Early and lifelong remodelling of our epigenomes by nutrition
Claudine Junien, Genetics and Epigenetics of Metabolic Diseases, Neurosensorial Diseases and Development, Hospital Necker - Enfants Malades, Paris, France
The phenotype of an individual is a result of a complex interaction between genetic epigenome and current, past and ancestral environment leading to a lifelong remodelling of our epigenomes. The genetic information expression contained in the genome is controlled by labile chromatin-associated epigenetic marks. Epigenetic misprogramming during development is widely thought to have a persistent effect on the health of the offspring and may even be transmitted to the next generation. The epigenome serves as an interface between the environment and the genome. Dietary factors - including toxins involved in the one-carbon metabolism - and other social and lifestyle exposures have a profound effect on many aspects of health including age and so do, at least partly, through interactions with the genome which result in altered gene expression with consequences for cell function and health throughout the life course. Depending on the nature and intensity of the environmental insult, the critical spatiotemporal windows and developmental or lifelong processes involved, epigenetic alterations can lead to permanent changes in tissue and organ structure and function, or, to phenotypic changes that can (or cannot) be reversed using appropriate epigenetic tools. Moreover, the flexibility of epigenetic marks may make it possible for environmental, nutritional and hormonal factors, or endocrine disruptors to alter — during a particular spatiotemporal window in a sex-specific manner — the sex-specific methylation or demethylation of specific CpGs and/or histone/ chromatin modifications underlying sex-specific expression of a substantial proportion of genes. Moreover, genetic factors, the environment and stochastic events can change the epigenetic landscape during the lifetime of an individual. Epigenetic alterations leading to gene expression dysregulation accumulate during aging and are important in tumorigenesis and age-related diseases. Given several encouraging trials, prevention and therapy of age- and lifestyle-related diseases by individualized tailoring to optimal epigenetic diets or drugs are conceivable. However these interventions will require intense efforts to unravel the complexity of these epigenetic genetic and enviroment interactions and to evaluate their potential reversibility with minimal side effects.

The GH receptor: Update on mechanism and actions
Michael J. Waters, Institute for Molecular Biosciences, University of Queensland, St Lucia, Queensland, Australia
Until recently, the accepted model for GH-dependent activation of the receptor was hormone-induced dimerization, which brought two JAK2 tyrosine kinase molecules bound to the receptor cytoplasmic domain together, so that they could cross-activate as a tyrosine kinase receptor dimer. A variety of studies now supports the existence of a domain of the receptor which mediates a conditional receptor/receptor realignment as the mechanism of activation. We determined the crystal structure of the extracellular domain in the absence and presence of hormone and compared it to the published structure of the bound form in order to identify the conformational change. The only salient difference was a change in the disposition of a loop in the lower beta-sandwich domain (see below), but mutation of this loop did not influence signaling through JAK2. It appeared that activation must involve subunit realignment, and we were able to show that relative rotation of subunits can activate the receptor, but not the JAK2. Postnatal growth was clearly affected. Commonly, height SDS before puberty was between -2 and -3, and were approximately 1.4 SD lower than the mean. In summary, human ALS deficiency, the first monogenic defect involving an insulin-like growth factor binding protein, represents a unique condition in which the lack of ALS protein results in the disruption of the entire IGF circulating system. Despite a profound glucose levels, hyperinsulinemia and low levels of IGFBP-1, was a common finding. In addition, some patients presented low bone mineral density (BMD). The pathophysiological mechanisms explaining these findings are still only partially understood. In summary, human ALS deficiency, the first monogenic defect involving an insulin-like growth factor binding protein, represents a unique condition in which the lack of ALS protein results in the disruption of the entire IGF circulating system. Despite a profound circulating IGF-I deficiency, there is only a mild impact on postnatal growth. Povet, the preserved expression of locally produced IGF-I under the stimulation of normal or even increased GH levels might be responsible for the preservation of linear growth near or within normal limits.

