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A Bibliography of Staff Publications
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Institutes and Research Centres



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Advanced Training and Research In Fertility Management

1677. **DaCosta, Vernon E., Shaun H. Wynter, Joseph Frederick, Hugh H. Wynter, and Horace M. Fletcher.** “Cervical Pregnancy: Case Report and Literature Review.” West Indian Medical Journal 51.4 (2002): 257-59. **Refereed**

Cervical pregnancy is an uncommon life threatening form of ectopic pregnancy that is associated with the unexpected occurrence of uncontrollable hemorrhage from the cervix. To avoid hysterectomy and to maintain fertility, several conservative methods of termination have been used. The authors present one such case which relates to a young woman who had successful conservative management of a cervical pregnancy using vasopressin infiltration of the cervix, a McDonald cerclage and cervical curettage followed by balloon tamponade. Subsequently, she became pregnant again with a normal intra-uterine pregnancy and had a successful vaginal delivery.

1678. **DaCosta, Vernon E., Shaun H. Wynter, Joseph Frederick, Hugh H. Wynter, and M. Williams.** “Successful Pregnancy After Hysteroscopic Metroplasty.” West Indian Medical Journal 51.4 (December, 2002): 260-62. **Refereed**

Congenital anomalies of the uterus have been estimated to affect 0.06-10% of women. Uterine septae account for approximately 80% to 90% of these anomalies and is also associated with the poorest reproductive outcome. Pregnancy loss in patients with a septate uterus has been reported to be as high as 90% after other causes for miscarriages have been excluded. We present here the first experience in Jamaica, of a successful pregnancy outcome after hysteroscopic metroplasty in a woman with a septate uterus and three previous miscarriages.

DaCosta, Vernon See also 824, 836, 1677, 1678, 1679, 1681, 1689

1679. **Frederick, Joseph, Vernon E. DaCosta , Shaun H. Wynter, Marvin E. Reid, C. Frederick, and Colin A. McKenzie.** “Effect of the Oral Contraceptive Pill on Patients Undergoing Controlled Ovarian Hyperstimulation. “ West Indian Medical Journal 53.1 (2004): 39-43. **Refereed**

This is a retrospective analysis of 89 patients who were undergoing controlled ovarian hyperstimulation for in vitro fertilization and embryo transfer in the Fertility Management Unit of the Department of Obstetrics, Gynaecology and Child Health, The University of the West Indies. Twenty-eight patients (Group A), who did not receive oral contraceptive pills prior to controlled ovarian hyperstimulation (COH) were compared with 61 patients in Group B treated with oral contraceptive pills for two months prior to undergoing COH assisted reproduction using the long protocol. The number of follicles, oocytes, estimated oestradiol levels on the day of administration of human chorionic gonadotrophin (hCG), pregnancy rates, miscarriage rates and the incidence of patients who developed ovarian hyperstimulation syndrome (OHSS) were the main outcome measures. The mean age and haematocrit were the same in each group. The number of follicles retrieved tended to be higher in Group A than in Group B (median 8 versus 6, $p = 0.06$) with significantly more oocytes being retrieved in Group A than Group B ($p < 0.05$). There were no statistically significant differences between the two groups in oestradiol levels, the proportion of patients with polycystic ovarian disease, the proportion of women who developed ovarian hyper-stimulation syndrome or pregnancy outcomes. There was no difference between the groups in measures of clinical severity of OHSS. In a logistic regression model the significant predictors of OHSS were haematocrit and oestradiol levels. There appeared to be no significant clinical benefit in administering oral contraceptive pills for two months to patients prior to COH.



1681. **Frederick, Joseph, Vernon E. DaCosta , Shaun H. Wynter, I. Tennant, Colin A. McKenzie, and Y. McDonald.** “Endometriosis Co-Existing With Bilateral Dermoid Cysts of the Ovaries Treated by Laparoscopy.” West Indian Medical Journal 52.2 (2003): 179-81. **Refereed**
Endometriosis co-existing with bilateral dermoid cysts of the ovaries is a rare occurrence although both benign conditions are said to be common in women in the reproductive age group. The authors present a case of a young woman with primary infertility associated with incapacitating dysmenorrhoea. Sonographic evaluation revealed bilateral ovarian cysts. Video-assisted laparoscopy was performed which revealed bilateral dermoid cysts and endometriotic deposits in the pelvis. The ovarian cysts were enucleated and the endometriotic deposits were endo-coagulated. The patient was treated with GnRH agonist for three months. There have been only two reports of benign and malignant teratomas co-existing with endometriomas.

Frederick, Joseph See also 776, 824, 856, 882, 891

1682. **Hamilton, Pansy.** “How Can Donor Resources Be Used More Effectively to Meet National Health Needs?” Thirteenth Commonwealth Health Ministers Meeting: (Christchurch, New Zealand: November 25-29, 2001).

The author explores the role, benefit and factors relating to the effective and efficient use of donor resources in the Jamaican health care system. Emphasis is also placed on the absence of explicit donor policies and plans by the Ministry of Health, Jamaica. She concludes with recommendations for improvement in this area.

1683. **Hamilton, Pansy, Jean Jackson, Amy Lee, and Joan Leitch.** Evaluation of the Breastfeeding Programme and the Baby Friendly Hospital Initiative. 2002.

(Final Report)

This report evaluates the strength, weaknesses and results of the Baby Friendly Hospital Initiative and Lactation Management Programme launched by the Ministry of Health, Jamaica. Quantitative data were collected from antenatal and postnatal clinics and health care providers in three hospitals (Victoria Jubilee, Spanish Town and Chapleton) as well as eleven health centres in the parishes of Kingston, St. Andrew, St. Catherine, Clarendon and Trelawny. The main findings, as well as the researchers’ observations and recommendations are presented.

1684. ——. Follow Up to the Baseline Study: Operations Research to Improve the Reproductive Health of Adolescents in Northern St. Elizabeth. 2004.

In 2001, a baseline survey was conducted prior to the introduction of reproductive health interventions in selected high schools in Maggotty and Balaclava, St. Elizabeth. The interventions were targeted to adolescents 10-19 years old. The researchers collected and analyzed data on adolescents with respect to their demographic and household profile, general health and well-being, social assessment of their reproductive health, attitudes, behaviours and risk factors and an assessment of their reproductive health knowledge, use of family planning methods and need for clinic services. This follow-up examined the changes in attitude and behaviour among the target cohort using a control group (Lacovia High School). The researchers assessed the impact of the intervention by analyzing the differences between the reproductive health profiles of adolescents in the experimental sites (Maggotty and Balaclava) and the control site (Lacovia).

1685. ——. Operations Research to Improve the Reproductive Health of Adolescents in Northern St. Elizabeth: Report of Baseline Survey. 2002.

A baseline survey was conducted in selected high schools in Maggotty and Balaclava, St. Elizabeth to answer the question: *Does linking school-based peer education and support through guidance counseling with youth-friendly clinic services improve the reproductive health outcomes for students in Jamaica?* The interventions were targeted to adolescents 10-19 years old. The researchers collected and analyzed data on adolescents with respect to their demographic and household profile, general health and well-being, social assessment of their reproductive health,



attitudes, behaviours and risk factors and an assessment of their reproductive health knowledge, use of family planning methods and need for clinic services.

Hamilton, Pansy See also 1687

1686. **Jackson, Elaine, and Norma Allen.** UNFPA/ASRH/VIP Youth Peer Educators' Manual. Kingston, Jamaica: Pear Tree Press Limited, 2004.

(Cover reads: Adolescent Sexual and Reproductive Health (ASRH) Youth Manual: UNFPA/ASRH/VIP Youth Peer Educators' Training Manual)

This manual shares information on the United Nations Family Planning Agency's training of a group of peer educators in Jamaica between March and April 2001 under the ASRH/VIP project. It describes the institutional structures and main elements that support training. It also provides a step-by-step outline of training sessions and illustrates the role of the trainers in helping peer educators.

Jackson, Elaine See also 1690

Jackson, Jean See 1094, 1683, 1684, 1685, 1687

Lee, Amy See 1094, 1683, 1684, 1685

Leitch, Joan See 1683, 1684, 1685

1687. **McIntyre, Susan, Julie Solo, Pansy Hamilton, and Jean Jackson.** Case Study of the Contraceptive Research Program in Jamaica: What Was Achieved and How? 2004.

Introduction: Research provides important evidence to inform and improve reproductive health programs and policies. But how much is such information used, and what are the key factors that facilitate or hinder the process of turning research into practice? In order to address these questions, Family Health International (FHI) undertook a case study of its work in Jamaica. Over the past three decades, FHI's activities funded by the Contraceptive Technology Research (CTR) Cooperative Agreement have responded to the evolving reproductive health needs of women in developing countries. The third CTR Agreement, which began in 1995, sought "to develop, evaluate and introduce a range of acceptable methods of family planning and to enhance the capacity of family planning researchers and programs in developing countries to provide those methods." Under this agreement, 22 separate project activities have been or are being conducted in Jamaica. **Methodology:** Data collection took place between May and June 2004 and included interviews with FHI staff in North Carolina and with key collaborators and stakeholders in Jamaica. A total of 32 individuals were interviewed. The four-person team also reviewed relevant project documents and materials on reproductive health in Jamaica. **Results:** Although the CTR projects in Jamaica were never based on a strategic, coordinated country plan, there was a high degree of continuity and connection among the different projects.

1688. **Meade, Joan A.** "Beyond the Conventional Unmet Need for Family Planning." The Jamaican Nurse 40.2 and 3 (2002): 15-22.

(Proceedings of the Fourteenth Annual Nursing/Midwifery Research Conference and Mary Seivwright Day. Department of Advanced Nursing Education. Faculty of Medical Sciences. University of the West Indies, Mona. May 14-16, 2002.)

The author explores unmet need as a tool for family planning programmes and population policy. She aims to broaden the concept of unmet need for family planning by redefining it in terms of the parameter of reproductive choice by defining the proposed indicators of individual reproductive choice and examining Jamaican data to derive relevant illustrations. The article concludes that individual reproductive choice appears to be a feasible alternative to conventional approaches to the measurement of unmet need for family planning, but further exploration, especially relating to abortions, is needed



1689. **Phillip, H., Vernon E. DaCosta, Horace M. Fletcher, Santosh K. Kulkarni, and Marvin E. Reid.** “Correlation Between Transvaginal Ultrasound Measured Endometrial Thickness and Histopathological Findings in Afro-Caribbean Jamaican Women With Postmenopausal Bleeding .” *Journal of Obstetrics and Gynaecology* 24.5 (2005): 568-72 .

Postmenopausal bleeding is traditionally investigated with invasive procedures. Recent studies in white populations have suggested that these procedures can be avoided, as ultrasonographic endometrial thickness of <5 mm is not associated with malignancy. We performed a prospective study in 75 Jamaican Afro-Caribbean women with postmenopausal bleeding to determine whether an endometrial thickness of <5 mm excluded endometrial cancer. We also examined the aetiology of postmenopausal bleeding and looked for possible risk factors. Double-layer transvaginal ultrasonographic measurement of the endometrial thickness was followed by hysteroscopy, suction curettage and histopathological confirmation. Correlation between imaging and pathology was not reliable. Half the patients with endometrial cancer had an endometrial thickness of between 3 mm and 4 mm. Seventy per cent of the women with endometrial thickness of greater than 5 mm had benign pathology. Additionally, the following characteristics were found to be more strongly associated with women with endometrial cancer: age over 65 years and 5 or more years since menopause. However parity <2 appeared not to have a significant effect.

1690. **Williams, Lillith, and Elaine Jackson.** *UNFPA/ASRH/VIP YOUTH: Training Curriculum*. Jamaica : United National Population Fund (UNFPA), 2004.

<http://caribbean.unfpa.org/docs/peer%20manual.pdf>.

(Cover reads: Adolescent Sexual and Reproductive Health (ASRH) Training Curriculum: Peer Education in Jamaica: UNFPA/ASRH/VIP Youth Peer Educators' Training Manual)

This document captures the main features of the training programme for peer educators under the VIP Youth Project. It covers broad themes of reproductive health and provides a basic tool that may be used for Adolescent Sexual and Reproductive Health training among different target groups. It consists of a framework upon which much can be built, for use among service providers, trainers and other groups working with adolescents and youth.

Agriculture Unit

1691. **Hutton, Dave G., and F. L. Edman.** “Cause of Anthurium (*Anthurium Andraeanum*) Root Rot and Decline in Jamaica.” *Tropical Agriculture* 79.3 (2002): 161-67.

This trial investigated whether *Pythium splendens* or *Radopholus similis* was the primary causal agent of a root rot and decline observed in *Anthurium andraeanum* plantings in Jamaica. Affected plants were stunted, off-colour and unthrifty, and the roots rotted often to the extreme. Leaves turned yellow then dry, suckering was inadequate, and bloom production was reduced both in quantity and quality. Most plants eventually died, leaving beds weedy and dilapidated. Plots were fumigated with Vorlex (600 mL 10 m-2 PPF), or suckers were dipped in 1500 parts per million (ppm) oxamyl (nematicide dip), or 3800 ppm prothiocarb (fungicide drench) solutions, before planting. Plots were treated with either phenamiphos (granular (G)) (20 kg active ingredient (ai) ha-1) (PAP), ethoprop (G) (11.2 kg ai ha-1) (EAP), diazinon (emulsifiable concentrate) (37 L ai ha-1) (DAP), or drenched with 2700 ppm prothiocarb or 1000 ppm metalaxyl solutions (FAP) every four months for the first year, then every six months thereafter. The 12 treatments were PPF; PPF-ND; PPF-PAP; PPF-EAP; PPF-ND-PAP; PPF-ND-EAP; PPF-ND-DAP; PAP; EAP; PPF-FD-FAP; FAP; and control. Phenamiphos- or ethoprop-treated plants showed low levels of root rot, and produced three and four times greater root mass, respectively. These plants were three and four times, respectively, as large as the control plants, and those in the other treated plots, roots of which showed high levels of rotting. Furthermore, the ethoprop-treated plants bore 50% more suckers and bloom, and the phenamiphos-treated plants twice as many suckers and blooms compared with plants receiving the other treatments. After 42 months, ethoprop- or phenamiphos-treated plots were still thriving and productive, while plants in the control and otherwise-treated plots were in a state of advanced decline. Diazinon was not effective as a nematicide. This trial confirmed the nematode to be the primary causal agent of anthurium root rot and decline in Jamaica.

Hutton, Dave G. See also 1159



Biotechnology Centre

Ahmad, Mohammed H. See 561, 603, 615, 616, 617, 622, 623, 624, 630, 631, 632, 633, 1158, 1200, 1201, 1692, 1693, 1694, 1695, 1696

1692. **Mitchell, Sylvia A., and Mohammed H. Ahmad.** “Establishment of Ex Situ and in Vitro Germplasm Collections of Important Trees and Medicinal Plants of Jamaica.” Jamaican Journal of Science and Technology 14 (2003): 9-16.

Much of the wealth of a country resides in its plant heritage. These plants can be used to produce food, flowers, spices, cosmetics, medicinals and/or nutraceuticals, and need to be conserved. This paper outlines research involved with establishing ex situ and in vitro germplasm collections of trees and medicinal plants important to Jamaica. An ex situ herbal garden was established with plants obtained from the wild; 53 were established and are being used as a source of ex-plants to establish the in vitro gene bank. Fourteen medicinal plants and live trees were initiated: Vervine (*Stachytarpheta jamaicensis*), Garlic (*Allium sativum*), Fever grass (*Andropogon citratus*), Peppermint (*Satureja viminea*), Black mint (*Mentha viridis*), Colic mint (*Lippia alba*), Bur-in-the-bag (*Priva lappupacea*), John Charles (*Hyptis verticillata*), Quako (*Mikania micrantha*), Leaf-of-life (*Bryophyllum pinnatum*), Jack-in-the-bush (*Eupatorium odoratum*), Guava (*Psidium guajava*), Jointer (*Piper spp.*), Spanish Needle (*Bidens cyanpiifolia*), Neem (*Azadirachta indica*), Honduras Mahogany (*Swietenia macrophylla*), Jamaican Mahogany (*Swietenia mahogoni*), Spanish Cedar (*Cedrela odorata*) and Noni (*Moringa citrifolia*). Initiation and multiplication media were found for eleven of the medicinals and the five trees. Rooting media were found for seven of the medicinal plants.

1693. ——. “An Improved Micropropagation System of Yam (*Dioscorea* Spp.) for the Commercial Production of Elite Planting Material .” Jamaican Journal of Science and Technology 14 (2003): 17-39.

Seven species of yam (genus *Dioscorea*) are extensively cultivated. Expansion is hindered by low multiplication rates, diseased planting material, inefficient cultural practices and post-harvest losses. A rapid micropropagation system for *D. trifida* cv SNY and *D. cayenensis* cv RLYY was developed to alleviate these hindrances, with results that are applicable to other yam species. Initiation was reliably obtained using nodal explants from young vines cut from minisetts, leafy cuttings or small tubers. Shoot growth increased and medium browning decreased when PPO inhibitors were added to the media. Shoot production was highest on BM and 0.5 mg L⁻¹ BAP adjusted to pH6 for SNY and pH4 for RLYY. Rooting was highest on BM with IBA. A simple cost-effective hardening method was devised. Slow-growing juvenile-like (type I) and faster-growing adult-like (type II) growth were identified in vitro and ex vitro. Type II shoot production increased as the in vitro multiplication rate increased; a decrease in the type I growth phase ex vitro resulted in increased tuber production. Tubers (R₀) were harvested from RLYY plantlets after 9 months (1.9 = 100 g/plant) and SNY plantlets after 7 months (4.4 = 40g/plant). Leafy cuttings of RLYY yielded 1.3 R₀ tubers (74g/plant). R₁ tubers averaged one (1422 g) per RLYY plant or 13.0 tubers (521 g) per SNY plant. Sprouting of RLYY minisetts cut from R₁ tubers was high (95% after 5 weeks). The COP of this improved micropropagation method is lower than for the miniset system. The significance of these results to yam production in Jamaica is discussed.

