kristin Petersen⁸, Pasi Soininen²⁵, Åsa Johansson¹¹, Nicole Soranzo^{10,20}, Andrew C. Heath²⁶, Theodore Papamarkou^{20,21}, Inga Prokopenko^{13,14}, Anke Tönjes^{27,28}, Florent Kronenberg⁹, Angela Döring^{29,30}, Fernando Rivadeneira^{31,32,33}, Grant W. Montgomery^{34,35}, Terho Lehtimäki^{35,36}, Nelson B. Freimer^{37,38}, Gonnek Willems³⁹, Eco J. C. de Geus⁴⁰, Aarno Palotie^{1,5,20,39}, Manj S. Sandhu^{20,21}, Dawn M. Waterworth⁴¹, Andres Metspalu^{16,17,41}, Michael Stumvoll⁴², André G. Uitterlinden^{31,32,33}, Antti Jula⁴³, Gerjan Navis⁴⁴, Cisca Wijmenga⁴⁵, Bruce H. R. Wolfenbuttel⁴⁶, Marja-Riitta Taskinen⁴⁷, Mika Ala-Korpela^{48,49}, Jaakko Kaprio^{1,49,50}, Kirsten O. Kyvik^{51,52}, Dorret I. Boomsma¹², Nancy L. Pedersen⁵³, Ulf Gyllenstein⁵⁴, James T. Wilson⁵⁴, Igor Rudan^{54,55}, Harry Campbell⁵⁴, Peter P. Pramstaller^{56,57,58,59}, Tim D. Spector¹⁰, Jacqueline C. M. Witteman^{31,32,33}, Johan G. Eriksson^{60,61,62,63,64}, Veikko Salomaa⁶⁵, Ben A. Oostra⁶⁶, Olli T. Raitakari^{67,68}, H.-Erich Wichmann^{29,69,70}, Christian Gieger⁸, Marjo-Riitta Jarvelin⁷¹, Nicholas G. Martin⁶, Albert Hofman^{31,32,33}, Mark I. McCarthy^{13,14,72}, Leena Peltonen^{1,2,5,18,39†}, Cornelia M. van Duijn^{3,4,33}, Yurii S. Aulchenko³¹, Samuli Ripatti^{1,2,20†*}, for the ENGAGE Consortium

IF ~ 10

Loci influencing lipid levels and coronary heart disease risk in 16 European population cohorts

*Yurii S Aulchenko^{1,37}, Samuli Ripatti^{2,3,37}, Ida Lindqvist^{2,3}, Dorret Boomsma⁴, Iris M Heid^{5,6}, Peter P Pramstaller⁷⁻⁹, Brenda W J H Penninx¹⁰, A Cecile J W Janssens¹, James F Wilson^{11,12}, Tim Spector¹³, Nicholas G Martin¹⁴, Nancy L Pedersen¹⁵, Kirsten Ohm Kyvik¹⁶, Jaakko Kaprio^{3,17,18}, Albert Hofman¹, Nelson B Freimer¹⁹, Marjo-Riitta Jarvelin^{20,21}, Ulf Gyllenstein²², Harry Campbell¹¹, Igor Rudan^{11,23,24}, Åsa Johansson²², Fabio Marroni⁷, Caroline Hayward¹², Veronique Vitart¹², Inger Jonasson²², Cristian Pattaro⁷, Alan Wright¹², Nick Hastie¹², Irene Pichler⁷, Andrew A Hicks⁷, Mario Falchi^{13,25}, Gonneke Willemsen⁴, Jouke-Jan Hottenga⁴, Eco J C de Geus⁴, Grant W Montgomery¹⁴, John Whitfield¹⁴, Patrik Magnusson¹⁵, Juha Saharinen³, Markus Perola², Kaisa Silander², Aaron Isaacs¹, Eric J G Sijbrands^{1,26}, Andre G Uitterlinden²⁶, Jacqueline C M Witteman¹, Ben A Oostra²⁷, Paul Elliott²⁰, Aimo Ruokonen²⁸, Chiara Sabatti²⁹, Christian Gieger⁵, Thomas Meitinger^{30,31}, Florian Kronenberg³², Angela Döring⁵, H-Erich Wichmann^{5,6}, Johannes H Smit¹⁰, Mark I McCarthy^{33,34}, Cornelia M van Duijn¹ & Leena Peltonen^{2,3,35,36}, for the ENGAGE Consortium

Hundreds of variants clustered in genomic loci and biological pathways affect human height

A full list of authors and their affiliations appears at the end of the paper.