The consensus conference on insulin resistance in children: definition, measurement, risk assessment, treatment and prevention
Claire Levy-Marchal, Alan R Sinaiko, Silke Arslanian, Wayne Cutfield, Francesco Chiarelli, The Consensus Conference on Insulin Resistance in Children, U965, INSERM, Paris, France; Pediatrics, University of Minnesota, Minneapolis, Minnesota, United States; Department of Pediatrics, University of Pittsburgh, Pittsburgh, Pennsylvania, United States; Department of Paediatrics, University of Auckland, Auckland, New Zealand; Department of Paediatrics, Université de Chieti, Chieti, Italy
Insulin resistance (IR) is a hallmark of type 2 diabetes mellitus and as a strongly associated factor in the pathogenesis of cardiovascular risk. It has also become clear, based on substantial evidence from pediatric studies, that IR is significantly linked to obesity and levels of cardiovascular and metabolic risks factors in infants, children, and adolescents. In addition, there are some unique features for IR in childhood, with relation to puberty, children born small for gestational age, prematurity, some developmental syndromes and treatment with glucocorticoids or growth hormone. Screening for insulin resistance has been used as a tool to identify children with high risk factors, in particular children predisposed to obesity and metabolic syndrome. The discussion will focus on the definition of IR in children, IR and insulin resistance in children. Caregivers would benefit from a better understanding of how it is best assessed, in what clinical disorders it occurs, what are its consequences and whether it can be treated or prevented. To explore these issues, ESP, LWEP, ISPAD, APPES, APEG, SLEP, and JSPS convened a panel of expert persons for a consensus conference on IR in children.
## Officers of the Affiliated Societies

<table>
<thead>
<tr>
<th>SOCIETY</th>
<th>PRESIDENT</th>
<th>SECRETARY</th>
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| **APEG**
www.apeg.org.au | Dr. Andrew Cotterill |
  c/- APEG Secretariat |
  PO Box 180 |
  Morisset NSW 2264 |
  Australia |
  Tel: +61 2 4973 6573 |
  Fax: +61 2 4973 6609 |
  Email: apeg@willorganise.com.au | Dr Craig Jeffries |
  c/- APEG Secretariat |
  PO Box 180 |
  Morisset NSW 2264 |
  Australia |
  Tel: +61 2 4973 6573 |
  Fax: +61 2 4973 6609 |
  Email: apeg@willorganise.com.au |
| **APPES**
www.appes.org | Dr Xiaoping Luo |
  c/- APPES Secretariat |
  PO Box 180 |
  Morisset NSW 2264 |
  Australia |
  Tel: +61 2 4973 6573 |
  Fax: +61 2 4973 6609 |
  Email: appes@willorganise.com.au | Dr Suttipong Wacharasindhu |
  c/- APPES Secretariat |
  PO Box 180 |
  Morisset NSW 2264 |
  Australia |
  Tel: +61 2 4973 6573 |
  Fax: +61 2 4973 6609 |
  Email: appes@willorganise.com.au |
| **ASPAE**
http://aspaе.info/ | Dr. Lucy Nyakio Wainaina Mungai |
  Department of Paediatrics and child Health |
  School of medicine |
  Kenyatta Hospital, University of Nairobi |
  P. O. Box 19676 KNH - Nairobi, Kenya |
  Tel: +254 020 2726300 Ext.43769 |
  Tel: +254 724654135 Fax: 254-2-2725102 |
  Email: kiomungai@yahoo.com | Dr. Iroro Yarhere |
  University of Port Harcourt Teaching Hospital |
  P.O Box 6173 Port Harcourt, Nigeria |
  Tel: +234.7087417677 |
  Email: iroroy91@yahoo.com |
| **BSPED**
www.bsped.org.uk | Dr. Liz Crowne |
  Department of Paediatric Endocrinology |
  Bristol Royal Hospital for Children |
  Upper Maudlin Street |
  Bristol BS2 8BJ, UK |
  Tel: 0044 (0)117 3420165 |
  Fax: 0044 (0)117 3420186 |
  Email: Liz.Crowne@UHBristol.nhs.uk | Dr. Justin Warner |
  Department of Child Health |
  University Hospital of Wales |
  Heath Park |
  Cardiff CF14 4XN, UK |
  Tel: (+44) 29 207 46374 |
  Fax: +44(0)2920745438 |
  Email: justin.warner@cardiffandvale.wales.nhs.uk |
| **CPEG**
http://cpeg-geep.net | Dr. Jean-Pierre Chanoine |
  Endocrinology and Diabetes Unit, K4-212 |
  British Columbia Children's Hospital, University of British Columbia |
  4480 Oak Street |
  Vancouver, BC V6H 3V4 |
  Tel: +1-604-8752624 |
  Fax: +1-604-8753231 |
  email: jchanoine@cw.bc.ca | Wendy Schwarz, RN |
  Clinical Resource Nurse |
  Alberta Children's Hospital |
  Endocrine Clinic |
  2888 Shaganappi Trail NW |
  Calgary AB, T3B 6A8 Canada |
  Tel: +1-403-9557271 |
  email: wendy.schwarz@albertahealthservices.ca |
| **ESPE**
www.eurospe.org | Prof. Jan Lebl |
  Department of Paediatrics |
  Charles University |
  Vinohradska, 159 |
  CZ-10081 Prague, Czech Republic |
  Tel: +420-2-67162561 |
  Fax: +4201-2-72736326 |
  Email: jan.lebl@lfmotol.cuni.cz | Francesco Chiarelli, MD, PhD |
  Department of Paediatrics |
  University of Chieti |
  Via dei Vestini, 5 |
  1-66013 Chieti, Italy |
  Tel: +39-0871-358015 / 574538 |
  Fax: +39-0871-574831 |
  Email: chiarelli@unich.it |
| **ISPAD**
www.ispad.org | Thomas Danne, MD |
  Diabetes Centre for Children and Adolescents |
  Kinderkrankenhaus auf der Bult |
  Janusz-Korc zak-Allee 12 |
  Hannover |
  30173 Germany |
  Tel: +49-511-8115-340 |
  Fax: +49-511-8115-344 |
  Email: danne@hka.de | Ragnar Hanas, MD, PhD |
  Department of Pediatrics |
  Uddevalla Hospital |
  S-451 80 Uddevalla, Sweden |
  Tel: +46-522-92000 |
  Fax: +46-522-93149 |
  Email: ragnar.hanas@vgregion.se |
# Officers of the Affiliated Societies (continued)