1694. ——. “The Wonders of the Neem Tree.” Health, Home and Garden Magazine (2002): 78-80.

1695. **Mitchell, Sylvia A., M. Millar, and Mohammed H. Ahmad.** “Neem (*Azadirachta Indica*) Research at the Biotechnology Center: Testing of Neem Formulations, Azadirachtin Levels in Neem Oil and Micropropagation of Neem Plantlets.” Jamaican Journal of Science and Technology 14 (2003): 79-89. **Refereed**



Neem (*Azadirachta indica*) trees are scattered throughout Jamaica but we scarcely know the potential of this tree. Neem trees are native to the Indian sub-continent and are highly esteemed in India. For centuries, its derivatives have found use in agriculture, public health, medicine, toiletries, cosmetics, and livestock production and health. Over 300 insect species and a large number of plant pathogens have been controlled by various neem products. Every part of the neem tree is bio-active and is already being used to make commercial products. The most important derivative from the Neem tree is its seed oil. Neem oil contains many active compounds including azadiractin, salannin, gedunin, melianthrol, deacetylsalannin and azadiradion. The neem tree is the subject of active research at the Biotechnology Centre. This research includes the development and field testing of bio-active products, determining the levels of active ingredients, and neem micropropagation. The results indicate that there is tremendous potential for the development of a neem industry in Jamaica. Neem formulations tested decreased bacterial and fungal levels. The quantification of the active ingredient azadirachtin in neem, means these formulations can be standardized. Micropropagation means these plants can be produced throughout the year and in large quantities. The implication of these results is discussed.

1696. **Rose, A. M., P. S. Raju, and Mohammed H. Ahmad.** “The Effect of Varying Auxin and Cytokinin Levels on in Vitro Rooting of Yam, *Dioscorea Cayenensis*.” [Abstract]. Proceedings of the Second Conference of the Faculty of Natural Sciences University of the West Indies, Mona: (University of the West Indies, Mona, Kingston, Jamaica: March 7-9, 1995) Editors Ralph D. Robinson and Han Reichgelt. Kingston, Jamaica: Faculty of Natural Sciences, University of the West Indies, Mona.

1697. **Roye, Marcia E., Wayne A. McLaughlin , Medhat K. Nakhla, and Douglas P. Maxwell.** “Genetic Diversity and Relationships Among Geminiviruses From Jamaica and Barbados.” [Abstract]. Fourth Conference of The Faculty of Pure and Applied Sciences. University of the West Indies, Mona.: (University of the West Indies, Mona. Kingston, Jamaica: January 12-14, 1999) Kingston, Jamaica: Faculty of Natural Sciences, University of the West Indies, Mona.

Roye, Marcia See also 626

Centre for Gender and Development Studies

1698. **Bailey, Barbara.** “Caribbean Experience in the International Women’s Movement: Issues, Process, Constraints and Possibilities.” Gender in the 21st Century: Caribbean Perspectives, Visions and Possibilities. Editors Barbara Bailey and Elsa A. Leo-Rhynie. Kingston, Jamaica: Ian Randle Publishers, 2004

The author analyses the Caribbean’s involvement in the international women’s movement with particular reference to the 1995 United Nations Fourth World Conference on Women (FWCW) in Beijing, China and the post-Beijing period leading up to the United Nations General Assembly Special Session (UNGASS) on women held in June 2000 in New York (popularly referred to as Beijing +5). The analysis focuses on four concerns: the process of engagement of the Caribbean at the sub-regional, regional and international levels; the evolution of issues critical to Caribbean women between the Beijing 1995 conference and the Beijing +5. It also explores some of the strengths and weaknesses of the Caribbean women’s movement in light of the ten-year review of the Beijing Conference in 2005.



1699. —. “Gender and Education in Jamaica: Who Is Achieving and by Whose Standard?” Prospects: Quarterly Review of Comparative Education 34.1 (2004): 53-69 .

1700. —. Gender-Sensitive Educational Policy and Practice: The Case of Jamaica . 2003.
http://portal.unesco.org/education/en/file_download.php/40b786d97f26680ff427422f001da672Gender+sensitive+educational+policy+and+practice.+The+case+of+Jamaica..doc.

(Prepared for the Education for All - Global Monitoring Report International Bureau of Education-United Nations Educational, Scientific and Cultural Organisation (UNESCO) Geneva, Switzerland)

This report explores sex stratification in the Jamaican education system and the overall impact of gender on the educational process. The author gives an overview of the policies governing the education system in Jamaica and makes references to male underachievement and gender stereotypes as it relates to textbooks used and curricula.

1701. —. “Gendered Realities: Fact or Fiction?: The Realities in a Secondary Level Co-Educational Classroom .” Gendered Realities : Essays in Caribbean Feminist Thought. Editor Patricia Mohammed. Kingston, Jamaica: University of the West Indies Press, 2002. 164-82.

Examines delineation based on sex differences in curriculum participation, and the sexual politics of the interactions between teachers and students, on the basis of a study in a coeducational, mixed classroom at the secondary level of the Jamaican education system. The author indicates that several scholars suggest that schooling is a mechanism for reproducing sexual inequalities, and that gender provides a pervasive basis for differentiation throughout school life. She discusses different perspectives, including feminist ones, on educational inequalities and notes sex-differentiated patterns of participation and subject choice, such as physics was male-dominated, and English literature female-dominated. Regarding classroom interactions, she found gender differences within the teachers’ power system, as female teachers attempted to use the discussion approach, while male teachers used the traditional authoritarian mode. Further, it is noted that unequal division of attention is given by teachers, in favour of boys. In the traditionally male-dominated areas of physics and mathematics there was a typical male/female hierarchy with frequent open acts of harassment toward girls. Thus, the author notes a gender regime, but also states that the manifestations of masculinity and femininity depended on the specific context or moments, such as the subject, sex of the teacher, and other factors.

1702. —. “HIV/AIDS: A Multi-Faceted Problem Caribbean Strategic Plan of Action: Strategies for Preventing and Controlling the Epidemic .” UWI HARP’s Third Scientific and Business Conference : (Sherbourne Conference Centre. Barbados : May 5-8, 2005).

http://www.uwiharconference.org/presentations/AbstractRoo_111799804027 .

Objective: Presents preliminary findings of a qualitative study on Gender and Sexuality: Behaviours, Attitudes and Taboos Among UWI Students on the St. Augustine Campus. The purpose was to understand the interplay of gender, sexuality and race among students between the ages of 18-25 on the St. Augustine campus of The University of the West Indies and the implications for HIV prevention. **Design and Methods:** The qualitative study involved focus groups with 29 UWI students aged 18-25 years. From April to June 2004, there were four focus groups conducted, organized by race and gender. An interview protocol was developed on the following domains of interest: Gender expectations within sexual relationships; Belief systems and sexuality; Sexual practices, behaviours and taboos; Youth sexualities; Fertility; Sexual economic exchange; Violence, power and control; Substance use and abuse; Same sex and alternative sexualities. **Results:** The results were generated from student’s views on each domain of interest. These ranged from expressions of traditional views of gender and sexuality as well as denial about the existence of HIV/AIDS on the campus. Also the male students were more open to discuss the issues of sexuality than the female students. **Conclusions:** It is clear that approaches need to be aligned with students’ experiences. Current methods used for HIV prevention are not effective in altering students’ behaviours and attitudes as well as perspectives towards taboos.

1703. —. “Jamaica.” The Greenwood Encyclopedia of Women’s Issues World Wide: North America and the Caribbean. Editor Lynn Walter, Manisha Desai, Cheryl Toronto Kalny, Amy Lind, Bahira Sherif-Trask, and Aili Mari Tripp. London: Greenwood Press, 2003



1704. **Bailey, Barbara, and Michelle Davis.** “Jamaica.” Teen Life in Latin America and the Caribbean. Westport, Connecticut: Greenwood Press, 2004. 213-37.

Discusses aspects of the life of teenagers, from middle school to early college age, in Jamaica, and recent changes in this life. After an introduction on country and history, the authors describe the typical day of Jamaican teenagers and the place of education, meals, and household chores, while pointing at socioeconomic differences. They further discuss family forms, and how emigration of parents can increase school drop out. Further problems discussed include teenage pregnancy, HIV/AIDS, and the growing problems of child labour and child prostitution. They emphasize that criminality, often related to drug trafficking, among teenagers is a growing problem in Jamaica, especially in inner cities, and relates to school drop out. In addition, the authors focus on teenagers’ common pastimes, on food dishes, schooling, and the teenagers’ social life, recreation, entertainment, and religious and cultural activities, which differ according to socioeconomic class. They note a general US influence on popular culture, but also a strong cultural, local “dancehall” and folk culture influence among teenagers.

1705. **Bailey, Barbara, and Elsa A. Leo-Rhynie.** “Engendering Governance: Strategies for Promoting Gender Equality.” Governance in the Age of Globalisation: Caribbean Perspectives. Editors Denis Benn and Kenneth O. Hall. Kingston, Jamaica: Ian Randle, 2003. 195-210.

In their analysis of strategies for promoting gender equality in the governance process, the authors identify the factors which explain low levels of participation by women in the decision-making process and propose mechanisms for bringing about gender parity. They point to the significant differences between the ‘male world’ characterized by power, competition and manipulation, and the ‘female world’ which is seen as kinder, more rational and more constructive. They conclude that in order to put an end to the disadvantages suffered by women, it will be necessary to effect a fundamental transformation of the social structure of Caribbean societies by targeting strongly entrenched values, attitudes and behaviour embodied in the existing patriarchal system of male dominance.

1706. —, Editors. Gender in the 21st Century: Caribbean Perspectives, Visions and Possibilities. Kingston, Jamaica: Ian Randle, 2004.

Commemorates the pioneering work of feminists, scholars and activists by reflecting on some of the major issues which have engaged them and influenced their scholarship and work since the early 1980s. Addresses issues at the cutting edge of Gender and Development studies, adopting a strong policy focus for treating current social and gender inequity. Looks to the future and speculates on the place of gender in the academy, as well as its outreach, and provides a unique opportunity to explore, with highly respected and renowned scholars, aspects of the present state of Gender Studies and prospects for the future of this dynamic area of scholarship.

1707. **Bailey, Barbara, and Heather Ricketts.** “Gender Vulnerabilities in Caribbean Labour Markets and Decent Work Provisions.” Social and Economic Studies 52.4 (2003): 49-81. **Refereed**

Asserts that the promotion of gender equality and the empowerment of women remain priority issues in the Caribbean region’s commitment to ensuring sustainable development. Examines the situation of women in formal and informal sectors of the labour market. Acknowledges that there exist gender vulnerabilities in economic participation and empowerment, with women being at greater disadvantage than men, generally, even as the proportion in the top occupational category has now surpassed the proportion of men. Evidence of such disadvantage is provided by labour force participation, unemployment rates, and redundancy data. Additionally, available average monthly income data shows women earning less than men, explained in part by the ‘triple burden’ of balancing employment with responsibilities for childrearing and household management. In terms of the more informal aspects of the labour market, the paper highlights the growing concern of children engaged in paid work, one of the varied responses to poverty. While data on child labour in the Caribbean is limited, the paper notes that data from Jamaica speaks to the greater visibility of boys relative to girls, and the heightened involvement of girls in sex work, some of which is linked to tourism. Concludes by highlighting the policy implications of the findings and provides suggestions for the way forward.

Bailey, Barbara See also 145, 257, 356, 374, 537, 1094, 1310, 1647, 1656, 1660



1708. **Castello, June Ann.** "Shake That 'Booty' in Jesus' Name: the Possibilities of a Liberation Theology of the Body for the Body of Christ in Jamaica." Gender in the 21st Century: Caribbean Perspectives, Visions and Possibilities. Editors Barbara Bailey and Elsa A. Leo-Rhynie. Kingston, Jamaica: Ian Randle, 2004.:281-300.

Also presented at the Mona Academic Conference. UWI, Mona. August 29-31, 2003.

Seeks to explore the contradictions in Christianity's treatment of the body and how the Church's construction of the female body constrains the participation of Jamaican women in the Christian faith. It also attempts to look at the possible components of a liberation theology of the body for the Church in Jamaica.

1709. **Marshall, Annecka.** "Fear of the White Man's Disease: Homophobic Boundaries to Caribbean." The 2005 Conference on Feminist Economics: (American University. Washington, DC.: June 17-19, 2005).

1710. **Shirley, Beverley.** "Divided in Struggle, Undivided in Pain: Women, Politics, and Activism in Guyana in 1970's." The 2005 Conference on Feminist Economics: (American University. Washington, DC: June 17-19, 2005).

Guyana is a plural society. Although integrated to some extent, they have all managed to retain some amount of group identity, and remnants of the culture of origination are still being exercised. Though Indo-Guyanese remain the statistical majority with Afro-Guyanese people following closely behind in the count, there exists in the minority, the Chinese, Amerindians, Portuguese and other European groups. This paper is located in the 1970s and seeks to understand the perspectives of two groups of women from an ethno-political standpoint-the ways in which activism is conceptualized and bifurcated, skewed to group needs, politics and cultural practices. The paper seeks to understand how politics and ethnicity is intricately interwoven, and as a result, dictate group hegemonic understandings of ideology which in turn influence attitudes and actions. Based on interviews with women involved in politics and activism in Guyana in the 1970s, the paper provides empirical evidence of lived experiences in an attempt to examine the ways in which politics affected women's lives, spurred activism and *revolutionized* women's space. These lived experiences should shed light on the diverse perceptions of the environment, and the subsequent varied activist approaches which were viewed as important in resolving issues that affected different women's lives. Since the 1970s was steeped in political activism, it is imperative that the past be captured with the view to understanding the present and a sense of the future.

1711. **Tang Nain, Gemma, and Barbara Bailey,** Editors. Gender Equality in the Caribbean: Reality or Illusion? Kingston, Jamaica: Ian Randle/CARICOM Secretariat, 2003.

Assesses the situation of women in the Caribbean region in the period since the 1995 Beijing conference. The authors examined a range of issues including education, poverty, decision-making and violence and concluded that while women have made gains in some areas, such gains have not led to greater security and personal autonomy for women. The contributors also attempt to link years of research and action to specific governmental programmes focusing on women in an effort to derive more effective policy and programme action.



Centre for Marine Sciences

1712. **Bush, Stephanie L., William F. Precht, and Jeremy D. Woodley.** "Indo-Pacific Mushroom Corals Found on Jamaican Reefs." Coral Reefs 23.2 (2004): 234. **Refereed**

1713. **Crabbe, M., C. James, Judith M. Mendes, and George F. Warner.** "Lack of Recruitment of Non-Branching Corals in Discovery Bay Is Linked to Severe Storms." Bulletin of Marine Science 70 (2002): 939-45. **Refereed**

The authors developed a rational polynomial function model for coral colony growth which proved a better fit than exponential logistic, Gompertz, and von Bertalanffy models. They tested the models with published coral weight growth data, and with new growth band data with *Montastraea annularis* samples. There was good correlation ($r = 0.92$, $P < 0.01$) between rates of growth and the degree of the polynomial, and this related to coral morphology, where $n = 1$ for non-branching corals, $n = 2$ for plate coral and $n = 3$ for branching species. This model was used to verify growth rates when the surface areas were measured and recruitment dates of 438 non-branching corals in sites around Discovery Bay, Jamaica were calculated. Recruitment was significantly lower in 1980, 1951 and 1944 than in other years since 1940. This low recruitment coincided with the severest storms since 1940. There was a significant negative correlation ($r = -0.72$, $P < 0.01$) between recruitment estimates and storm severity. The severest storms resulted in significantly ($P < 0.002$) lower recruitment estimates. The authors show here that severe storm damage not only destroys branching corals, it also results in limiting non-branching coral recruitment.

1714. **Creary, Marcia M.** "A Simplified Field Guide to the Bryozoan Species Found on the Roots of the Red Mangrove (*Rhizophora Mangle*) in and Around Kingston Harbour, Jamaica, West Indies." Bulletin of Marine Science 73.2 (2003): 521-26 **Refereed**

The prop roots of the red mangrove (*Rhizophora mangle*) provide an attractive substrate for marine fauna and flora to settle. This article provides a detailed report of a study conducted on 848 prop roots of the red mangrove in and around Kingston Harbour, Jamaica. A glossary of technical terms and a simplified field guide for identifying the specimens based on the characteristics of the mature live colonies found attached to the prop roots are provided.

1715. ——. "Spatial Distribution of Epibenthic Bryozoans Found on the Roots of *Rhizophora Mangle*, Kingston Harbour, Jamaica, WI." Bulletin of Marine Science 73.2 (2003): 477-90. **Refereed**

The abundance and distribution of the bryozoan species on the prop roots of the red mangrove, *Rhizophora mangle*, at diverse locations around Kingston Harbour are described. The study was carried out in four mangrove areas (Port Royal, Great Salt Pond, Dawkins Pond and Hunts Bay) over a 15 mo period between September 1994 - December 1995 a total of 12 stations. Five roots from each sample station were collected each month and analysed. Water depth, root density, root length, transparency, dissolved oxygen, temperature, suspended solids, and salinity were measured for each station. The estimate of abundance of the bryozoan species and other sessile invertebrates was carried out using a modified point intercept method in which a template of transparent perspex with 100 (Bryozoa, Hyrozoa, Amphipoda, Cirripedia, Porifera, Ascidiacea, Bivalvia, Anthozoa, Polychaeta, Algae, other and Bare Root) were selected for classification of the sessile community. Of the environmental parameters measured, salinity showed the expected pattern with greatest variability and lowest mean values (24.0- 24.2) in Hunts Bay. A diverse assemblage of organisms with a total of 86 species colonized the submerged portions of the mangrove prop roots. Dawkins Pond and Hunts Bay had fewer taxonomic groups. Bryozoans species were found at all stations with relative abundances ranging from 2-70 %. The bryozoans species were, however, not well represented in the sessile community of the Great Salt Pond while they dominated that of Hunts Bay. There were a total of bryozoans species identified. In Port Royal, which contained the most extensive red mangrove stands, a total of 17 species were discovered. This compared to eight species found in the Great Salt Pond and three species each in Dawkins Pond and Hunts Bay. The species composition found in the Great Salt Pond was similar to that found in Port Royal while Dawkins Pond and Hunts had fewer species including a new undescribed species of *Bawerbankia*. The salinity levels, although a contributing factor, do not fully explain all the differences observed in the composition of the



communities. The history of the community probably played an important role in the variability observed with the added interaction of such factors as seasonal growth, predation, physical disturbances, larval dispersal and recruitment.