LETTER

doi:10.1038/nature09410

Hundreds of variants clustered in genomic loci and biological pathways affect human height

IF ~ 36

A full list of authors and their affiliations appears at the end of the paper.

IF ~ 36

Hundreds of variants clustered in genomic loci and biological pathways affect human height

A full list of authors and their affiliations appears at the end of the paper.

Hana Lango Allen^{1*}, Karol Estrada^{2,3,4*}, Guillaume Lettre^{5,6*}, Sonja I. Berndt^{7*}, Michael N. Weedon^{1*}, Fernando Rivadeneira^{2,3,4*}, Cristen J. Willer⁸, Anne U. Jackson⁹, Sailaja Vedantam^{9,10}, Soumya Raychaudhuri^{11,12}, Teresa Ferreira¹³, Andrew R. Wood¹, Robert J. Weyant⁸, Ayellet V. Segre^{11,14,15}, Elizabeth K. Speliotes^{10,16}, Eleanor Wheeler¹⁷, Nicole Soranzo^{17,18}, Ju-Hyun Park⁷, Jian Yang¹⁹, Daniel Gudbjartsson²⁰, Nancy L. Heard-Costa²¹, Joshua C. Randall¹³, Lu Qi^{22,23}, Albert Vernon Smith^{24,25}, Reedik Mägi¹³, Tomi Pastinen^{26,27,28}, Liming Liang²⁹, Iris M. Heid^{30,31}, Jian'an Luan³², Gudmar Thorleifsson²⁰, Thomas W. Winkler³⁰, Michael E. Goddard^{33,34}, Ken Sin Lo⁵, Cameron Palmer^{9,10}, Tsegaselassie Workalemahu²², Yuri S. Aulchenko^{2,4}, Åsa Johansson^{35,36}, M. Carola Zillikens³, Mary F. Feitosa³⁷, Tõnu Esko^{38,39,40}, Toby Johnson^{41,42,43,44}, Shamika Ketkar³⁷, Peter Kraft^{45,46}, Massimo Mangino¹⁸, Inga Prokopenko^{13,47}, Devin Absher⁴⁸, Eva Albrecht³¹, Florian Ernst⁴⁹, Nicole L. Glazer⁵⁰, Caroline Hayward⁵¹, Jouke-Jan Hottenga⁵², Kevin B. Jacobs⁵³, Joshua W. Knowles⁵⁴, Zoltán Kutalik^{41,42}, Keri L. Monda⁵⁵, Ozren Polasek^{56,57}, Michael Preuss⁵⁸, Nigel W. Rayner^{13,47}, Neil R. Robertson^{13,47}, Valgerdur Steinthorsdottir²⁰, Jonathan P. Tyrer⁵⁹, Benjamin F. Voight^{11,14,16}, Fredrik Wiklund⁶⁰, Jianfeng Xu⁶¹, Jing Hua Zhao³², Dale R. Nyholt⁶², Niina Pellikka^{63,64}, Markus Perola^{63,64}, John R. B. Perry¹, Ida Surakka^{63,64}, Mari-Liis Tammesoo⁶⁵, Elizabeth L. Altmaier^{9,10}, Najaf Amin², Thor Aspelund^{24,25}, Tushar Bhangale⁶⁵, Gabrielle Boucher⁵, Daniel I. Chasman^{66,67}, Constance Chen⁶⁸, Lachlan Coin⁶⁹, Matthew N. Cooper⁷⁰, Anna L. Dixon⁷¹, Quince Gibson⁷², Elin Grundberg^{17,26,27}, Ke Hao⁷³, M. Juhani Junttila⁷⁴, Lee M. Kaplan^{16,67,75}, Johannes Kettunen^{63,64}, Inke R. König⁵⁸, Tony Kwan^{26,27}, Robert W. Lawrence⁷⁰, Douglas F. Levinson⁷⁶, Mattias Lorentzon⁷⁷, Barbara McKnight⁷⁸, Andrew P. Morris¹³, Martina Müller^{31,79,80}, Julius Suh Ngwa⁸¹, Shaun Purcell^{14,82,83}, Suzanne Rafelt⁸⁴, Rany M. Salem^{9,10}, Erika Salvi^{85,86}, Serena Sanna⁸⁷, Jianxin Shi⁷, Ulla Sovio⁶⁹, John R. Thompson^{88,89}, Michael C. Turchin^{9,10}, Liesbeth Vandenput⁷⁷, Dominique J. Verlaan^{26,27}, Veronique Vitart⁵¹, Charles C. White⁸¹, Andreas Ziegler⁹⁰, Peter