<table>
<thead>
<tr>
<th>SOCIETY</th>
<th>PRESIDENT</th>
<th>SECRETARY</th>
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<tbody>
<tr>
<td>ISPAE</td>
<td>Prof Nalini Shah, Head, Dept of Endocrinology, KEM Hospital, Mumbai 400012. E-mail: <a href="mailto:nalinishah@gmail.com">nalinishah@gmail.com</a></td>
<td>Dr. Archana D. Arya, Consultant Pediatric Endocrinologist, Centre for Child Health, Sir Ganga Ram Hospital, New Delhi 110060. E-mail: <a href="mailto:adayal35@hotmail.com">adayal35@hotmail.com</a></td>
</tr>
<tr>
<td>ISPE</td>
<td>Dr. Nehama Zuckerman-Levin, Pediatric Endocrinology, Clalit Health Services, Hadera, Israel Tel: +972-52-4354143 Fax: +972-4-6247222 Email: <a href="mailto:zuckerln@netvision.net.il">zuckerln@netvision.net.il</a></td>
<td>Prof. Joseph Meyerovitch, Institute for Endocrinology and Diabetes, and National Centre for Childhood Diabetes, Schneider Children’s Medical Centre of Israel Tel: +972-50-6263412 Fax: +972-3-9253855 Email: <a href="mailto:josephm@clalit.org.il">josephm@clalit.org.il</a></td>
</tr>
<tr>
<td>JSPE</td>
<td>Prof. Kenji Fujieda, M.D.,Ph.D. Dept of Pediatrics, Asahikawa Medical College, Asahikawa, Japan Tel:+81-166-68-2481 Fax:+81-166-68-2489 Email: <a href="mailto:ken-fuji@asahikawa-med.ac.jp">ken-fuji@asahikawa-med.ac.jp</a></td>
<td>Tsutomu Ogata, M.D.,Ph.D. Dept of Endocrinology and Metabolism, National Research Institute for Child Health and Development Tel: +81-3-5494-7025 Fax: +81-3-5494-7026 Email: <a href="mailto:tomogata@nch.go.jp">tomogata@nch.go.jp</a></td>
</tr>
<tr>
<td>LWPES</td>
<td>Dorothy Becker, MD Children’s Hospital and University of Pittsburgh Department of Pediatrics 3705 5th avenue Pittsburgh, PA 15213-2583 Tel: +1-412-692-5179 Fax: +1-412-692-5834 Email: <a href="mailto:Dorothy.Becker@chp.edu">Dorothy.Becker@chp.edu</a></td>
<td>Alan D. Rogol, MD, PhD Department of Pediatrics, University of Virginia 685 Explorers Road Charlottesville, VA 22911-8441, USA Tel: +1-434-971-6687 Fax: +1-434-971-1147 Email: <a href="mailto:adrogol@comcast.net">adrogol@comcast.net</a></td>
</tr>
<tr>
<td>SEEP</td>
<td>Dr. Juan Pedro López Siguero, Fundación Sociedad Española de Endocrinología Pediátrica C/ Agastia nº 60, 3ra planta. 28043- Madrid, Spain Tel: +34-951292233 Fax: +34-981951185 Email: <a href="mailto:jsiguero@sarenet.es">jsiguero@sarenet.es</a></td>
<td>Dra. Lidia Castro Feijóo, Fundación Sociedad Española de Endocrinología Pediátrica C’Agasitia nº 60, 3ra planta 28043 – Madrid, Spain Tel: +34-981951107 Fax: +34-981951185 Email: <a href="mailto:lidia.castro.feijoo@usc.es">lidia.castro.feijoo@usc.es</a></td>
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<tr>
<td>SLEP</td>
<td>Dr. Gil Guerra-Junior, Department of Pediatrics Faculty of Medical Sciences University of Campinas - Unicamp Campinas - SP PO Box 6111 Zip Code 13083-100, Brazil Tel: +55-19-35218923 Fax: +55-19-35218925 Email: <a href="mailto:gilguer@fcm.unicamp.br">gilguer@fcm.unicamp.br</a> Email: <a href="mailto:gileandrea@uol.com.br">gileandrea@uol.com.br</a></td>
<td>Dr. Alicia Belgorosky, Hospital de Pediatría Garrahan Endocrinology Service Combate de los Pozos 1881 C1245AAM Buenos Aires, Argentina Tel: +54 11 4308 0034 Fax: +54 11 4308 5325 Email: <a href="mailto:abelgo@elsito.net">abelgo@elsito.net</a></td>
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We are always in search of items of interest to the international community for inclusion in this newsletter and on the COPES website (www.COPESInternational.org). Contact the Coordinator or Vice Coordinator with your suggestions.
### Upcoming Events
*Dates and locations in **bold** are annual meetings of the affiliated societies.*