1716. **Davis, Bruce E., and Norman J. Quinn.** "Using GIS in Human Impact Analysis of Mangroves ." *South Pacific Journal of Natural Science* 22 (2004): 1-13.

<http://www.usp.ac.fj/spjns/volume22/davis.pdf> . **Refereed**

In this study, a GIS approach was developed to provide ground-level classification of mangrove communities and their impact by humans. Mangroves around Suva are declining due to peripheral pressures from expanding land use and interior pressures of increased resource utilization. Increasing urbanisation, particularly the growth of industrialisation and squatter settlements, has resulted in greater utilisation of mangrove communities (*Rhizophora* - *Bruguiera*). Better information is needed if sustainable environmental management practices are to succeed. Remote sensing is unable to provide the detail and scale of data that is required, but in situ field work, combined with GIS approaches, offers an enhanced methodology. This project examines the mangroves of the Suva peninsula using a geographical information system (GIS) approach in order to derive better techniques for monitoring, analysing and managing these deteriorating environments.

1717. **Gayle, Peter M. H., P. Wilson-Kelly, and Sean O. Green.** "Transplantation of Benthic Species to Mitigate Impacts of Coastal Development in Jamaica ." *Revista De Biología Tropical* 53. Supplement 1 (2005): 105-15.

Maintaining regional competitiveness and economic viability for Port Bustamante - Kingston Harbour, Jamaica, required improved accessibility to "Post Panamax" (too large to pass through the Panama Canal) container vessels. Removal of the northern portion of the shallow coral reef at Rackham's Cay, which was partially obstructing the western end of the east ship channel, was proposed. This aesthetically valuable reef was used by local fishermen and comprises part of the declared Palisadoes - Port Royal Protected Area. The proposal to transplant certain of the benthic species was advanced to mitigate loss of viable reef components. Between December 2001 and February 2002, sixty thousand items, consisting of reef building massive and branching corals; gorgonians; urchins (*Diadema* and *Tripneustes* spp.) and *Thalassia* meristems were relocated. During dredging, sedimentation rates from suspended solids in the water column were 0.003 g/cm(2)/day at the control site and 0.008 g/cm(2)/day at the dredge site. Coral cover in the relocation area increased from 15% to 20% while bare substrate decreased from 27% to 21%. This paper documents the mitigation required, some factors controlling the ecology of Rackham's Cay reef; the methodology of the relocation process; and the level of post-dredging survivorship of relocated corals. Political and economic realities of some proposed developments often override ecological considerations. Transplantation of important marine benthic species although time consuming, technically challenging, and expensive, may be one way for developers and ecologists to achieve sometimes disparate goals. This project cost US\$1.7 million. The "items" moved were neither unique nor endemic and remain vulnerable to natural and anthropogenic impacts. This project increased public awareness and interest regarding the ecological and economic importance of reef ecosystems. It is anticipated that future coastal and inland developments will benefit from the lessons taught by these mitigative interventions.

1718. **Haley, Michael P., and Anthony Clayton.** "The Role of NGOs in Environmental Policy Failures in a Developing Country: The Mismanagement of Jamaica's Coral Reefs." *Environmental Values* 12 (2003): 29-54.

Recent years have seen a proliferation of non-government organizations (NGOs) with a mission to help redress various social and environmental problems, but the effectiveness of these organizations in carrying out their stated goals is rarely assessed or critically examined. The authors argue that many of them are ineffective, and in some cases they may even exacerbate the problems they set out to solve. These points are illustrated by the case of Jamaica's coral reefs, which have been under stress for decades, and the work of the well-intentioned organizations and individuals that have been involved in the attempt to stem or reverse the damage, also significant funding has been channeled through these agencies. In spite of this, there has been no documented improvement in the condition of the reefs, apart from some natural regeneration that owed nothing whatever to any human activity. Solutions for



alleviating the degradation in the Jamaican marine environment are also offered.

Haley, Michael P. See also 1721

1719. **Kojis, Barbara L., Norman J. Quinn, and S. M. Caseau.** “Recent Settlement Trends in *Panulirus Argius* (Decapoda: Palinuridae) Pueruli Around St. Thomas, U.S. Virgin Islands.”

Revista De Biología Tropical 51 (Supplement 4) (2003): 17-24. **Refereed**

Puerulus settlement of the western Atlantic spiny lobster, *Panulirus argus*, was monitored using modified Witham collectors from December 1996 to March 1998 at seven sites around St. Thomas, U.S. Virgin Islands. A total of 605 pueruli were collected from 553 samples for a catch per unit effort (CPUE) for all sites of 1.09 pueruli. The greatest settlement occurred on sites within a recently declared marine reserve, which had an overall CPUE of 1.77 pueruli. Settlement in non-reserve sites was much lower with an overall CPUE of 0.31 pueruli. Pueruli recruitment declined 67% at inshore sites and 53% at offshore sites between July 1992 - April 1994 and February 1997 - March 1998. Also, only 10% of months sampled in 1997-98 had a CPUE > 0.5 compared to 55% in a previous study in 1992 - 1993. Despite the decline in pueruli CPUE in 1997-98 compared to 1992-94, the commercial lobster catch in the 2000-01 fishing season, and by inference the adult lobster population (legal lobster size in the US Virgin Islands is > or = 3.5 cm carapace length) remained stable.

1720. **Linton, Dulcie M., Robbie Smith, Pedro Alcolado, Carl Hanson, Peter Edwards, Reynaldo Estrada, Tatum Fisher, Raul G. Fernandez, Francisco Gerales, Croy McCoy, Duncan Vaughan, Vincent Voegell, George F. Warner, and Jean Wiener.** “Status of Coral Reefs in the Northern Caribbean and Atlantic Node of the GCRMN.” Status of Coral Reefs of the World. Editor Clive R. Wilkinson. Townsville, Australia: Australian Marine Science, 2002. 277-302.

The general pattern is one of continued decline of coral reef resources, although the rate of decline may have slowed. The decline is particularly acute where island shelves are narrow and easily accessible, and where reefs are relatively close to high population areas. Some of the more isolated reefs of the Bahamas, Turks and Caicos and Cuba are still considered relatively healthy. Reefs of the Cayman Islands and Bermuda are generally healthy, although impacts are increasing, while reefs systems of the Dominican Republic, Haiti and Jamaica are highly impacted, with low coral cover on most shallow reefs. In most cases, the deterioration of the reefs is related to nutrients and sediment pollution from on-shore sources, such as sewage and agriculture (causing algae to over-grow reefs), disease, over fishing, anchor damage, destructive fishing (dynamite and bleach) and high diving/snorkeling pressures. All the countries are dependent on tourism to some extent to support their economies, but in countries such as the Dominican Republic, Haiti and Jamaica, where economic development is heavily dependent on the marine environment, the deterioration of the reef system is greater, due to rapid coastal development and resultant habitat destruction. The situation in these countries is exacerbated by high fishing pressure on coral reef fishes. Where legislation and effective management of marine resources are given fairly high priority (Bahamas, Bermuda, Cayman), some of the negative stresses have been removed and reef systems appear more stable. However, where MPAs have not declared (Haiti) or where they remain little more than ‘paper parks’ (Cuba, Dominican Republic and Jamaica) coral reefs continued to be under stress.

1721. **Mallela, Jennie, Christopher T. Perry, and Michael P. Haley.** “Reef Morphology and Community Structure Along a Fluvial Gradient, Rio Bueno, Jamaica.” Caribbean Journal of Science 40.3 (2004): 299-311. **Refereed**

This study assessed the combined effects of natural riverine inputs and variation in wave energy upon the reef development and coral community structure in the small embayment of Rio Bueno, northern Jamaica. The embayment is subject to seasonally variable fluvial discharges of terrigenous sediment and freshwater. Water quality deteriorated with increasing proximity to the embayment head and river mouth, with sediment influx resulting in high turbidity levels and a reduced light environment within inner and central embayment areas. Sedimentation rates within the central embayment peaked at 43.2 mg cm⁻² d⁻¹ during this study. Coral communities were only present in the outer, clear water sites and central, moderately turbid sites, but were absent from the inner embayment areas



which are adjacent to the river mouth. Mean (± 1 SD) hard coral cover was 11.6% (± 8.1), with a maximum of 42.9% along the reef flat in the medium impacted zone. Within this zone, framework development was spatially and bathymetrically restricted. However, when compared with clear water sites, greater species richness, higher coral cover and a greater abundance of large, dome-shaped corals occurred. Common species included *Diploria strigosa*, *Porites astreoides* and *Siderastrea siderea*, which are suggested to be those most tolerant to sediment stress. At sites with coral framework (central and outer sites), algal cover was positively correlated with increasing distance from the head of the embayment, whilst coral cover was negatively correlated with increasing distance from the head, peaking in the central embayment.

1722. **Quinn, Norman J.** Aquatic Knowledge and Fishing Practices in Melanesia: CBS, 2004. This book provides information on environmental issues and traditional fishing methods practiced in Melanesia. It contains thirty essays, most of which were written by the students of the Papua New Guinea University of Technology, University of the South Pacific and the University of Papua New Guinea.
1723. —. “Documenting Melanesian Traditional Aquatic Knowledge and Fishing Practices.” [Abstract]. Tenth International Coral Reef Symposium : (Okinawa, Japan: June 27 - July 2, 2004).
1724. **Quinn, Norman J.** “Reef Check- Papua New Guinea’s Participation in a Global Assessment of Human Effects on Coral Reefs. [Abstract].” The Society for Integrative and Comparative Biology: (Chicago, Illinois: January 3-7, 2001).
1725. **Quinn, Norman J.** “Using Underwater Photography As a Tool to Increase the Awareness of the Coral Reef Habitat.” [Abstract]. Celebrating Achievements in Caribbean Education: Transformation, Diversity and Collaboration. Seventh Biennial Conference of the School of Education, University of the West Indies, Mona.: (Renaissance Grande Hotel. Ocho Rios, Jamaica: April 15-17, 2004).
1726. **Quinn, Norman J., Nadia-Deen Ferguson, Deborah Gotchfeld, Mark N. Hamann, Jennifer I. Stephenson, Larry Walker, and Barbara L. Kojis.** “Discovering Pharmacologically Interesting Natural Products From the Coral Reefs of Jamaica.” [Abstract]. Tenth International Coral Reef Symposium: (Okinawa, Japan: June 27 - July 2, 2004).
1727. **Quinn, Norman J., and Barbara L. Kojis.** “The Dynamics of Coral Reef Community Structure and Recruitment Patterns Around Rota, Saipan, and Tinian, Western Pacific.” Bulletin of Marine Science 72.3 (2002): 979-96. **Refereed**
Twenty-seven years after a major *Acanthaster planci* outbreak on Rota, Saipan and Tinian, coral cover has increased and reef community structure has changed. Many of the reefs are now dominated by species of the family poritidae, particularly; *porites rus* and *p. cf. lutea*. *Acanthaster planci* and *culcita novaeguineae* remain present in low densities on most of the reefs surveyed and continue to keep the populations of Acroporidae and pocilloporidae low. The mean planula settlement rate observed was lower than that observed at other coral reefs in the Pacific, e.g., Fiji, the Great Barrier Reef and Guam. Juvenile coral recruits were dominated by species of the family poritidae while planulae recruitment was dominated by recruits from the family pocilloporidae (80%). In contrast to other reef systems in the Pacific, where acroporids dominate summer recruits, only 8 % of the recruits were acroporans.
1728. —. “Invertebrate Recruitment Patterns Inside and Outside Discovery Bay, Jamaica.” [Abstract]. Tenth International Coral Reef Symposium: (Okinawa, Japan: June 27 - July 2, 2004).
1729. —. “Patterns of Sexual Recruitment of Acroporid Coral Populations on the West Fore Reef



at Discovery Bay, Jamaica.” Revista De Biología Tropical 53.Supplement 1 (2005): 83-89.

Coral recruitment was examined on terracotta tiles deployed for four six-month periods between March 2001 and April 2003 on the West Fore Reef at Discovery Bay, Jamaica. During each sampling period, four tiles were deployed on each of two arrays at six depths ranging from 3 m to 33 m. Only three *Acropora* spat recruited to the tiles over the sampling period. The *Acropora* spat recruited during only one of the four six-month sampling periods and at only one depth, 3m. That represents a density of 8 spat m⁻² at 3 m depth for one six-month sampling period. *Acropora* recruitment represented <1 % of the total spat recruiting to the tiles deployed at 3 m during the four sampling periods. Density of acroporids on the West Fore Reef is low. Only one *Acropora* colony (an *A. palmata*) was recorded during Point-Quarter surveys of coral cover and density at depths of 3 m, 9 m, 14 m and 19 m. Considering the paucity of acroporid colonies and the infrequent settlement of acroporid spat on the West Fore Reef, it is unlikely that the historic abundance of *A. palmata* and *A. cervicornis* will return soon.

1730. —. “Salinity Variation on an Off Shore Coral Reef After a Period of Intense Rainfall.” [Abstract]. Tenth International Coral Reef Symposium. (Okinawa, Japan: June 27 - July 2, 2004).

1731. —. “Variation in Subsurface Seawater Temperature Off Discovery Bay, Jamaica and the U.S. Virgin Islands.” Revista De Biología Tropical 51 (Supplement 4) (2003): 181-87. **Refereed**

Long-term, high accuracy seawater temperature data sets are essential in studies assessing environmental changes that may alter coral reef communities. Located at approximately the same latitude, the subsurface seawater temperature (S3T) off Discovery Bay, Jamaica (DBJ) and the U.S. Virgin Islands (USVI) had the same overall mean temperature. The USVI S3T during the winter months is approximately 0.5 degrees C warmer than DBJ, while May - July at DBJ is approximately 1 degrees C warmer than USVI S3T. With the passing of tropical storms in 1995 and 1997 in the USVI S3T dropped as much as 1.5 degrees C within a 20 hour period and did not revert to the previous temperature during that calendar year. Mean monthly S3T during 2000 and 2001 in the USVI was > 0.5 degrees C warmer than during similar periods in the early 1990s. Mean monthly S3T during 1999-2002 at DBJ was 0.27 degrees C cooler than during 1994-1995.

1732. **Quinn, Norman J., and P. F Newell.** “Subsurface Sea Water Temperatures and the Year 2000 Coral Bleaching Event in Fijian Waters.” The Society for Integrative and Comparative Biology: (Chicago, Illinois: January 3-7, 2001).

Analysis of three years of subsurface sea water temperatures at several sites shows increased temperatures preceding the year 2000 coral bleaching event. Hurgun automated temperature recorders were deployed at 3m at twelve sites and programmed to record temperature hourly. Temperatures in early 2000 were 1°C to 0°C warmer than during previous years. Off shore temperatures in Bligh Passage in previous years ranged from 24°C to 28°C. However, in the period preceding and during the coral bleaching event the temperature range was 26°C to 29°C. The period of coolest temperatures was typically July to early October. Temperatures in Bligh Passage seldom dropped below 25.5°C. Although temperatures on fringing reefs around islands were more variable they also exhibited a similar temperature increase as off shore sites. The reefs near Suva were influenced by freshwater discharges from the Rewa River. Sudden changes in temperature were correlated with large discharges of freshwater using a conductivity meter. Temperatures in the lagoonal waters off western Vite Levu were typically warmer than other sites.

1733. **Quinn, Norman J., Rebecca Samuel, and Barbara L. Kojis.** “Papua New Guinea’s Participation in a Global Assessment of Human Effects on Coral Reefs 1998-2000..” [Abstract]. Tenth International Coral Reef Symposium. (Okinawa, Japan: June 27 - July 2, 2004).

Quinn, Norman J. See also 1716, 1719



1734. **Todd, Sacha-Renee L., George F. Warner, and Eric J. Hyslop.** “The Impact of the Introduced Red Claw Crayfish *Cherax Quadricarinatus* (Von Martens, 1868) in Two Jamaican Rivers.” [Abstract]. Proceedings of the Sixth Conference. Faculty of Pure and Applied Sciences: (Faculty of Pure and Applied Sciences. University of the West Indies, Mona: March 18-20, 2003) Editors Daniel N. Coore and Robert J. Lancashire. Kingston, Jamaica, 2003. 64.

1735. **Warner, George F.** “The Occurrence of Black Corals in Jamaican Reef Environments, With Special Reference to *Stichopathes Lutkeni* (*Antipatharia* : *Antipathidae*) .” Revista De Biología Tropical 53. Supplement 1 (2005): 61-66 .

The purpose of this study was to record the species of *Antipatharia* on Jamaican reefs and to carry out limited studies on densities and sizes of the common species. In addition, a cliff face created by dredging in 2002 provided the opportunity to study growth of newly settled colonies. Observations since 1998 and measurements since 2001 were made using SCUBA at depths down to 35 m. Seven species of *Antipatharia* were observed on steep coral reef escarpments below 25 m depth. The commonest species was the unbranched “wire coral” *Stichopathes lulkeni*. Other common species included the fan-shaped black corals *Antipathes atlantica* and *A. gracilis*. Frequently encountered species included commercially important *A. caribbeana* and a species with an unusual, scrambling growth form, *A. rubusiformis*. The other major commercial species in the Caribbean, *Plumapathes pennacea*, and a cave-dwelling species, *A. umbratica*, were rarely observed. Greatest black coral abundance occurred on steep slopes of hard substrata in low light intensity, but exposed to the long-shore current. Combined densities of the commoner *Antipatharia* at 30 m deep at Rio Bueno on the north coast, ranged from 0.1 to 2.5 m⁻² (eleven 10 m x 1 m belt transects, 1-25 colonies per transect, 68 colonies in total). Forty-six of the 68 colonies were *S. lutkeni*, while nearby at Discovery Bay at 30-35 m, 55 out of 59 colonies were *S. lulkeni*. There was a significant difference between the mean length of colonies in these two populations of *S. lutkeni* (100 cm and 80 cm, respectively), probably relating to habitat. A third population of *S. lutkeni* growing at 15-20 m deep on the recently dredged cliff had a much smaller mean length of 36.6 cm (n= 27). The largest individual measured 83 cm long, indicating a minimum growth rate of the unbranched corallum of 2.1 mm per day.