Almgren⁹¹, Anthony J. Blomforth⁹², Harry Campbell⁹³, Lorena Citterio⁹⁴, Alessandro De Grandi⁹⁵, Anna Dominiczak⁹⁶, Jubao Duan⁹⁷, Paul Elliott⁹⁸, Roberto Elosua⁹⁹, Johan G. Eriksson^{99,100,101,102,103}, Nelson B. Freimer¹⁰⁴, Eco J. C. Geus⁵², Nicola Glorioso¹⁰⁵, Shen Haigang⁷², Anna-Liisa Hartikainen¹⁰⁶, Aki S. Havulinna¹⁰⁷, Andrew A. Hicks⁹⁵, Jennie Hu^{70,108,109}, Wilmar Ig²⁵, Thomas Illig²¹, Antti Jula¹¹⁰, Eero Kajantie¹⁰⁰, Tuomas O. Kilpeläinen³², Markku Koivinen¹¹¹, Ivana Kolcic⁵⁶, Seppo Koskenvuo¹⁰⁷, Peter Kovacs¹¹², Jaana Lahti¹¹³, Jianjun Liu¹¹⁴, Marjo-Liisa Lokki¹¹⁵, Ana Marusic¹¹⁶, Andreas Maschid⁹⁷, Thomas Meitinger^{117,118}, Antonella Mulas⁹⁷, Guillaume Paré¹¹⁹, Alex N.P. Parker¹²⁰, John F. Peden^{13,121}, Astrid Petersmann¹²², Irene Pichler⁹⁵, Kirsi H. Pietiläinen^{123,124}, Anneli Pouta^{106,125}, Martin Ridderstamle¹²⁶, Jerome I. Rotter¹²⁷, Jennifer G. Sambrook^{128,129}, Alan R. Sanders⁹⁷, Carsten Oliver Schmidt¹³⁰, Juha Sinisalo¹³¹, Jan H. Smit¹³², Heather M. Stringham⁸, G. Bragi Walters²⁰, Elisabeth Widen⁶³, Sarah H. Wild⁹³, Gonnelie Willemssen⁵², Laura Zagato⁹⁴, Lina Zgaga⁵⁶, Paavo Zitting¹³³, Helene Alavere³⁰, Martin Farrall^{13,121,134}, Wendy L. McArdle¹³⁵, Mani Nalls^{30,32,40}, Marjolein J. Peters^{3,4}, Samuli Ripatti^{63,64}, Joyce B. J. van Meus^{2,4}, Katja K. Aben¹³⁶, Kirstin G. Ardlie¹¹, Jacques S. Beckmann^{41,137}, John P. Bellby^{108,109,138}, Richard N. Bergman¹³⁹, Sven Bergmann^{41,42}, Francis S. Collins¹⁴⁰, Daniele Cusi⁸⁵, Martin den Heijer⁴¹, Gudny Eiriksdottir²⁴, Pablo V. Gejman⁹⁷, Alistair S. Hall⁹⁰, Anders Hamsten⁴², Heikki V. Huikuri⁷⁴, Carlos Iribarren^{143,144}, Mika Kahonen¹⁴⁵, Jaakko Kaprio^{61,123,146}, Sekar Kathiresan^{11,141,47,148,149}, Lambertus Kleemans^{150,151}, Thomas Kocher¹⁵², Lenore J. Launer¹⁵³, Terho Lehtimäki¹⁵⁴, Olle Melander¹²⁶, Tom H. Mosley Jr¹⁵⁵, Arthur W. Musk^{109,156}, Markku S. Nieminen¹⁵¹, Christopher J. O'Donnell^{140,157}, Claes Ohlsson⁷⁷, Ben Oostra⁵⁰, Lyle J. Palmer^{70,109}, Olli Raitakari¹⁵⁹, Paul M. Ridker^{46,67}, John D. Rioux⁴⁶, Alla Ritscanen¹²⁴, Carlo Rivolta⁴¹, Herbert Schnitzler¹⁶⁰, Alan R. Shuldiner^{72,161}, David S. Siscovick¹⁶², Michael Stumvoll^{164,165}, Anke Tönjes^{164,166}, Jaakko Tuomilehto^{167,168,169}, Gert-Jan van Ommen¹⁷⁰, Jorma Viikari¹⁷¹, Andrew C. Heath¹⁷², Nicholas G. Martin¹⁷³, Grant W. Montgomery¹⁷⁴, Michael A. Province^{27,175}, Manfred Kayser¹⁷⁶, Alice M. Arnold^{74,177}, Larry D. Atwood²¹, Eric Boerwinkle¹⁷⁸, Stephen J. Chanock⁷, Panos Deloukas¹⁷, Christian Gieger²¹, Henrik Grönberg⁶⁰, Per Hall⁶⁰, Andrew T. Hattersley¹, Christian Hengstenberg^{79,180}, Wolfgang Hoffmann¹⁸⁰, G. Mark Lathrop¹⁸¹, Veikko Salomaa¹⁰⁷, Stefan Schreiber¹⁸², Manjula Uda⁸⁷, Dawn Waterworth¹⁸³, Alan F. Wright⁶¹, Themistocles L. Assimes⁵⁴, Inês Barroso^{17,184}, Albert Hofman²⁴, Karen L. Mohlke¹⁸⁵, Dometi I. Boomsma⁵², Mark J. Caulfield⁴⁴, L. Adrienne Cupples⁸¹, Jeanette Erdmann¹⁸⁰, Caroline S. Fox¹⁸⁶, Vilmundur Gudnason^{24,25}, Ulf Gyllenstein³⁵, Tamara B. Hains¹⁵³, Richard B. Hayes¹⁸⁷, Marjo-Riitta Jarvelin^{69,111,125,188}, Vincent Mooser¹⁸⁰, Patricia B. Munroe⁴⁴, Willem H. Ouwehand^{17,128,129}, Brenda W. Penninx^{120,189,190}, Peter P. Pramstaller^{95,191,192}, Thomas Quertermous⁵⁴, Igor Rudan^{51,116}, Nilesh J. Saman^{84,88}, Timothy D. Spector¹⁸, Henry Völzke¹³⁰, Hugh Watkins on behalf of the Procardis Consortium^{13,121}, James F. Wilson⁹², Leif C. Groop⁹¹, Tallin Hartungians¹²⁷, Frank B. Hu^{22,23,45}, Robert C. Kaplan¹⁹³, Andres Metspalu^{28,29,40}, Kai E. North^{55,194}, David Schlessinger¹⁹⁵, Nicholas J. Wareham³⁰, David J. Hunter^{22,23,45}, Jeffrey R. O'Connell⁷², David P. Strachan¹⁹⁶, H. Erich Wichmann^{3,190,197}, Ingrid B. Borecki^{77,175}, Cornelia M. van Duin^{2,4}, Eric E. Schadt^{198,199}, Unnur Thorsteinsdottir^{20,200}, Leena Peltonen^{17,63,64,201}, André G. Uitterlinden^{2,4}, Peter M. Visscher¹⁹, Nilanjana Chatterjee⁷, Ruth J. F. Loos³², Michael Boehnke⁹, Mark I. McCarthy^{1,2,47,202}, Erik Ingelsson⁶⁰, Cecilia M. Lindgren^{13,47}, Gonzalo R. Abecasis^{2*}, Kari Stefansson^{20,200*}, Timothy M. Frayling^{2*}, Joel N. Hirschhorn^{9,10,203*}