#### 2010

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<thead>
<tr>
<th>Date Range</th>
<th>Event Description</th>
<th>Contact Information</th>
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<tbody>
<tr>
<td>MARCH 4 - 6</td>
<td><strong>Canadian Pediatric Endocrine Group: 2010 Scientific Meeting</strong></td>
<td><a href="http://www.interprofessional.ubc.ca/Canadian_Pediatric.htm">www.interprofessional.ubc.ca/Canadian_Pediatric.htm</a></td>
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<tr>
<td>Calgary, Canada</td>
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<tr>
<td>MARCH 26 - 30</td>
<td>The 14th International Congress of Endocrinology (ICE2010)</td>
<td>E-mail: <a href="mailto:nakao@kuhp.kyoto-u.ac.jp">nakao@kuhp.kyoto-u.ac.jp</a> or <a href="mailto:ken-fuji@asahikawa-med.ac.jp">ken-fuji@asahikawa-med.ac.jp</a></td>
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<tr>
<td>Kyoto, Japan</td>
<td>Contact: Prof. Kazuwa Nakao or Kenji Fujieda (Pediatric Filed)</td>
<td><a href="http://www.congre.co.jp/ice2010/">http://www.congre.co.jp/ice2010/</a></td>
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<tr>
<td>MARCH 31 - APRIL 1</td>
<td>International Symposium on Pediatric Endocrinology (Official Satellite Symposium of</td>
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<tr>
<td>Tokyo, Japan</td>
<td>the ICE2010)</td>
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<td></td>
<td>Contact: Prof. Kenji Fujieda or Dr. Tsutomu Ogata</td>
<td>E-mail: <a href="mailto:ken-fuji@asahikawa-med.ac.jp">ken-fuji@asahikawa-med.ac.jp</a> or <a href="mailto:tomogata@nch.go.jp">tomogata@nch.go.jp</a></td>
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<tr>
<td>MAY 31 - JUNE 2</td>
<td><strong>1st ASPAE SCIENTIFIC MEETING</strong></td>
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<td>Nairobi, Kenya</td>
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<tr>
<td>AUGUST 2 - 4</td>
<td><strong>Australasian Paediatric Endocrine Group: 2010 Scientific Meeting</strong></td>
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<td>Adelaide, South Australia</td>
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<td>SEPTEMBER 22 - 25</td>
<td><strong>49th ESPE Meeting</strong></td>
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<td>Prague, Czech Republic</td>
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<td>OCTOBER 7 - 9</td>
<td><strong>44th JSPE Meeting</strong></td>
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<td>Osaka, Japan</td>
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<td>OCTOBER 27 - 30</td>
<td><strong>36th Annual Meeting of ISPAD</strong></td>
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<td>Buenos Aires, Argentina</td>
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<td>OCTOBER 27 - 30</td>
<td><strong>XXI Annual Meeting of SLEP</strong></td>
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<td>Costa do Sauipe (Bahia), Brazil</td>
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<td>NOVEMBER 3 - 5</td>
<td><strong>38th Meeting of the British Society for Paediatric Endocrinology and Diabetes</strong></td>
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<td>Manchester, UK</td>
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<tr>
<td>November 17 - 20</td>
<td><strong>APPES Biennial Scientific Meeting</strong></td>
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<td>Xian, China</td>
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#### 2011