1736. **Warner, George F., and Ivan Goodbody.** “Jamaica.” Caribbean Marine Biodiversity: the Known and the Unknown . Editors Patricia Miloslavich and Eduardo Klein. Caracas, Venezuela: Universidad Simon Bolivar, 2005. 57-70.

The marine environment and marine habitats of Jamaica are described and the number of species in various taxa are estimated. Records exist for more than three thousand species of marine plants and animals from the shallow marine waters of Jamaica. Recent checklists for shallow water sponges, corals, molluscs and fishes have been published while other groups such as gorgonians, ascidians and echinoderms have been well studied. Estimates of numbers of species for these groups are likely to be more accurate than for others which have been less well studied and for which the literature is scattered. These groups include minor phyla, nematodes, small crustaceans and small and microscopic animals and plants. The few deep sea studies that have been carried out indicate large numbers of species still to be recorded from that habitat. In addition, new species in all taxa are still being described from habitats and it is likely that many more remain to be discovered. Threats to marine diversity are briefly reviewed; these include local threats (for example pollution, over-fishing) and international treats (for example disease, global warming). Ecological biodiversity is expected to decline in badly stressed systems. Genetic biodiversity at the species level may assist organisms to survive these stresses but at present little is known about the molecular biology of Caribbean marine biota.

1737. **Warner, George F., and Dulcie M. Linton.** “The Caribbean Coastal Marine Productivity Program (CARICOMP) .” Caribbean Marine Biodiversity: the Known and the Unknown. Editors Patricia Miloslavich and Eduardo Klein. Caracas, Venezuela: Universidad Simon Bolivar, 2005 Details the work, role, membership and publications of CARICOMP, the Caribbean Coastal Marine Productivity Program. Data are available through the website of the Caribbean Coastal Data Centre of the University of the West Indies, Jamaica (www.ccdc.org.jm).



1738. **Warner, George F., and Dennis M. Opresko.** "A New Black Coral (Anthozoa: Antipatharia) From a Reef Wall Environment in Jamaica." Bulletin of Marine Science 74.1 (2004): 169-74. **Refereed**

A new species of antipatharian coral is described. *Antipathes rubusiformis* forms sprawling colonies, which spread sideways beneath overhangs on steep cliffs below 20 metres deep. Colonies are attached by multiple holdfasts that develop at the tips of recurved branches where they contact the substratum. Branches are thin, often curved and set at wide angles; branching is irregular. Axial spines are triangular, compressed, and finely papillose on the upper third of their surface. The species resembles *Antipathes lenta*, Pourtales (1871), from which it differs by having longer, papillose spines and less regular branching, and *Antipathes umbratica* Opresko (1996), which forms more robust colonies with a single holdfast and longer spines.

Warner, George F. See also 1713, 1720, 1734

1739. **Woodley, Jeremy D.** "Fishery Management Measures Instituted at Discovery Bay, Jamaica, With Special Reference to Establishment of the Fisheries Reserve." Gulf and Caribbean Research 14.2 (2003): 181-93.

Jamaican north coast coral reef fish stocks have been over-exploited. The Fisheries Improvement Programme (FIP) began in 1988 to help fishers at Discovery Bay to introduce management measures. Social and cultural constraints included poverty and mistrust among fishers. FIP initiated: 1) an education programme in reef fisheries and the possibilities of local management; 2) encouragement of a Discovery Bay Fishermen's Association; in 1994, Association members agreed on a voluntary protected area within Discovery Bay; 3) a Reserve Planning Group, representing all users of the bay; 4) contract with Fishermen's Association: Grant funds were transferred to it to employ rangers; 5) marking and daily patrols within the Reserve starting in 1996; and 6) legalization of the Reserve, which was not obtained. Within two years of Reserve protection, fishers perceived an increase in fish abundance and asked that the protected area be extended. Studies on fish populations in 1996 and 1998, showed that the Reserve delayed age and size at recruitment to the fisheries and enhanced catches in adjacent waters. The failure to gain legal status and lack of funds to maintain patrols after 1999, led to a decrease in compliance with the voluntary restrictions on fishing. Recommendations are provided.

Woodley, Jeremy D. See also 1712

Earthquake Research Unit

1740. **Moreno, Bladimir, Margaret D. Wiggins-Grandison, and Kuvvet Atakan.** "Crustal Velocity Model Along the Southern Cuban Margin: Implications for the Tectonic Regime at an Active Plate Boundary." Geophysical Journal International 151.2 (2002): 632-45. **Refereed**

A new 1-D velocity model along the southern Cuban margin has been determined using local earthquake data, which are the result of the merged Cuban and Jamaican catalogues. Simultaneous inversion using joint-hypocentre determination was applied to solve the coupled hypocentre - velocity model problem. The authors obtained a seven-layer model with an average Moho interface at 20 km. The average velocity was found to be 7.6 km s^{-1} on the top of the crust-mantle transition zone and 6.9 km s^{-1} in the basaltic layer of the crust. The improvement in the earthquake locations allowed us for the first time to use local seismicity to characterize the activity on local faults and the stress regime in the area. For this purpose, 34 earthquake focal mechanisms were determined along the eastern segments of the Oriente Fault. These solutions are consistent with the known left-lateral strike-slip notion along this major structure as well as with the stress regime of two local structures: (1) the Cabo Cruz Basin and (2)



the Santiago deformed belt. The first structure is dominated by normal faults with minor strike-slip components and the second by reverse faults. The shallow seismicity in the Cabo Cruz Basin is associated with fault planes trending N55°-58°E and dipping 38°-45° to the north. The Santiago deformed belt, on the other hand, exhibits diverse fault plane orientations. These local structures account for most of the earthquake activity along the southern Cuban margin. Deep seismicity observed in the Santiago deformed Belt, supported by focal mechanisms, suggests underthrusting of the Gonave Microplate beneath the Cuban Block in this area. The principal stress orientations obtained from stress inversion of earthquake focal mechanisms suggest a thrust faulting regime along the Southern Cuban margin. We obtained a nearly horizontal σ_1 and nearly vertical σ_3 , which indicates active compressional deformation along the major Oriente transcurrent fault in agreement with the dominant structural trend associated with the Santiago deformed belt.

1741. **Wiggins-Grandison, Margaret D.** “Advances in Jamaican Seismology.”, 2003. (Doctoral thesis. Department of Earth Sciences. University of Bergen, Norway. ISBN 82-9222-018-6)

This broad study of Jamaican seismology establishes new information for Jamaica that is prerequisite to future studies on Jamaican seismicity and seismicity hazard. The details are presented in six individual research papers, starting with developments at the New Jamaica Seismograph Network (JSN), which have significantly improved the quality and reliability of the data recorded. For the first time, local earthquake data have been used to investigate one-dimensional crustal structure, tomography, attenuation, and the state of stress in the Jamaican crust by way of inversion of local fault-plane solutions. In addition, some of the results were applied in modeling through a 2-D finite-difference scheme local-source shear-wave excitation of the thick alluvial fan sediments. The sediments from the Liguanea Basin that underlies the city of Kingston, Jamaica’s capital and the largest in the English-speaking Caribbean. The most important results of this thesis are: (1) a new average 1-D velocity model for the Jamaican crust; (2) details pertaining to Jamaican seismicity; (3) coda Q and kappa attenuation parameters; (4) a spectral ground motion attenuation relation for use in seismic hazard assessment; (5) the crustal stress regime for Jamaica, and (6) the demonstrated diverse seismic response of the Liguanea Basin. The thesis presents a thicker Jamaican crust than heretofore acknowledged, with velocities typical of basaltic, oceanic type crust that displays relatively high inelastic attenuation. In addition, the Jamaican crustal stress regime typifies strike-slip faulting, consistent with North American-Caribbean plate boundary motions.

1742. ——. “Simultaneous Inversion for Local Earthquake Hypocentres, Station Corrections and 1-D Velocity Model of the Jamaican Crust.” Earth and Planetary Science Letters 224.1/2 (2004): 229-41. **Refereed**

A new 1-D velocity model for Jamaica has been obtained from the simultaneous inversion of P- and S-wave travel times of well-solved local earthquakes. The crust is modeled as four flat uniform layers with compressional velocities of 5.15 km/s to 4.5 km depth, 6.30 km/s to 9.5 km, 6.60 km/s to 22.0 km and 7.11 km/s to 30.0 km. The upper mantle P-velocity is 7.81 km/s, which is consistent with upper mantle velocities found elsewhere in the Caribbean Basin. The new model reduces significantly the root mean square misfit of the selected data from 0.128 to 0.112 when compared to the best model previously used. In addition, the model solves events to more acceptable focal depths of 10 to 25 km. Station corrections of -0.20 to +0.06 for P and -0.75 to 0.13 for S-waves relative to the reference station were obtained. The new model is expected to improve Jamaican earthquake locations particularly in obtaining more reliable focal depths, which in turn will enhance the interpretation and understanding of local seismicity and neotectonics.

1743. **Wiggins-Grandison, Margaret D., and Kuvvet Atakan.** “Seismotectonics of Jamaica.” Geophysical Journal International 160.2 (2005): 573-85. **Refereed**

This is the first seismological investigation of the stress regime in the Jamaican crust. The fault plane solutions of 32 well-recorded local earthquakes were determined and used as inputs for determining stress directions. The results consistently show that a strike-slip fault regime ($S_H > S_V > S_h$) exists in three homogeneous crustal areas, namely the Blue Mountain-Wagwater restraining bend of eastern Jamaica, the Rio Minho-Crawle River (RMCR) fault of central Jamaica and the Montpelier-Newmarket belt (MNB) of western Jamaica. However, for the island as a whole, a



thrust-faulting regime ($S_H > S_H > S_V$) was found, but inhomogeneity is implied by the higher level of misfit obtained. These results are in keeping with results of other recent studies in the Jamaica–Cuba region and with the strike-slip regime of the Gonave microplate boundaries.

1744. **Wiggins-Grandison, Margaret D., and Jens Havskov.** “Crustal Attenuation for Jamaica, West Indies .” Journal of Seismology 8.2 (2004): 193-209.

The S and coda wave spectra of small earthquakes on the island of Jamaica were used to determine the near surface and coda Q attenuation, κ and Q_c , respectively. Q_c determined by the single-station method was found in the range of 1 to 10 Hertz to be given by the relationship, $Q_c = 60 \pm 5 f^{0.87 \pm 0.05}$. This suggests that the Jamaican crust is highly attenuating which is further supported by the observation of rapid intensity fall-off with distance for earthquakes that have affected the island in the past. κ , determined from S-wave spectra with short travel times was found to be 0.058 ± 0.012 on the central crustal block, which makes up nearly two-thirds of the island, and 0.080 ± 0.014 in surrounding belt sub-regions. The pattern of κ values seems to fit with the surface geology in that the central block has areas of exposed outcrops of older and harder rock than the belts, which are characterized by thicker sedimentary sequences as well as intense fracturing and faulting. Atkinson and Boore (1998) and Atkinson (2001) presented an alternative method to stochastic modeling for ground motion in Eastern North America, whereby California attenuation relationships were modified to account for crustal differences in velocity-depth profile, Q and κ between both regions. Following their example, the California spectral attenuation relation of Boore, Joyner and Fumal (1997) was modified to account for differences between the California and Jamaica crust, resulting in an attenuation relation that is deemed to be more appropriate for Jamaica. Spectral accelerations for Jamaica when compared to California, are especially reduced beyond 20 km from the source and at high frequencies, $f = 1$ hertz. The study concludes that the Jamaican crust, although having an oceanic composition is highly attenuating, which may be a result of intensive tectonic processes, whereas κ is consistent with near-rock conditions on the central block and soft rock conditions elsewhere on the island.

1745. **Wiggins-Grandison, Margaret D., T. R. Kebeasy, and E. S. Husebye.** “Enhanced Earthquake Risk of Kingston Due to Wavefield Excitation in the Liguanea Basin, Jamaica..” [Abstract]. EGS - AGU - EUG Joint Assembly: (Nice, France: April 6 - 11, 2003).

Wiggins-Grandison, Margaret D. See also 1740

Electron Microscopy Unit

1746. **Massardo, Domenica Rita, Luigi Del Giudice, and Klaus W. Wolf.** “Isolation and Characterisation of Nuclear Mutants With Enhanced Mitochondrial Mutability in the Fission Yeast *Schizosaccharomyces Pombe*.” Microbiological Research 157.3 (2002): 197-200.

The authors report the isolation and preliminary characterisation of nuclear mutants with increased mitochondrial mutability in fission yeast. Screening of about 2000 clones after nitrosoguanidine mutagenesis led to the isolation of ten mutator mutants. For one of them (mut-1), they show that the mutation is chromosomally encoded. The activity of the mutator is restricted to the mitochondrial genome, since it increases the mutation rate to mitochondrially encoded drug resistance considerably, whereas the mutability of nuclear genes is not altered.

1747. **Massardo, Domenica Rita, Bruno Esposito, Attilio Venesiano, Klaus W. Wolf, and Luigi Del Giudice.** “Hyper-Expression of Small Nucleolar RNAs (SnoRNAs) in Female Inflorescence of Hazelnut (*Corylus Avellana* L.) Supports RRNA Aggregation in Vitro.” Plant and Cell Physiology 44.9 (2003): 884-92.



Under certain in vitro (salt and temperature) conditions rRNA aggregation occurs in female inflorescences but not in leaves or pollen RNA preparations from hazelnut (*Corylus avellana* L.), a species of economic interest. This paper describes experiments addressing an explanation of this phenomenon. The experiments demonstrate that: (i) trans-acting factors induce rRNA aggregate formation in female inflorescences RNA preparations; (ii) these factors support aggregation also of heterologous rRNA; (iii) aggregation is a function of temperature pre-treatment of rRNA and not of source 18S rRNA; (iv) the factors inducing rRNA aggregates are sensitive to RNase; (v) antisense small nucleolar RNAs (snoRNAs) participate in rRNA aggregate formation. snoRNAs are involved in pre-rRNA spacer cleavages, and are required for the two most common types of rRNA modifications: 2'-O-ribose methylation and pseudouridylation. Even though it is questionable whether rRNA aggregation really happens in female inflorescence in vivo, the phenomenon observed in vitro may reflect the abundance of snoRNAs in these reproductive structures. In fact the level of accumulation of three tested snoRNAs, R1, U14 and U3, is much higher in female inflorescence than in leaves or pollen of hazelnut. This finding opens the possibility of studying the role of snoRNAs in tissue development in plants.

1748. Naassner, Markus, Magnus Mergler, Klaus W. Wolf, and Ingolf Schuphan.

“Determination of the Xenoestrogens 4-Nonylphenol and Bisphenol A by High-Performance Liquid Chromatography and Fluorescence Detection After Derivatisation With Dansyl Chloride.” Journal of Chromatography A 945.1/2 (2002): 133-39.

An easily performable and highly selective method for the determination of the xenoestrogens bisphenol A (BPA) and technical 4-nonylphenol (mixture of isomers) from environmental samples was developed. The method consists of fluorogenic labelling of the substances by dansylation followed by HPLC separation of the derivatives. Specific wavelengths ($\lambda_{\text{ex}}=354$ nm, $\lambda_{\text{em}}=545$ nm) for detection of the dansylated phenols were determined in order to reduce the signals of interfering compounds. The applicability of the method for environmental samples was demonstrated by using sewage sludge spiked with BPA and 4-n-nonylphenol (as internal standard).

1749. Pellens, Stefan, Alexis Harington, Bernard Dujon, Klaus W. Wolf, and Bernd Schafer.

“Characterization of the I-Spom I Endonuclease From Fission Yeast: Insight into the Evolution of a Group I Intron-Encoded Homing Endonuclease.” Journal of Molecular Evolution 55.3 (2002): 302-13.

The first group I intron in the *cox1* gene (*cox1I1b*) of the mitochondrial genome of the fission yeast *Schizosaccharomyces pombe* is a mobile DNA element. The mobility is dependent on an endonuclease protein that is encoded by an intronic open reading frame (ORF). The intron-encoded endonuclease is a typical member of the LAGLIDADG protein family of endonucleases with two consensus motifs. In addition to this, analysis of several intron mutants revealed that this protein is required for intron splicing. However, this protein is one of the few group I intron-encoded proteins that functions in RNA splicing simultaneously with its DNA endonuclease activity. The authors report on the biochemical characterization of the endonuclease activity of this protein artificially expressed in *Escherichia coli*. Although the intronic ORF is expressed as a fusion protein with the upstream exon in vivo, the experiments showed that a truncated translation product consisting of the C-terminal 304 codons of the *cox1I1b* ORF restricted to loop 8 of the intron RNA secondary structure is sufficient for the specific endonuclease activity in vitro. Based on the results, they speculate on the evolution of site-specific homing endonucleases encoded by group I introns in eukaryotes.

1750. Phippen, Nadine, Kurt Hoffmann, Rainer Fischer, Klaus W. Wolf, and Martin

Zimmermann. “The Glutathione Synthetase of *Schizosaccharomyces pombe* Is Synthetized As a Homodimer but Retains Full Activity When Present As a Heterotetramer.” Journal of Biological Chemistry 278.41 (2003). <http://www.jbc.org/cgi/reprint/278/41/40152>.