Методологические исследования

AJHG

Volume 89, Issue 5, 11 November 2011, Pages 607–618

Article

Abundant Pleiotropy in Human Complex Diseases and Traits

Shanya Sivakumaran^{1, 6}, Felix Agakov^{1, 2, 6}, Evropi Theodoratou^{1, 6}, James G. Prendergast^{1, 6}, Zgaga^{1, 4}, Teri Manolio⁵, Igor Rudan¹, Paul McKeigue¹, James F. Wilson¹, Harry Campbell¹

IF ~ 12

TECHNICAL REPORTS

nature
genetics

Variance component model to account for sample structure in genome-wide association studies

Hyun Min Kang^{1,2,8}, Jae Hoon Sul^{3,8}, Susan K Service⁴, Noah A Zaitlen⁵, Sit-yea Kong⁴, Nelson B Freimer⁴, Chiara Sabatti⁶ & Eleazar Eskin^{3,7}

IF ~ 36

Временная структура курса

Временная структура курса

Основы генетики и
популяционной генетики

Временная структура курса

Основы эпидемиологии и
исследования ассоциации

Основы генетики и
популяционной генетики

Временная структура курса

Полногеномный анализ
ассоциации

Основы эпидемиологии и
исследования ассоциации

Основы генетики и
популяционной генетики

Временная структура курса

Современные проблемы
статистической геномики

Полногеномный анализ
ассоциации

Основы эпидемиологии и
исследования ассоциации

Основы генетики и
популяционной генетики