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<tr>
<td>SEPTEMBER 25 - 28</td>
<td><strong>50th ESPE Meeting</strong></td>
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<tr>
<td>Glasgow, Scotland</td>
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<tr>
<td>OCTOBER 19 - 22</td>
<td><strong>37th Annual Meeting of ISPAD</strong></td>
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<td>Miami, USA</td>
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#### 2012

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<tr>
<td>SEPTEMBER 20 - 23</td>
<td><strong>51st ESPE Meeting</strong></td>
<td></td>
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<tr>
<td>Leipzig, Germany</td>
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For more international events, visit www.endo-society.org/apps/Events.
A short description/presentation of the Canadian Pediatric Endocrine Group (CPEG) and the African Society for Paediatric and Adolescent Endocrinology (ASPAE), the younger COPES’ affiliated Societies.

CPEG-GCEP (Canadian Pediatric Endocrine Group - Groupe canadien d'endocrinologie pédiatrique) is the official Canadian association for pediatric endocrinology. It started more than 20 years ago as a group of clinician-researchers participating in a pan-Canadian clinical study. It officially became an independent body in 2005. Membership mostly includes Canadian pediatric endocrinologists and pediatric endocrine nurses as well as fellows enrolled in pediatric endocrinology training programs. CPEG-GCEP meets once a year for a high level two-day scientific meeting that rotates through all pediatric endocrinology centres in Canada and covers all aspects of pediatric endocrinology and diabetes. Thanks to industry support, CPEG-GCEP offers research fellowships for Canadian trainees. Representatives of CPEG-GCEP sit on defined committees of the Lawson-Wilkins Pediatric Endocrine Society.

The African Society for Paediatric and Adolescent Endocrinology (ASPAE) is an international organisation with several members from African countries whose aim is to promote the highest levels of knowledge, research, education and clinical practice of paediatric endocrinology and metabolism throughout the Africa.

Founded in July 2009, when the first Fellows graduated at the pan African school for Paediatric Endocrinology in Nairobi under the Presidency Dr Lucy Mungai and mentorship of some members of European Society of Paediatric and Adolescent Endocrinology (ESPE), the Society aims to increase in both size and scope, becoming one of the largest and most leading international scientific communities of paediatric endocrinology.

The Society is dedicated to serve its members, the African children and the African scientific community. It is also aims at being involved in promoting the interests of the general public and in advising on African health policy in the area of paediatric endocrinology. ASPAE is committed to welcoming and establishing close relationships with other Scientific Societies in the world.

A warm welcome (accueil chaleureux) to our Canadian and African Colleagues.

Welcome to my fellow Africans and Canadians is my best way to finish my two years as COPES’ coordinator.

I thank you all for your support, especially the Presidents and Secretaries of affiliated Societies, with special thanks to Ragnar Hanas, Suttipong Wacharasindhu (next Coordinator), and Francesco Chiarelli for their constant and effective cooperation.

Luciano Cavallo

The pediatric endocrinology list serve is a lively international forum for discussing a wide range of interesting topics. To subscribe, send an email message to peds-endo-subscribe@yahoogroups.com or go to health.groups.yahoo.com/group/peds-endo for more information.

COPES is a non-profit organization supported by academic and industrial sponsorships from international companies and organizations. The Coordination Office sends newsletters free of charge to all members of the societies through their secretaries and maintains the website, www.COPESinternational.org.

The COPES newsletter publishes information on the meetings of the affiliated societies and other meetings of interest. Reports on activities of the Affiliated Societies and information on meetings, workshops, courses, fellowships, and exchange programs, as well as selected letters and brief summaries or reviews pertaining to newsworthy items are published in the Newsletter and on the website. All contributions are welcome, so please mail or fax your correspondence to the Coordinator or Vice-Coordinator.

The COPES Newsletter welcomes advertisements and sponsorship from international companies and organizations. Please contact the Coordinator for rate details.