Glutathione synthetase was overexpressed as a histidine-tagged protein in *Schizosaccharomyces pombe* and purified by two-step affinity chromatography. The recovered enzyme occurred in two different forms: a homodimeric protein consisting of two identical 56-kDa subunits and a heterotetrameric protein composed of two 32-kDa and two 24-kDa



subfragments. Both forms are encoded by the *GSH2* gene. The 56-Da protein corresponds to the complete *GSH2* open reading frame, while the subfragments are produced following the cleavage of this larger protein by a metalloprotease. A stable homodimer was obtained by site-directed mutagenesis to remove the protease cleavage site, and this showed normal activity. A structural model of the fission yeast glutathione synthetase was produced, based on the x-ray coordinates of the human enzyme. According to this model the interacting domains of the proteolytic subfragments are strongly entangled. The subfragments were therefore coexpressed as independent proteins. These subfragments assembled correctly to yield functional heterotetramers with equivalent activity to the wild type enzyme. Furthermore, a permuted version of the protein was created. This also showed normal levels of glutathione synthetase activity. These data provide novel insight into the mechanisms of protein folding and the structure and evolution of the glutathione synthetase family.

Reid, Walton A. See also 1214, 1751, 1752

1751. **Wolf, Klaus W., and Walton A. Reid.** “The Wart-Like Chorion of *Edessa bifida* (Hemiptera: Pentatomidae).” *Journal of Submicroscopic Cytology and Pathology* 35.4 (2003): 469-73.

There is the suspicion that the stink bug *Edessa bifida* invades cotton fields in Southern parts of North America. To assist in the early detection of the bug, the morphology of deposited eggs of *E. bifida* is described using scanning electron microscopy (SEM). The study revealed a surface pattern not yet seen in the Pentatomidae. The almost spherical eggs are deposited in batches and fastened both to one another and to the plant surface by secretions in all likelihood produced by the female. The egg surface is characterized by pentagons and hexagons formed by slender ridges. The lumen of these polygons shows 1 to 4 circular elevations of variable size and a flat upper face. In contrast to the ridges the elevations are relatively conspicuous. They are reminiscent of tiny warts and therefore the chorion of *E. bifida* is referred to as ‘wart-like chorion’. Twenty-eight to 31 short aero-micropylar processes are mounted in a circumferential row at the anterior pole of the eggs. The discussion focuses on the variability of the chorion in the stink bugs.

1752. **Wolf, Klaus W., Walton A. Reid, and Michael Schrauf.** “Optical Illusions in Scanning Electron Micrographs: The Case of the Eggshell of *Acrosternum (Chinavia) Marginatum* (Hemiptera: Pentatomidae).” *Micron* 34.1 (2003): 57-62. **Refereed**

Scanning electron microscopy revealed that—as is common in this family of the Hemiptera—the eggs of the green stink bug *Acrosternum (Chinavia) marginatum* are roughly barrel-shaped and possess at their apical pole a row of slender extensions, the aero-micropylar processes. The outer surface of the eggshell carries hexagonally arranged pits. The analysis of cross-fractured eggshells showed that the pits have slender basal extensions with transverse diaphragms. When scanning electron micrographs of the egg surface of *A. marginatum* are viewed upside down, the perception flips and the pits appear as elevations to all observers addressed. Thus, we are dealing with an optical illusion, which is known as the ‘shape-from-shading effect’. The perceived dents remain robust to changes in the angle of recording (zero to ca. 60° tilt), the magnification (ca. ×100 to ×1400), and the number of pits included in the micrograph (one to several hundred). When through appropriate positioning of the specimen under the electron beam, contrast is significantly reduced and the distinct shadows at the slope of the pits are eliminated, the optical illusion does not appear. It is inferred that shades provide the decisive clue that determines whether bumps or dents will be perceived. Owing to the low resolution of their compound eyes, the shape-from-shading effect on the eggshell of the bug is in all likelihood not perceived by insects.

Klaus, Wolf W. See also 1177, 1214, 1746, 1747, 1748, 1749, 1750



International Centre for Environment and Nuclear Sciences

1753. **Bryan, S, Gerald C. Lalor, and Mitko K. Vutchkov.** “Blood Lead Levels in Children in Jamaican Basic Schools.” West Indian Medical Journal 53.2 (2004): 71-75. **Refereed**

Blood lead levels (BLL) for 285 children, three to six years old, from seven basic schools located in known areas of anthropogenic pollution, and in urban and rural areas are reported. The samples were obtained by the finger-prick method and analysed for lead by anodic stripping voltammetry. The majority of the children had blood lead levels below the now accepted limit of 10 mug dl- (1) and there was no indication of cases that would represent medical emergencies. The present results show considerable improvement in the BLLs of children living in contaminated sites indicating the effectiveness of the previous remediation steps. Follow-up intervention work is in progress for cases of blood lead levels in excess of the recommended limit.

1754. **Garrett, Robert G., and Gerald C. Lalor.** “The Fe/Na Ratio, a Framework for Modeling Trace Element Distributions in Jamaican Soils .” Geochemistry: Exploration, Environment, Analysis 5.2 (2005): 147-57. **Refereed**

The trace element geochemistry of Jamaican soils (<150 m) is extremely variable due to their development on diverse parent materials, varying maturity (ages range from recent to >5 Ma) and the variety of soil-forming processes. It is demonstrated that the Fe/Na ratio of the soils forms a useful quantitative framework for studying trace element distributions. The ratio varies 2.5 orders of magnitude from <2 in newly developed inceptisols to >500 in oxisols and *terra rossas* that have been developing for >5 Ma. The form of the trace element distributions with respect to Fe/Na ratio may be interpreted in the context of mineralogy of the parent material, removal of labile trace element fractions during soil development, sequestration in stable secondary forms, and ultimate concentration of stable primary resistate and secondary minerals by *terra rossa* soil formation processes that lead to elevated Fe and Al levels and the depletion of silica and base cations, Ca^{2+} , Mg^{2+} , Na^+ and K^+ . As examples, the distributions of U and As are modeled as functions of the Fe/Na ratio. Use of robust regression procedures identifies individual soil samples that exhibit divergent patterns of trace element concentration. Some of these can be linked to local bedrock sources, while others are more likely related to exotic volcanic ash-fall material from Central America deposited on proto-Jamaica in the late Miocene.

1755. **Garrett Robert G., Gerald C. Lalor, and Vutchkov Mitko K.** “Geochemical Exploration for Gold in Jamaica: a Comparison of Stream Sediment and Soil Surveys.” Geochemistry: Exploration, Environment, Analysis 4.2 (2004): 161-70. **Refereed**

The geology of Jamaica is reviewed with reference to gold. Two geochemical surveys, one employing stream sediments for mineral exploration in selected regions of Jamaica considered *a priori* to have greater mineral potential, and the other an island-wide low-density soil survey to meet agro-environmental objectives, were undertaken in 1986 and 1988, respectively. The paper presents an interpretation of the previously unpublished soil data for gold, and undertakes a comparison of the two surveys in terms of their effectiveness for gold exploration. The stream sediment survey (1 site per 1 km²) led to the discovery of three new gold occurrences, one of which became a producing mine in 2001, and the recognition of two previously known auriferous districts. The low-density soil survey (1 site per 64 km²) identified the host rocks of three of these auriferous districts as having gold potential, including those of the producing mine, demonstrating its value as a broad-scale regional mineral reconnaissance tool. Geochemical studies of gold in Jamaica are complicated by the presence of transported palaeo-anomalies, related to Miocene ash-falls, in *terra rossa* soils in karst terrain. The Fe/Na ratio is an index of soil maturity and increases over two-and-a-half orders of magnitude with increasing soil age and maturity. The plotting of Au versus the Fe/Na ratio in soils offers a simple procedure for identifying samples most likely to be related to gold occurrences in bedrock, i.e. high Au and low Fe/Na ratio. It is concluded that in the specific instance of Jamaica's high relief terrain and the apparent limitation of gold occurrences to the Cretaceous Inliers and Eocene



Wagwater Trough underlying those high relief areas, stream sediment sampling is the most effective mineral exploration tool.

1756. **Grant, Charles N., Gerald C. Lalor, and J. E. Thomas.** "Thermoluminescence Dosimetry in the Caribbean." West Indian Medical Journal 52.2 (2003): 118-23. **Refereed**

The results of five years of radiation monitoring of 590 radiation workers in Jamaica and an additional 88 in Barbados and the Turks and Caicos Islands show that the annual dose absorbed by Caribbean radiation workers is, with a single exception, well within the internationally accepted limits of 20 mSv per year. There were few cases of relatively high exposures. The dose equivalent of the radiation workers by category agrees with international trends; workers in nuclear medicine receive the highest doses and dental radiologists the lowest. The collective Effective Dose Equivalent has been calculated for each of the monitored populations and certain trends identified. The risk for development of fatal cancers from the occupational doses reported was very low. Consistent monitoring will identify aberrant conditions quickly and help maintain that record.

1757. **Grant, Charles N., Gerald C. Lalor, and Mitko K. Vutchkov.** "In Situ Gamma Spectroscopy Measurement of ^{41}Ar During Neutron." Health Physics 87.5 (2004): 568-72.

In situ gamma spectroscopy was used to measure ^{41}Ar released into the laboratory due to the activation of air in their radiation tubes of SLOWPOKE reactor during routine neutron activation analysis. The data obtained were used to predict the ^{41}Ar distribution in the laboratory for various operating conditions of the reactor. The dose received by the analyst from the immersion in ^{41}Ar was calculated to be 2.36 m microSv gamma (-1), which is approximately 1 % of the normal background exposure.

1758. **Grant, Charles N., Gerald C Lalor, and Mitko K. Vutchkov.** "Trace Elements in Jamaican Tobacco ." West Indian Medical Journal 53.2 (2004): 66-70. **Refereed**

The concentrations of 28 elements, in hand-made cigars, "rope" tobacco and freshly picked tobacco leaves from the parish of Manchester in central Jamaica, were compared with locally packaged and imported cigarettes and cigar. Except for chromium and vanadium, which are lower in the imported products, the elemental concentrations of all the brands sold in Jamaica are rather similar. The means for aluminum, cadmium, cesium, cerium, chromium, iron, thorium, uranium, vanadium and zinc for the Manchester material exceed the maximum values of the other tobaccos. The significant concentrations of heavy metals, and especially cadmium which is about 50 times that of commercial cigarettes, reflect the known high concentrations in the soils in the region. This tobacco is not filtered and the smoke contains 50 % of the cadmium. This and the concentrations of radioactive elements may indicate an additional health risk compared with commercial cigarettes. A study of three samples of marijuana indicates a similar level of risk from heavy metals.

Hoo Fung, Leslie See 1759

1759. **Howe, Andrea, Leslie Hoo Fung, Gerald C. Lalor, Robin Rattray, and Mitko K. Vutchkov.** "Elemental Composition of Jamaican Foods 1: a Survey of Five Food Crop Categories." Environmental Geochemistry and Health 27.1 (2005): 19-30.

<http://www.environmental-expert.com/Files/6063/articles/5144/X3564X15113K7GT1.pdf>.

The concentrations of 27 elements in Jamaican food categories consisting of fruit, legumes, leafy and root vegetables and other root crops are reported. The main analytical techniques used were neutron activation analysis and flame and graphite furnace atomic absorption spectrophotometry. The results are compared, where possible, with values from Denmark, the United Kingdom, the United States and Nigeria, and with some regulatory limits. Over 75% of the results for antimony, arsenic, barium, cerium, thorium and uranium were below the respective sample detection limits but even among these, some of the maximum values observed indicate that further examination may be useful for those foods grown in the regions of highest uptake and consumed in large amounts. The other elements reported are bromine, cadmium, calcium, caesium, cerium, chromium, copper, europium, hafnium, iron, lanthanum,



lead, magnesium, manganese, phosphorus, potassium, rubidium, scandium, samarium, sodium, strontium, thorium, uranium, and zinc. Many of these elements occur at concentration levels above those reported from the other countries but it seems unlikely that most of these will contribute significantly to public health risk. However, at this stage, cadmium clearly appears to be the element of greatest concern in the Jamaican food chain. The observed range of cadmium concentrations suggests that factors such as land selection, coupled perhaps where necessary, with suitably modified agricultural practices, is a feasible way to reduce the cadmium content of certain local foods.

1760. **Lalor, Gerald C.** “Review of Trace Element Speciation for Environment, Food and Health Edited by L. Ebdon, L. Pitts, R. Cornelis, H. Crews, O.F.X. Donard, Ph. Quevauviller, The Royal Society for Chemistry .” The Science of the Total Environment 309.1 (2003): 265.

1761. **Lalor Gerald C., Percy C. Onianwa, and Mitko K. Vutchkov** “Dry-Ashing Preconcentration for Micro-Reactor-Based Neutron Activation Analysis of Food and Plant Samples .” International Journal of Environmental and Analytical Chemistry 83.5 (2003): 367-74.

The application of preconcentration by dry-ashing to the neutron activation analysis of biological samples using a SLOWPOKE-2 low-power reactor is reported. Samples of selected food crops (banana, callaloo, carrot, mango, and yam) and bioindicator plants (lichen, moss, Tillandsia sp., and tree bark) were analysed both as plant tissue, and as ashed sample. The results are presented for 21 elements. Good agreement between both procedures (<10% relative standard error) was obtained for 13 elements: Al, Ca, Cd, Cr, Fe, K, La, Mg, Mn, Na, Sm, Ti, and V. For Dy, Rb, and Zn the agreement was 10-15%. Relatively poorer agreement (>15-30%) was obtained for As, Br, Cl, and Sb. Dry ashing produced improved analytical results for those samples that were of low ash content. However, the increased background counts observed in ashed samples can sometimes negate the concentration gain, particularly in plants with high ash contents but low levels of certain elements.

1762. **Lalor, Gerald C., Robin Rattray, N. Williams, and P. Wright.** “Cadmium Levels in Kidney and Liver of Jamaicans at Autopsy.” West Indian Medical Journal 53.2 (2004): 76-80. **Refereed**

The cadmium concentrations in the kidneys and livers of 39 autopsy cases in Jamaica, in the age group greater than or equal to 40 years, are renal cortex; range 6.7 -126 mg kg (-1), mean 43.8 mg kg (-1); liver: range 0.3- 24.3 mg kg (-1), mean 5.3mg kg (-1). The mean levels in the renal cortex are higher for women than for men but not so significantly, nor are the differences between smokers and non-smokers clear. The observed values are considered high, second only to Japan where cadmium related health impairments have occurred and are nearly twice as high as the values reported from Austria, Australia, the United Kingdom and Sweden. The Jamaican cases were in areas with relatively low soil-cadmium concentrations, and the corresponding values are likely to be significantly higher in central Jamaica where soil contains unusually high levels of cadmium. An examination of possible contributions of cadmium intake to renal problems in Jamaica now appears to be necessary.

Lalor, Gerald C. See also 822, 1753, 1754, 1755, 1756, 1757, 1758, 1759, 1764

1763. **Preston, John, Gerald C. Lalor, and Mitko K. Vutchkov.** “A Novel Analytical Facility at the Centre for Nuclear Sciences.” [Abstract]. Proceedings of the First Conference of the Faculty of Natural Sciences University of the West Indies, Mona: (University of the West Indies, Mona, Kingston, Jamaica: May 1994) Kingston, Jamaica: Faculty of Natural Sciences, University of the West Indies, Mona.

Preston, John See also 1764



1764. **Vutchkov, Mitko K., John Preston, and Gerald C. Lalor.** "Total Reflection X-Ray Fluorescence - Principle and Applications." [Abstract]. Proceedings of the First Conference of the Faculty of Natural Sciences University of the West Indies, Mona. (University of the West Indies, Mona, Kingston, Jamaica: May 1994) Kingston, Jamaica: Faculty of Natural Sciences, University of the West Indies, Mona.

Vutchkov, Mitko See also 822, 1753, 1755, 1757, 1758, 1759, 1761, 1763

Institute for Caribbean Studies

1765. **Gutzmore, Cecil.** "After Creole Society and Creolisation." Second Conference on Caribbean Culture: In Honour of Kamau Brathwaite. (University of the West Indies, Mona. Kingston, Jamaica: January 9-12, 2002).

Caribbeanists have made the ideas/concepts clustered around the relatively rich common sense notion 'creole' into tools of conceptual analysis and, for some, the objects of a certain quiet regional pride. Here, designated the creole conceptual/ideas cluster, includes the notion creole itself as well as creolisation, creole society, creole culture, creole complex, criollo, créolité. Accounts abound that deal with the origin and development in the Caribbean, and the Americas more generally, of 'creole' populations and the creole languages. Such accounts are to be found in creole language studies, in literary and cultural studies and elsewhere. Few, if any, substantial studies are available that critically trace the introduction and deployment of the concepts/ideas of that culture not just into Caribbean historical discourse of history, sociology, anthropology and archaeology, while seeking seriously to interrogate - as to their conceptual adequacy - these ideas and to explore the intellectual work they have performed.

The extent of historians' borrowings has been one factor contributing to some relatedness between discourses concerned with creole. A text such as Barry Higman's on the concept slave society, his 1998 Elsa Goveia Memorial Lecture, *The Invention of Slave Society*, represents a good, albeit partial, model of what is now manifestly required in relation to Creole and related ideas. The paper will deploy the history of ideas model in a synoptic interrogation of the origins, course, function and conceptual adequacy of the major terms of creole ideas/conceptual cluster as they have inhabited the terrain of Caribbean (historical) studies.

1766. ——. "Casting the First Stone!" Interventions: International Journal of Postcolonial Studies 6.1 (2004): 118-34.

Explores and intervenes against homophobia in the specificities of its manifestation in Jamaican popular and official culture. It leads to an acknowledgement of the verbal, emotional and physical violence of Jamaican homophobia, and a denial that there is any comparative evidential basis that this is its distinguishing feature internationally. The paper locates the distinctiveness of Jamaican homophobia; the peculiar convergence in the public virulence of the anti-homosexuality of both the religious and the secular; popular, as well as of official culture; the unique, near obsessive, anti-homosexuality of the dancehall/ragga deejay genre; the societal violence-proneness and a tendency towards lawlessness. The paper argues for a departure from the condemnatory stance that characterizes challenges to Jamaica's homophobia and, instead, identifies five homophobic imperatives - religious fundamentalism, heterosexual naturalism, legalism, cultural nationalism and child-protection - which are held to drive the discriminatory discourses and practices. The author seeks to initiate the analysis of these imperatives as the basis of a necessary conversation between progressives and homophobes towards the production of a less oppressive cultural and socio-legal atmosphere in Jamaica.

1768. **Niaah, Jalani A.** "Absent Fathers, Garvey's Children and the Back to Africa Movement." Tenth General Assembly of the Council for the Development of Social Science Research in Africa



(Codesria): (Nile International Conference Centre. Kampala, Uganda.: December 8-12, 2002). http://www.codesria.org/Archives/ga10/papers_ga10_12/Diaspora_Niaah.htm.

Focuses on the expression of the idea of Back to Africa by the Rastafarian Movement of Jamaica. Argues that the idea of a return to Africa is a highly significant and often misinterpreted paradigm within the African Diaspora resistance dialogue. Through an examination of selected text brought by Marcus Garvey delineating the notion of “Africa for the Africans at home and abroad”, as well as some of the musical texts addressing the return of the uprooted and scattered children of Africa, namely that of Robert ‘Bob’ Marley, the Movement’s contribution to African world thought will be viewed. Niaah makes an assessment of the conceptualization of Resistance and Liberation paths, by the western trained academic versus the ordinary folk, toward a recommendation of greater collaboration between the two in achieving greater progress toward the advancement of African peoples.

1769. —. “‘Not a Continent For an Island’: Rastafari, Representations and History..” [Abstract]. Conference on Slavery, Islam, and Diaspora: (York University. Toronto, Canada: October 24 - 26, 2003).

1770. —. “Poverty (Lab) Oratory: Rastafari and Cultural Studies.” Cultural Studies 17.6 (2003): 823-42.

The author presents Rastafari Experience in Jamaica as one of the first cultural studies projects. This cultural studies project is located as originating in the 1930s in Kingston and in 1960 within the University College of the West Indies. It is argued that the Rastafari approach was demonstrative of a faculty of cultural studies at work - its members being drawn from a folk scholastic tradition originating from before the Haitian Revolution in 1791. It views the emergence of the Movement in Jamaica, as drawing on a multidisciplinary/trans-disciplinary approach towards the work of engagement and social re-interpretation of Jamaican ‘colonized society’. Poverty (lab) Oratory is thus a reading of the historical framework of the indigenous cultural studies project tracing the ‘process of institutionalization’ in the way Mato views this as the net effect of the English speaking intellectual cultural studies project. It concludes by examining what can be rightfully considered the ‘University’ in light of the role and place of the critical scholastic tradition brought by the folk leadership, in particular, Rastafari.

1771. **Stanley-Niaah, Sonjah N.** “A Common Genealogy: Dancehall, Limbo and the Sacred Performance Space.” Discourses in Dance 2.2 (2004): 9-26.

Looks at dancehall empirically and through the historical lens by situating it within the context of an age old ritual-that has transformed over time. It explores the limitations and potential of performance spaces such as dancehall which are revealed in the way they negotiate with the urban, temporary, policed and nomadic spaces to create transformatory and transcendental ones.

1772. —. “Dancin’ a Jamaica Middle Name: Musical Hegemony in Wake the Town and Tell the People .” PROUDFLESH: A New Afrikan Journal of Culture, Politics and Consciousness 3 (2004). <http://www.proudfleshjournal.com/issue3/niaah.htm>.

(A Review Essay of Wake the Town and Tell the People by Norman C. Stolzoff)

The author’s intention is to show how Stolzoff reinscribes a musical hegemony which abounds in popular culture and cultural studies of music generally. Offers a review of Norman Stolzoff’s Wake the Town and Tell the People.

1773. —. “Dis Slackness Ting: A Review of Dichotomizing Narratives in Jamaican Dancehall .” Thirtieth-Annual Conference of the Caribbean Studies Association: (Santo Domingo, Dominican Republic: May 30 - June 4, 2005).

The author reviews varied representations of Dancehall in some of the existing literature with particular focus on the debates that have occupied writers for the past two decades. These writings have indeed given Dancehall ‘cartographic representation’ and their contribution to the construction of a cultural history and ecology of Dancehall is noteworthy. The paper does not present a historiography of Dancehall music and culture; rather, it reviews and



critiques some of the central debates while advancing an ecological agenda. Most noteworthy is the way slackness has to be understood as a master narrative that has occupied the Dancehall, and that within this debate lies its own destabilization and de-legitimation.

1774. ——. “Kingston’s Dancehall: A Story of Space and Celebration.” *Space and Culture* 7.1 (2004): 102-18. <http://sac.sagepub.com/cgi/reprint/7/1/102>.

From the “limbo” to “Jerry Springer,” Jamaican dance moves have mostly been created in Kingston’s inner city. With select citizenry and spatiality, dancehall-Jamaica’s reggae descendant is a site of collective memory. To contextualize how this urban lifestyle functions, the author provides a brief historical background to the rise of dancehall during the period between 1986 and 2002. She introduces some of the missing stories of dancehall by examining space and bodily performance. Finally, the author assesses the kind of significance the spatiality, temporality, and embodiment of dancehall holds for Kingston’s urban memory.

1775. ——. “Making Space: Kingston’s Dancehall Culture and Its Philosophy of ‘Boundarylessness’.” *African Identities* 2.2 (2004): 117-32.

Like many cultural studies of dance, the media and performance generally, this paper seeks to highlight what is left out of or behind by traditional scholarship on Dancehall culture in Jamaica. The author looks at Dancehall empirically through everyday street events and explores the multiple spatialities negotiated, enacted and instantiated within the context of an age-old ritual but that which has transformed over time. Even as it is transformed it transforms personal and communal spaces. Most importantly the limits and potential of such performance spaces as Dancehall are revealed in the way they are negotiated within the urban, temporary, nomadic, and policed spaces to create transformatory and transcendental ones. By entering Dancehall culture through the arena of ‘the dance’, specifically such celebrations of community as the recently initiated ‘Passa Passa’ event, she examines how the performing body traverses micro and macro geographical scapes in which spaces and selves are continuously made and performed, in spite of the odds, with a philosophy of ‘boundarylessness’.

1776. ——. “Making Space: Reading ‘Limbo’ in Dancehall Performance and Spatiality.” *Ninth Annual Cultural Studies Workshop*: (Bangalore, India: February 2-7, 2004).

The enslaved survived the Middle Passage by their strategies of performance (Harris 1970; Fabre 1999, p. 33-46). Recorded in the ship logs as early as 1664, limbo was a “ritual of rebirth” and is today a dance performing act in the contemporary Caribbean. In particular, it appears in Jamaica’s popular Dancehall culture in 1994. Limbo then, marks memory and continuity within the performance project of the New World. It is a sign; its habitus is the imagination, the arts of the imagination are its products, and it holds keys for understanding Caribbean popular performance. In reading limbo as a gateway (Harris, 1970), liminal in its ‘between and betwixtness’, and a place of (re)creative consciousness, it allows for a shift from purely historical consciousness to other kinds of consciousnesses. These are for example embodied in **performance**, **methodology**, and **spatiality**. First, the slave ship, just like downtown Kingston or Laventille from where Dancehall and Steel Band cultures have respectively come, produced particular brands of performance. By performance, the author is referring to movement, the drama, the cultural work of enacting one’s identity through ritualised remembering. Secondly, these spaces are bound up with a methodology some have named “creative use of...schizophrenia” which results from the synthesis/tensions of old and new worlds. Thirdly, being performed on the slave ships where hardly enough space was available for this ritual, limbo focuses the issue and crisis of space, at the empirical level and within critical discourse. Transporting the enslaved for such a long journey in limited space necessitated ‘exercise’ to keep them alive. Performance was a requirement for life; it pushed the boundaries of limitation to avail spaces of liberation from oppression and dislocation, even as these spaces were limited, liminal and often nomadic.

1777. ——. “Mapping Kingston’s Dancehall Spaces: Toward a Performance Geography of the Kingston Metropolitan Area.” *Brown Bag Seminar*: (Department of Geography. University of the West Indies, Mona: February 10, 2005).

While it is acknowledged that dance/hall described the space or hall or lawn in which dance events occurred, little



attention has been paid to the spatial nuance implied in this name. While early venues have been acknowledged, no systematic investigation of venues, their location, use and politicization, has been attempted. This paper summarizes aspects of the research on micro-spatialities of urban Kingston's Dancehall performance that the author has been engaged in over the last five years. She focuses on delineating a typology of urban venues, and the centrality of specific urban locations to Dancehall, in particular, the move away from central, east and west downtown Kingston venues to Halfway Tree as a contemporary Dancehall 'crossroads'. In this sense, mapping of these performance spaces is seen as a route to expanding perspectives in urban and cultural geography, performance and cultural studies to begin delineating what is best captured by the term 'performance geography'. Performance geography develops on definitions of cultural geography and performance studies to look at the way people living in particular locations give those locations identity through performance practices. More specifically, she posits that the mapping of the locations used, types and systems of use, politics of their location in relation to other sites and other practices, the character of events / rituals in particular locations, and how different performances / performers relate to each other within and across different cultures.

1778. ——. "Ritual and Community in Dancehall Performance ." Festivals and Events: Beyond Economic Impacts. (Napier University. Edinburgh, Scotland: July 6-8, 2005).

(A version of this paper was presented at the Sixteenth All African Students Conference, University of the West Indies, Mona. May 20-22, 2004.)

What is the nature of Dancehall performance? Can a Turnerian framework be used to illuminate its complexity? Using data from participant observation and interviews, the perspective in this paper moves the discourse on Dancehall beyond superficial understanding of 'resistance' and 'carnavalesque' space as analytical categories to sacred geographies in which events and lifestyles merge. Life-cycle and seasonal events including celebrations of birth, death, community, anniversary, victory and relationships reveal the ritual significance of Dancehall's performance practice creating a map that invokes Turner's concepts of 'communitas' and 'liminality'. It is these concepts that are ultimately given renewed significance, not in a hegemonic sense that privileges the ritual of the 'natives', but through critical examination in a context of the tensions of an everyday occupied by ordinary folk who have consistently called attention to their practices by virtue of its power. This is a power to perform being, constitute new forms of community, entice international audiences, and transform self and identities. This author engages this quotidian postcolonial culture of celebration as a status-granting institution, a liminal field that recreates itself by virtue of its marginal creative ethos.

1779. **Stanley-Niaah, Sonjah N., and Jalani A. Niaah.** "Ace of the Dancehall Sound Space: U-Roy's Version, Subversion and Extraversion ." Caribbean Soundscapes: A Conference on Caribbean Music and Culture. (Tulane University. Homewood Suites by Hilton. New Orleans, Louisiana: March 12-13, 2004).

No history of the development of the sound system, of DJs or indigenous Jamaican popular music can be told without reference to stalwart DJs such as Count Matchukie, King Stit and U Roy. Using select verses of DJ U Roy as tropes, this paper seeks to define the DJ's 'sound space' as an autonomous entity that "ruled the nation" without knowing how it happened. The method by which this was achieved was the subversive versioning that the DJ added to the musical arena that undermined the influence of, and won appeal from polite society. The musical laboratory or sound space gave credence to the artistry and culture of those persons considered as the under class. It is this laboratory or multi-layered sound space that is ultimately demarcated based on data collection from interviews, secondary sources and participant observation.



Mona School of Business

1780. **Carr, Mardene R.** “An Analysis of the Feasibility of a Paperless Environment - the Case of the Mona School of Business.” Management of Environmental Quality: An International Journal 16.4 (2005). 286-290

Purpose: To show how the Mona School of Business, University of the West Indies, Jamaica can move towards a less paper environment. **Design/methodology/approach:** A literature review as well as questionnaire was used, with the questionnaire being the primary research tool. The articles for the Literature Review ranged from 1999-2003 and were looked at to give a general idea of what is currently being published on the subject. The questionnaire was administered among all levels of staff and structured so as to get feedback as to how best the less paper environment could be incorporated into the organization. **Findings:** Most members of staff were familiar with the concept of the less paper environment and were convinced that this could be a positive move for the organization.

Originality/value: The paper provided ground work for the Mona School of Business to transform the organization into a less paper environment.

Carr, Mardene R. See also 127

1781. **Ying, Neville.** “Transformational Forces: Signals for Caribbean Institutions of Higher Education and Their Managers.” Association of Higher Education Administrators (ACHEA) Conference: (Trinidad: July 2002).

This paper analyses the impact of globalisation on Higher Education (HE). It sheds light on what must be done to facilitate a competitive HE programme dictated by the forces of globalisation.

Natural Products Institute

1782. **Delgoda, Rupika.** “Structural Studies of Drug Metabolising Enzymes and the Relevance to Natural Products Development.” Novel Compounds From Natural Products in the New Millennium. Potential and Challenges. Editors Benny K. H. Tan, Boon-Huat Bay, and Yi-Zhun Zhu. Singapore: Scientific Publishing Company Limited, 2004. 30-39.

1783. **Delgoda, Rupika, and Periathamby Agamuthu.** “Utilization and Management of Agricultural and Agro-Industrial Waste.” (2003): 145.

1784. **Delgoda, Rupika, C. Ellington, S. Barrett, N. Gordon, N. Clarke, and Novie O. Younger.** “The Practice of Polypharmacy Involving Herbal and Prescription Medicines in the Treatment of Diabetes Mellitus, Hypertension and Gastrointestinal Disorders in Jamaica.” West Indian Medical Journal 53.6 (2004): 400-05. **Refereed**

The interference in the metabolism of a drug by another drug, food or other foreign chemical is commonly observed and often leads to clinically significant adverse drug reactions. In Jamaica, there is an extensive use of natural products as medicines, although there is little information on whether natural medicines used along with prescription medicines, might increase the likelihood of drug adversities. This pilot survey was initiated to gain information on the prevalence of such polypharmacy practices. Two concurrent surveys were carried out in Kingston (an urban parish) and Clarendon (a rural parish) in 743 patients above age 14 years with diabetes mellitus, hypertension and gastrointestinal disorders. Patrons visiting these places at various times of the day were informed of the nature of the questionnaire and willing participants with the above disease conditions and who were on prescription medicines



were included in the survey. The results indicated that 80% of the respondents reported combining natural products in their treatment along with prescription medicines, with only 13% of those patients informing their physicians of such practices. Such polypharmacy practices were independent of the type of disease among both males and females and were statistically most prevalent ($p < 0.001$) in the age group, 47-57-years. There was a significant association ($p < 0.001$) between such treatment practices and place of residence with 92% of the rural community and 70% of the urban engaging in polypharmacy. Awareness of the prevalence of multiple therapy practices would be especially useful when designing a pharmaco-vigilance system.

1785. **Delgoda, Rupika, Lu-Yun Lian, James Sandy, and Edith Sim.** "NMR Investigation of the Catalytic Mechanism of Arylamine N-Acetyltransferases From *Salmonella Typhimurium*."

Biochemica Et Biophysica Acta 1620 (2003): 8-14. www.sciencedirect.com. **Refereed**

Arylamine N-acetyltransferases (NAT) are a family of enzymes found in both eucaryotes and procaryotes, which catalyse the N-acetylation of a range of arylamine and hydrazine drugs and carcinogenic arylamines, using acetyl coenzyme A as a cofactor. Here we describe a nuclear magnetic resonance (NMR) investigation of the interaction of substrates with *Salmonella typhimurium* NAT. For solution NMR investigations, pure recombinant NAT from *S. typhimurium* was used at up to 0.1 mM. We demonstrate that a hydrazine substrate, isoniazid (INH), binds to the protein in the absence of the cofactor, acetyl CoA, and thereby suggest that even though the catalysis may follow a ping-pong pathway, ligand-enzyme interactions can occur in the absence of acetyl CoA.

1786. **Delgoda, Rupika, and Andrew C. Westlake.** "Herbal Interactions Involving Cytochrome P450 Enzymes: A Mini Review." Toxicol Review 23.4 (2004): 239-49.

The metabolism of a drug can be altered by another drug or foreign chemical, and such interactions can often be clinically significant. Cytochrome P450 (CYP) enzymes, a superfamily of enzymes found mainly in the liver, are involved in the metabolism of a plethora of xenobiotics and have been shown to be involved in numerous interactions between drugs and food, herbs and other drugs. The observed induction and inhibition of CYP enzymes by natural products in the presence of a prescribed drug has (among other reasons) led to the general acceptance that natural therapies can have adverse effects, contrary to the popular beliefs in countries where there is an active practice of ethnomedicine. Herbal medicines such as St. John's wort, garlic, piperine, ginseng, and ginkgo, which are freely available over the counter, have given rise to serious clinical interactions when co-administered with prescription medicines. Such adversities have spurred various pre-clinical and in vitro investigations on a series of other herbal remedies, with their clinical relevance remaining to be established. Although the presence of numerous active ingredients in herbal medicines, foods and dietary supplements complicate experimentation, the observable interactions with CYP enzymes warrant systematic studies, so that metabolism-based interactions can be predicted and avoided more readily. This article highlights the involvement of CYP enzymes in metabolism-related drug-herb interactions and the importance of gaining a mechanism-based understanding to avoid potential adverse drug reactions, in addition to outlining other contributory factors, such as pharmacogenetics and recreational habits that may compound this important health issue.

1787. **Mansingh, Ajai.** "Limitations of Natural Pesticides: A Challenge to Scientists." Novel Compounds From Natural Products in the New Millennium: Potential and Challenges. Editors Benny K. H. Tan, Boon-Huat Bay, and Yi-Zhun Zhu. Singapore: Scientific Publishing Company Limited, 2004. 87-106.

1788. **Mansingh, Ajai, Dwight E. Robinson, and Kathy Dalip.** "Use, Fate and Ecotoxicity of Pesticides in Jamaica and the Commonwealth Caribbean." Pesticide Residues in Coastal Tropical Ecosystems. Editors M. D. Taylor, S. J. Klaine, F. P. Carvalho, D. Barcelo, and J. Everaarts. New York: Taylor and Francis, 2003. 425-63.

Mansingh, Ajai

See also 128, 1188, 1189, 1795



1789. **McLaren, K. P., and M. McDonald.** “Coppice Regrowth in a Disturbed Tropical Dry Limestone Forest in Jamaica.” Forest Ecology and Management 180 (2003): 99-111. **Refereed**

1790. **McLaren, K. P., and McDonald M.** “The Effects of Light and Moisture on Seed Germination and Seedling Survival in a Tropical Dry Forest in Jamaica.” Forest Ecology and Management 183.1-3 (2003): 61-75. **Refereed**

The effects of light and moisture on the early establishment of four canopy tree seedlings were studied from October 1999 to August 2000. The study was undertaken in a primary dry forest in the Hellshire Hills protected area, Jamaica with rainfall for the year totaling 650 mm most of which fell during the 6-month long rainy season. Seeds of *Calyptanthes pallens*, *Eugenia* sp., *Hypelate trifolia* and *Metopium brownii* were collected 1 month prior to the peak in the rainy season and planted in a nursery constructed within a cleared area of the forest according to a split-plot design which consisted of three blocks each containing three main treatment plots (no shading, partial shading and heavy shading) with each main plot being sub-divided into two sub-plots (regular watering and no watering). Seedling germination was prompt with shading having a more positive significant effect on seed germination than watering. Seedling mortality was high during the dry season particularly after the first month following a significant reduction in rainfall but seedling survival stabilised at the start of the wet season. Seedling survival was lower in unshaded than shaded plots and in the shaded plots, survival was lower in partially shaded plots than in heavily shaded plots. Water supplement prolonged the survival of all individuals regardless of shading. Seedling size was positively affected by shading with seedlings within the partially shaded plots attaining the highest basal diameter while seedlings in the heavily shaded plots were the tallest. Water supplement also positively affected seedling size. High light levels during the wet period improved seedling growth but significantly increased seedling mortality during the dry season for all species. With respect to seedling response, *M. brownii* had the highest germination percentage and production but was most sensitive to drought. *C. pallens* had the highest survival and produced the smallest individuals. However, *Eugenia* sp. had the highest number of seedlings surviving at the end of the experimental period, and showed the lowest drought sensitivity.

1791. ——. “Seedling Dynamics After Different Intensities of Disturbance in a Tropical Dry Limestone Forest in Jamaica .” Journal of Tropical Ecology 19 (2003): 567-78. **Refereed**

1793. **Rhone, Victor Hugo.** “Research and Development of Natural Products in Developing Countries: Need for Venture Capital.” Novel Compounds From Natural Products in the New Millennium. Potential and Challenges. Editors Benny K. H. Tan, Boon-Huat Bay, and Yi-Zhun Zhu. Singapore: Scientific Publishing Company Limited, 2004 . 302-11.

1795. **Wilson, Arlene, and Ajai Mansingh.** “Bioactivity of Hexane Extract of *Blighia Sapida* Konig on the Cattle Tick, *Boophilus Microplus* and the Sweet Potato Weevil, *Cylas Formicarius* *Elegantulus*.” Novel Compounds From Natural Products in the New Millennium: Potential and Challenges. Editors Benny K. H. Tan, Boon-Huat Bay, and Yi-Zhun Zhu. Singapore: Scientific Publishing Company Limited, 2004. 107-11.

1796. **Yee, Trevor Herbert.** “The Bio-Extraction Industry in Jamaica: Potential and Challenges.” Novel Compounds From Natural Products in the New Millennium: Potential and Challenges. Editors Benny K-H. Tan, Boon-Huat Bay, and Yi-Zhun Zhu. Singapore: World Scientific Publishing, 2004. 20-29.



Sir Arthur Lewis Institute of Social and Economic Studies

1797. **Crichlow, Michaeline, and Patricia Northover.** “Making Modern S/Subjects-Sketch of a Method of Theorising ‘C/Creolization ‘ in Atlantic History in Under- Labouring for a Progressive Politics of ‘Fleeing the Plantation’..” [Abstract]. Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth: (Jamaica Pegasus Hotel. Kingston, Jamaica: March 16-18, 2005).

1798. **Duncan, Neville C.** “Caribbean Governance: Solving the St. Kitts-Nevis Dilemma and the Caribbean-Atlantic Wide Participation Conundrum..” [Abstract]. Caribbean Imperatives: Regional Governance and Integrated Development. Editor Kenneth O. Hall and Denis Benn. Kingston: Ian Randle Publishers, 2005

1799. —. “Changing World Architecture and Its Impact on Growth and Development Opportunities for Caribbean States: Socio-Political Perspectives. [Abstract].” Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth: (Jamaica Pegasus Hotel. Kingston, Jamaica: March 16-18, 2005).

1800. —. “Governance in Small Societies: The Importance of Strong Democracy.” Governance in the Age of Globalisation: Caribbean Perspective. Editors Denis Benn and Kenneth O. Hall. Kingston, Jamaica: Ian Randle, 2003. 164-74.

This chapter identifies the major challenges to governance in small societies as majority acquiescence, apathy and distraction and little interest group domination of the political and economic process. The author posits that creativity and inventiveness are required in order to construct a new legitimate order of state relations. He also states that a new conception of governance would need to be based on increased political education in order to ensure grassroots responsiveness and preparation for participation in the system.

1801. —. “People Dimensions of the CSME: Social and Political Aspects.” Fifth Annual Conference Sir Arthur Lewis Institute for Social and Economic Research: The CARICOM Single Market and Economy: Legal, Political, Economic and Social Dimensions: (University of the West Indies. St. Augustine, Trinidad: 31 March - 1 April, 2004).

1802. —. “Radicalism and Caribbean Transformation.” Independent Thought and Caribbean Freedom: Essays in Honour of Lloyd Best. Editor Selwyn Ryan. St. Augustine, Trinidad and Tobago: Sir Arthur Lewis Institute of Social and Economic Studies, 2003. 163-74.

1803. —. “Radicalism in Caribbean Transformation .” Independent Thought and Caribbean Freedom Testimonial: Conference in Honour of Lloyd Best: (University of the West Indies. St. Augustine, Trinidad: 2002).

1804. **Henry-Lee, Aldrie.** “Children of Convicted Drug Mules: Do They Have Rights Too?” “Third International Crime and Criminal Justice Conference in the Caribbean: (University of the West Indies, Mona. Kingston, Jamaica and Renaissance Jamaica Grande. Ocho Rios, Jamaica : February 11-14, 2004).



1805. —. “Convergence or Exclusivity: The Lewis Model and the Rights Based Approach to Development..” [Abstract]. Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth. (Jamaica Pegasus Hotel. Kingston, Jamaica: March 16-18, 2005).

1806. —. “Economic Deprivation and Private Adjustments: The Case of Security Guards in Jamaica.” Social and Economic Studies 51.4 (2002): 181-209. **Refereed**

The provision of paid labour is considered an essential strategy for poverty reduction. This paper argues that paid labour with low wages does not reduce an individual’s vulnerability and susceptibility to life below the poverty line. Using a vulnerability-assets framework, the author examines the quality of life and living conditions of security guards in Jamaica. An asset is not enough to reduce one’s vulnerability. The quality of the asset owned is even more important. For example, a significant number of security guards owned their houses, but the quality of the house was questionable. Most of them had very poor houses in crime-ridden areas. All the assets put forward by the “vulnerability framework” did not share equal value. For example, the security guards emphasized the need for health insurance and private transportation. The qualitative data revealed that these low-wage earners are economically deprived and have to employ many private strategies to reduce their vulnerability. A most significant finding, was the low dependence on the state and the importance of their own social networks in their poverty alleviation. Social capital and social networking proved to be key in coping with their vulnerability.

1807. —. “Implications for Social Service Delivery in a Weak Social Policy Environment .” Regional Conference on A New Perspective on Poverty in the Caribbean: A Qualitative Approach : (Accra Beach Hotel. Barbados: June 5-6, 2004).

[http://www.caribank.org/SERU.nsf/leepres/\\$File/AldriesBarbadospaper.pdf?OpenElement](http://www.caribank.org/SERU.nsf/leepres/$File/AldriesBarbadospaper.pdf?OpenElement).

During the recent decades, the Caribbean region has experienced significant social gains. Improved life expectancy, reductions in infant and maternal mortality, control of infectious diseases and improved level of access to education are some of our significant achievements. However, neo-liberal globalization presents several challenges to small vulnerable economies. With a few exceptions, there has been a rise in income inequality and vulnerability. The growing exposure to global economic forces, requires “*strong shock absorbers*” and the development of resilient national social policy environments. There have been some efforts to shift from residualism to targeting of vulnerable groups but the current social policy environment does not ensure sustained social development. Indeed, the social gains acquired in the last decade may be irretrievably lost to us. Levels of effectiveness and efficiency in the social service delivery system need much improvement and at present bear little relationship to the levels of public expenditure. This paper examines the implications for social service delivery in a weak social policy environment. The extent to which an enabling environment for the effective and efficient delivery of social services currently exists in the Caribbean is considered. The specific features that make it difficult for the social sectors to create and maintain effective delivery systems are discussed. Issues of quality of access, equity, social dialogue, accountability, democratic and participatory governance are shown to be relevant to the formulation and implementation of social policy. Challenges to the creation of a strong social policy environment are also presented. The paper concludes that social policy is a key instrument that must work in tandem with economic policy in order to ensure equitable and sustainable development.

1808. —. “The Nature of Poverty in the Garrison Constituencies in Jamaica.” Environment and Urbanization 17.2 (2005): 83-100. <http://eau.sagepub.com/cgi/reprint/17/2/83>. **Refereed**

In 2001, 16.9 per cent of the population in Jamaica was living in poverty, down from 30.5 per cent in 1989. Jamaica is well on its way to achieving the first Millennium Development Goal of halving by 2015 the number of persons living in extreme poverty. However, policy makers are particularly concerned about the persistent high levels of poverty in the rural areas. This paper argues that although the incidence of urban poverty has been consistently lower than that of rural poverty, there are certain urban areas that warrant special policy attention. In spite of a reduction in poverty at the macro level in these “garrison constituencies”, the quality of life for the residents has not improved



significantly, and any sustained improvement will be extremely difficult given the quality of their political and social capital. There has been no sustained political will to dismantle these garrison constituencies, and everyday life is deeply entrenched in crime, violence and political patronage. Unless there are deliberate and well-targeted policies to dismantle these constituencies and break the stranglehold that the political and criminal elements have on the residents, then they will never experience any sustained improvement in their quality of life.

1809. —. “Poverty Eradication and the CSME.” [Abstract]. Fifth Annual Conference Sir Arthur Lewis Institute for Social and Economic Research: The CARICOM Single Market and Economy: Legal, Political, Economic and Social Dimensions: (University of the West Indies. St. Augustine, Trinidad: 31 March - 1 April, 2004).

1810. **Henry-Lee, Aldrie, Wilma R. Bailey, and Clement Branche.** “Conflict, Gender Relations and the Health of Women in Two Low Income Communities In Jamaica .” Social and Economic Patterning of Health Among Women. Editor Sara Arber and Myriam Khlat. Paris: CICRED, 2003. 357-74. <http://www.cicred.org/Eng/Publications/Books/TunisHealthWomen/TunisHenrylee.pdf>. (Also presented at the Seminar on Social and Economic Patterning of Health among Women. Tunis. January 17-20, 2000.)

Examines the conflict, gender relations and health of women in two low income communities in Jamaica. To provide a contextual framework, crime and domestic violence were also examined at the macro-level. The national data showed that although most types of crime were on the decrease, violence against women did not reflect the same pattern. Primary data were also collected from 96 individuals in the two lower inner cities. The respondents were chosen by change agents, who were taught conflict resolution skills and were to transmit these skills to the respondents. Approximately 75 per cent of these 96 individuals were involved in conflict during the past three months. Women were more likely to be the recipients of physical abuse. The reasons for this abuse were discussed in five case studies involving domestic violence. This abuse however, has to be understood in relation to gender identities and relationships, and the struggles of status-deprived males who are trying to contend with the exigencies and limits of inner-city conditions. Whenever there is evidence of gender inequality and male marginalization, the health of women is likely to be negatively affected. Both national and community data indicate there are serious problems related to violence in Jamaica and the physical abuse of women.

1811. **Henry-Lee, Aldrie, and J. P. Figueroa.** “Research and Policy: Essential National Health Research in Jamaica W.I.” Caribbean Journal of Public Sector Management 4.1 (2002): 85-102. **Refereed**

Assesses the Essential National Health Research (ENHR) initiative undertaken by the Government of Jamaica since its introduction in Jamaica in 1995. The prospects and challenges involved in the implementation of the ENHR are examined. The authors present a background to the emergence of the strategy, along with the key considerations that went into its adoption. Additionally, a re-analysis was undertaken of the data collected on major health institutions by the ENHR Task Force in 1996.

1812. **Henry-Lee, Aldrie, and Elsie Le Franc.** “Private Poverty and Gender in Guyana and Barbados.” Social and Economic Studies 51.4 (2002): 1-30. **Refereed**

Much of the literature speaks to the “feminization of poverty”. The plight of women and their continued disadvantage still remain on the international agenda. This paper contributes to the debate by looking at the relationship between private poverty and gender in Guyana and Barbados. Using data from the country poverty assessments carried out in the two countries, the importance of gender is determined. To provide more in-depth analysis of the issue, three poverty lines are estimated: the Food-Only Line, the Food-Plus Line and the Extreme Poverty Line. The results from the regression analyses show that the gender of the head of household was not as significant as expected. The “gender factor” was at best uncertain and it was the investment in human capital (education) more than gender that determined an individual’s placement on or below the poverty lines.



Henry-Lee, Aldrie See also 1093

1813. **Karagiannis, Nikolaos.** "Alternative Development Policy for the Caribbean: The Challenge of the Developmental State Approach ." Journal of Eastern Caribbean Studies 27.1 (2002):18-47. Discusses community tourism and its implications for holistic sustainable development of the tourism industry. The efforts of countries such as Belize, Dominica and Guyana towards alternative forms of tourism (eco-agro- and community tourism) are highlighted. The author also addresses means of advancing towards the ultimate goal of sustainable tourism.

1814. ——. "An Alternative Development Policy Framework for the Caribbean." Pensamiento Propio 15 (2002): 107-42.

1815. ——. "Dependence, Cumulative Causation and the Caribbean." The Caribbean Economies in an Era of Free Trade. Editor Nikolaos Karagiannis. Aldershot, England: Ashgate Publishing, 2004. 3-22.

Provides the main theoretical approaches to regional development and trade. It also evaluates these theoretical views while taking reality into consideration. The final section provides notions of an alternative development policy framework while considering structural and functional problems.

1816. ——. Development Policy and the State: The European Union, East Asia and the Caribbean. Lanham, Maryland: Lexington Books, 2002. 203p.

1817. ——. "Developmental Intervention: A Contemporary Perspective." Caribbean Journal of Public Sector Management 4.1 (2002): 5-16.

<http://www.cfeps.org/events/pk2002/confpapers/karagiannis.pdf>. **Refereed**

(Also presented at the Seventh International Post-Keynesian conference in Kansas City, Missouri, June 29 - July 3, 2002)

Discusses important economic and politico-institutional features of the 'desirable' developmental intervention. The author begins by critically evaluating and illustrating the current orthodoxy by asserting a 'Geisha model' of the state. He goes on to examine an institutional system which appears to have been used with enormous success, the 'Developmental state': the case of the state which takes on a central developmental role in the economy without directly owning most of the productive assets. The final section pursues aspects of the modern developmental intervention (upon which a 'progressive' state-led development policy framework can build).

1818. ——. "Key Economic and Politico-Institutional Elements of Modern Interventionism." Social and Economic Studies 50.4 (2002): 17-47. **Refereed**

This paper discusses important economic and politico-institutional features of 'desirable' modern state intervention. It is recognised that the public sectors of most countries have undergone major changes since the 1980's, as governments try to respond to the challenges of the new millennium. Recent years have seen wider-ranging reforms than any other period of the twentieth century, although both the pace and extent of these reforms are greater in some countries than in others. This represents a paradigm shift from the 'traditional' model of public administration, dominant for most of the century, to 'new' public management. The first section of the paper discusses the 'era of change' while considering the changing role of government. The second examines an institutional system which appears to have been used with enormous success - the 'Development State' - the case of the state which takes on a central developmental role in the economy without directly owning most of the productive assets. The final sections pursue aspects of the 'Development State' model and deal with 'key' elements of the 'desirable' modern state and its new role.



1819. —. A New Economic Strategy for the Bahamas. Mona, Jamaica: University of the West Indies Printers, 2002. 100p.

1820. —. “Political Economy Aspects of a Developmental State Framework for the Bahamas.” Caribbean Quarterly 50.3 (2004). **Refereed**

The author hypothesizes that particular conditions in the Bahamian economic culture have led to tourism being seen as an economic activity capable of creating income and jobs for the country’s inhabitants and earning important foreign exchange, but not as one of the most dynamic sectors for its future economic development. He argues that tourism has further subjected the Bahamas to outside dependence. He concludes by identifying key strategic requirements and offering alternative policy recommendations.

1821. —. “Tobin Tax: Its Potential and Feasibility for the Caribbean.” IDEAZ 1.2 (2002). **Refereed**

1822. —. “Tourism and Economic Development in the Caribbean and Jamaica: Towards an Alternative Developmental State Framework.” Tourism and Change in the Caribbean and Latin America. Editors Ian Boxill, Orville W. Taylor, and Johannes Maerk. Kingston, Jamaica: Arawak, 2002. 39-55.

Summarizes the historical development of the tourism industry in the Caribbean region. Analyses the sector according to its principal characteristics and sets tourism in the context of economic development. Discusses the potential for tourism growth in Jamaica on the grounds of endogenous growth, competency and competitiveness.

1823. —. “Tourism, Linkages, and Economic Development in Jamaica .” International Journal of Contemporary Hospitality Management 15.3 (2003).

This article offers, briefly, a production-oriented development framework for Jamaica, based on growth-promoting linkages between tourism, commodity production sectors, and complementary and related service industries. These linkages can boost the Jamaican endogenous competency and industrial competitiveness, while improving the country’s macroeconomic performance. Alternative development policy considerations are also within the scope of this article.

1824. —. “Towards a Caribbean Developmental State Framework.” Fourth Annual Sir Arthur Lewis Institute for Social and Economic Research Conference: Development Strategy and Policy for Small States in the Context of Global Change. (Barbados: January 15 - 17, 2003).

[http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/\\$FILE/Doc13.pdf](http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/$FILE/Doc13.pdf).

This paper seeks to provide a Caribbean Developmental State framework. It is recognised that the public sectors of many countries have undergone changes since the 1980s, as governments try to respond to the challenges of the new millennium. Recent years have seen wider-ranging reforms than any other period of the 20th century, although both the pace and extent of these reforms are greater in some countries than in others. Thus, states require an alternative. They need to have strong policy instruments which will enable them to plan and finance their strategic goals such as job creation, higher mass living standards, R&D, industrial competency, environmental protection, etc. This re-tooling of state policy-making requires a re-thinking of the form of government intervention and, especially, an emphasis on its ‘modern’ developmental role. This is a crucial challenge today facing countries in general, and Caribbean islands in particular. The argument of this paper is as follows. The first part summarises past development efforts in the Caribbean. The second section examines an institutional system which appears to have been used with enormous success but, unfortunately, has been neglected in the region—the “Developmental State”: the case of state which takes on a central developmental role in the economy without directly owning most of the productive assets. The third section seeks to chart the “Caribbean” Developmental State framework. The final part of the paper identifies key strategic requirements and offers alternative policy recommendations, which the Developmental State approach implies and suggests.



1825. **Karagiannis, Nikolaos, and Dillon Alleyne.** Economic Strategy for Jamaica. Kingston, Jamaica: Arawak, 2003. 100p.

1826. **Karagiannis, Nikolaos, and Michael Witter,** Editor. The Caribbean Economies in an Era of Free Trade. Aldershot, England: Ashgate Publishing, 2004.

This book is concerned with the impact of economic globalization and an unregulated global market system on Caribbean economies. Part I examines theoretical issues and includes an assessment of recent globalization trends, the limits of globalization, and the question of uneven development. Part II considers alternative policy solutions including interventionist alternatives, effective monetary strategies and innovative tourism strategies. Part III focuses on Jamaica and the Bahamas. Overall, it provides a rich menu for alternative economic policies in the Caribbean at the turn of the century.

Karagiannis, Nikolaos P. See also 1295, 1300, 1327, 1353, 1616

1827. **Lewis, Patsy.** “Grenada: A Testing Ground for Development Perspectives.” Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth. (Jamaica Pegasus Hotel. Kingston, Jamaica : March 17-18, 2005).

The practical collapse of the Grenadian economy and the widespread damage to property experienced by most Grenadians after Hurricane Ivan, presents an unusual situation for testing theoretical perspectives on economic development in small states. It is rare that a natural disaster has such a totalizing effect on economic, social and political life as was experienced in Grenada and, before it, Montserrat, after its volcanic eruption. This paper proposes to revisit Arthur Lewis’ theoretical perspectives on economic growth and development, particularly against attempts to take a fresh look at the challenges of economic development in small states, reflected in attempts to introduce the element of environment vulnerability, to already established notions of economic vulnerability. The paper, which represents an initial foray into what is meant to be a broader analysis of post-hurricane Ivan and the challenges it presents to Grenada’s development, raises more questions than it answers. Specifically, it treats the collapse of tourism and export crops (cocoa and nutmeg) as *tabula rasa* for constructing a new kind of economic platform. It raises questions as to whether it is possible, whatever the economic model chosen, for a small state to survive a natural disaster on the scale of Hurricane Ivan; what opportunities and challenges such a disaster provides for reconstructing a more ‘modern’ economy; what is the interrelationship between economics and politics in terms of who would define such a model and what implications this has for democracy; and, what is likely to be the role of the global economic institutions in determining the new face of the Grenadian economy.

1828. ——. “Is the Goal of Regional Integration Still Relevant Among Small States? The Case of the OECS and CARICOM.” Living at the Borderlines: Issues in Caribbean Sovereignty and Development. Editors Cynthia Barrow-Giles and Don D. Marshall. 2003. 325-52.

(Also published as: *La integración regional es todavía un objetivo adecuado para los Estados Pequeños? Los Casos de la OECS (Organización de los Estados del Caribe Oriental) y del CARICOM (Comunidad del Caribe).* In Retos E Interrelaciones de La Integración Regional Europa y América edited by Joaquín Roy, Roberto Domínguez Rivera, Rafael Velásquez Flores. Plaza y Valdés: University of Miami, 2003. Pages 317-344.)

This chapter focuses on the experiences of the OECS, a sub-regional grouping within the CARICOM regional integration scheme, in an effort to highlight some of the challenges confronting microstates in the regional integration process. It examines the extent to which the shift in the theoretical underpinnings and goals of regional integration processes in the 1960s and 1970s, from the creation of protected markets among countries of like size and resource endowment which affords no privileges to small size, has undermined the viability of the OECS and ultimately, CARICOM itself. Specifically, it questions whether this shift has derailed the process in the Caribbean



region; whether it is worthwhile for such schemes to continue to focus on economic goals over political processes; and whether the OECS experience does not mirror the future of CARICOM.

1829. —. “Negotiating With Unequal Partners: Small States in the New Global Economy .” Paper Presented at Foundation for Development Cooperation Development Research Symposium South Pacific Futures: (Women’s College. University of Queensland. Queensland, Australia: 24 July 2002).

[http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/\\$FILE/Doc3.pdf](http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/$FILE/Doc3.pdf).

The author examines the trend of the development of regional integration schemes that embrace states of vastly differing resource endowments and stages of economic development. He discusses the challenges small states confront in managing these negotiating processes, especially in relation to human resources and in articulating a convincing case for recognition of differences arising from small size and lower levels resources. It presents the Commonwealth Caribbean and the difficulties it faces in negotiating, within the same time period, its participation in the Free Trade Areas of the Americas (FTAA), reciprocal economic partnership agreements with the EU, and a host of bi-lateral arrangements with countries within Latin America, as a case study of these issues. The author argues that, despite attempts to present a regional platform for these negotiations, in the establishment of the Regional Negotiating Machinery (RNM), there is yet to be developed a well-defined vision of the special needs of these countries, reflected in a consistent approach to these various arrangements. The paper also addresses the need for consultation with growth that stand to be affected, and the ways in which such consultation had been attempted. While the paper draws heavily on the experiences of the Commonwealth Caribbean, its insights hold for other small states, including those of the South Pacific who are also negotiating free trade arrangements with larger regional states.

1830. —. “Trade and Development: An Assessment of the Development Potential of the FTAA and EPA for Small Developing States.” Re-Mapping the Americas: Globalisation, Regionalisation and the FTAA: (University of the West Indies. St. Augustine, Trinidad.: October 19-21, 2005). (Conference co-hosted by University of the West Indies, St. Augustine and the University of Alberta.)

This paper seeks to present an analytical assessment of the Free Trade Area of the Americas (FTAA) draft agreement and Economic Partnership Agreements (EPAs), as reflected in the Cotonou Partnership Agreement and in EPA negotiations, to date, to assess the potential they offer for addressing the development goals of developing countries as a group, and small states in particular. It aims to make concrete suggestions as to how these arrangements would need, either to be adjusted or crafted, to meet such goals. In doing this it will seek to engage in the literature on development, to suggest what a development agenda for small states should look like based on their social, economic and political specificities, and their experiences in the early post-independence periods.

1831. —. “Unequal Negotiations: Small States in the New Global Economy.” Journal of Eastern Caribbean Studies 30.1 (2005): 54-107.

This article looks at the emerging phenomenon of free trade agreements between developing and developed countries. Its particular focus is on a sub-grouping of developing countries, the small states in the Africa, Caribbean and Pacific (ACP) grouping. These countries are either considering or are actively involved in negotiating such agreements with developed countries both inside and outside of their respective regions. The paper presents a case study of the experience of Caribbean ACP small states in negotiating the Free Trade Area of the Americas (FTAA) with larger ‘partners’ in North America and South America. In so doing, it seeks to illuminate some of the challenges these countries, and other small states, are likely to confront in what are viewed as unequal relationships. It argues that, given the similarity of challenges confronting both groups in negotiating these arrangements, that it would be beneficial for them to form strategic alliances across issues and negotiating arenas to strengthen their position and safeguard their interests.



1832. **Lewis, Patsy, Patricia Northover, Lucy Eugene, and Don D. Marshall.** “The Future of Special and Differential Treatment in the FTAA.” Studies on Special and Differential Treatment and Evaluation of International Competitiveness. Association of Caribbean States. Port of Spain, Trinidad: Association of Caribbean States Secretariat, 2003 http://www.acs-aec.org/Trade/s_tr_neg/SALISES_Future_SDT_En.pdf

1833. **Northover, Patricia.** “Rethinking the Problem of ‘Economic Growth’ in the Caribbean: the Methodological Problems in Standard Modernization Commitments for the Region.” Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth: (Jamaica Pegasus Hotel. Kingston, Jamaica: March 17-18, 2005).

Under contemporary pressures of globalization the Caribbean community (CARICOM) seems threatened by increasing global and regional insecurity, vulnerability and marginalization as they are seemingly once again carried across another middle passage rite in the turbulent waves of a neo-liberal globalization. But what exactly are the preconditions for the region’s success in this dynamic and complex global world? This question, a recurrent one in the history of the region, was the substantive problem that Arthur Lewis spent his passions in his quest to reposition the region in the then global order. In this paper, the author explores this difficult question and points towards elements of an answer that is relevant for the contemporary context and which prioritizes analyses about ontology and politics. This is done through a critical engagement of perspectives on regional success which interpret growth as simply the outcome of a state or market determined process of competitive modernization/industrialization. She argues along the lines of Lloyd Best’s critique of Caribbean epistemology, that securing the region’s survival and beyond, still requires an escape from functionalist, aprioristic and deterministic analytical methodologies, in order to properly explore the paths for regional ascent, and the nature of the relationship between society, economy and the state. At a minimum, she argues that a reliance on methodologies that can accommodate process and complex open systems analysis, will be required to pursue the needed research into the particularities of the social and political processes shaping the “state of the state” and the complexity of real interests influencing the State in its unfolding role in relating to the society, to enable a Caribbean C/creole development. Such new departures, would help one to better identify the social forces for enabling or helping to catalyze the strategically embedded state and to better identify particularly important strategic political repositioning imperatives for enhancing the development of social capabilities for a Caribbean C/creole strategy of endogenous regional integration/development. In demonstrating this point, the paper draws upon an alternative model of social power developed in previous papers in order to try to show the role that constructions of ‘rurality’ and processes of rural play in shaping the future of modern state systems, modernity, and the possibilities of different and more empowering human experiences under contemporary globalization.

1834. —-. “Size, Survival and Beyond: A Creole Strategy for CARICOM Regional Integration.” Fifth Annual Conference Sir Arthur Lewis Institute for Social and Economic Research: The CARICOM Single Market and Economy: Legal, Political, Economic and Social Dimensions: (University of the West Indies. St. Augustine, Trinidad: 31 March - 1 April, 2004).

1835. —-. “Strategy and Scope: What Remains of the Role of the State in Agriculture in the Context of the New Liberal Trade Order.” Governance in the Contemporary Caribbean -The Way Forward: (University of the West Indies. St. Augustine, Trinidad: March 14-16 2001).

Northover, Patricia See also 1797



1836. **Osei, Philip D.** “Alternative Approaches to State-Led Poverty Reduction in the Caribbean: Unfolding Experience in Jamaica.” Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis’ Theory of Economic Growth. (Jamaica Pegasus Hotel. Kingston, Jamaica : March 17-18, 2005).

(Also presented at the Thirtieth Annual Conference of the Caribbean Studies Association. May 30 - June 4, 2005. Santo Domingo, Dominican Republic.)

The contemporary debates on social development seem to have resolved a number of key questions regarding who should be responsible for providing services for the poor. In one way or another, participants in the development debate seem to have agreed that considering its strategic role in the political economy in terms of policy formulation and regulation and because it wields the instruments of fiscal policy, the state should firmly be in charge of ensuring better services. But an aspect of the consensus reached under neo-liberal development theory enjoins a placid approach to the implementation and management of public policy. This placid approach includes the exercise of flexibility in the choice of institutional agency when it comes to implementation. Hence, all kinds of flexible arrangements have been advocated including privatisation of services. Within this paradigm a sphere has been created for the non-state sector to play an augmented role in service delivery for the poor, in what has been described as ‘democratizing development’ by John Clark (1991). This paper examines the translation and operationalization of the European Union’s concept of ‘decentralized co-operation’ in Jamaica in which non-state actors (NSAs) have been assigned a significant role in poverty reduction policy. This non-state leadership model, while it resonates with the government’s community development approach to poverty eradication, simultaneously represents a diametrically opposed view in its modus operandi. The paper examines the non-state leadership model of poverty reduction and assesses its main features and the challenges it poses to the established policy regimen. This paper is an exposition, and it aims at concept building and comparative policy analysis.

1837. —. “A Crime Prevention Strategy ‘Fit for Purpose’: A Post-Mortem of Jamaica’s 12-Point Plan of 2002.” Third International Crime and Criminal Justice Conference in the Caribbean: (University of the West Indies, Mona. Kingston, Jamaica and Renaissance Jamaica Grande. Ocho Rios, Jamaica : February 11-14, 2004).

1838. —. “Executive Agencies and Changing Notions of Public Accountability: The Jamaican Experience.” Governance in the Contemporary Caribbean -the Way Forward. (University of the West Indies. St. Augustine, Trinidad: March 14-16, 2001).

1839. —. “Executive Agencies: Intellectual Background to the Search for Appropriate Institutional Forms.” Caribbean Journal of Public Sector Management 3.1 (2002): 73-83.

This paper reports on in-depth and semi-structured interviews with relevant executives of the new executive agencies in Jamaica. It examines intellectual antecedents to agencification.

1840. —. “Regulating Government Procurement in the CARICOM: What Lessons Can Be Learnt From Jamaica?” Fifth Annual Conference Sir Arthur Lewis Institute for Social and Economic Research: The CARICOM Single Market and Economy: Legal, Political, Economic and Social Dimensions. (University of the West Indies. St. Augustine, Trinidad: 31 March - 1 April, 2004)

1841. —. “Regulation in a Flux: The Development of Regulatory Institutions for Public Utilities in Ghana and Jamaica.” Fourth Annual Sir Arthur Lewis Institute for Social and Economic Research Conference: Development and Policy for Small States in the Context of Global Change: (Barbados: January 15 - 17, 2003).

[http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/\\$FILE/Doc5.pdf](http://www.caribank.org/Workshop.nsf/b1da8bcd1e18562585256bb100553716/$FILE/Doc5.pdf).

The above quotation appears in Lewis’s review of the development process in which he assesses lessons learned in



the two decades leading up to the writing of his paper. This view, which was expressed about three decades ago, still resonates with the state of affairs in contemporary development management. It acknowledges what we know today about the weaknesses of public administration systems in the Caribbean and why the recent reforms have been necessary to refine the role of the state. Since the latter part of the 1980s, regulation as a mode of governance has received a lot of scholarly attention in the public policy literature. In particular, initial theoretical and empirical explorations have tended to establish whether there is indeed a 'regulatory state' in the advanced industrialized countries. Centres of regulatory studies have been established at the University of Manchester and London School of Economics to further the theoretical development of the field. In connection with these developments, the review of the role of the state in national development which took place in developing countries in the 1980s has necessitated a parallel re-examination of the governance agenda in 198 developing countries which have been encouraged to establish reliable regulatory framework while they minimise their direct involvement in economic production in order to facilitate participation by the private sector and civil society. This paper does not seek to establish whether there is a regulatory state in Ghana or Jamaica, but it represents an initial attempt to map out the development of regulatory institutions for the governance of public utilities in the two countries. It discusses the groaning of the two governments as they grappled with policy choice as to which institutions to adopt and the teething problems in the processes towards institutional refinement. Also in this paper, the issue of regulatory independence is explored, and a number of observations made about how to improve institutional choice and refine the workings of existing ones.

1842. ——. “Review of Ghana in Search of Development: The Challenge of Governance, Economic Management and Institution Building by Dan-Bright S. Dzorgbo.” The Journal of Modern African Studies 40.4 (2002): 687-89.

1843. ——. “Strengthening Local Fiscal Capacity in Jamaica, 1993- 2002.” Social and Economic Studies 51.4 (2002): 31-62. **Refereed**

Examines the Jamaican government's policy reform that aimed at strengthening the financial capacity of Parish Councils. It noted that the main issue at stake at the beginning of the reform in 1993 was the question of the viability of the Councils, of which financial strengthening was just one facet. Argues that the conceptualisation of the reform as a whole and of their revenue-sharing policy in particular, fell far short of being comprehensive. A parochial revenue fund (PRF) was established comprising of revenue from motor vehicle license and property taxes. This was managed by the central government on behalf of the parish councils. But the yield from the PRF was inadequate and far from commensurate with the responsibilities assigned to the councils. Property tax administration itself needed a thorough reform for it to be able to contribute meaningfully to the PRF. The effect of all this was that inadequate funding meant that the parish councils have remained poor, expended a greater share of their little budget on administrative costs and spent very little on capital investment.

1844. ——. “Tripartite Social Partnerships in Small States: Barbados and Jamaica in Comparative Perspective .” Globalization and Governance: Essays on the Challenges for Small States. Editor Ann Marie Bissessar. Jefferson, North Carolina: McFarland and Company, 2004. 34-55.

Assesses Barbados and Jamaica's experiment with a corporatist tripartite social partnership (including the government, private sector employers, and trade union representatives) strategy for development. According to the author, Barbados managed a successful strategy, while Jamaica's policy failed. He argues that the causes that contributed to these differing results include the nature of politics and the immediate circumstances of each country prior to the introduction of the policy, the political culture, vibrancy of the trade unions, policy style, state capacity for policy management, and the outlay of social capital.

1845. **Paul, Annie**. “Changing the Subject: The Repeating AlterNATIVE and the Expat Gaze.” Second Caribbean International Symposium in Arts Education : (Centre for Creative and Festival Arts. University of the West Indies, St. Augustine: June 30, 2005).

(Keynote address at Conference. Conference held in collaboration with UNESCO.)

A comparison of the artworlds of Trinidad and Tobago and Jamaica with specific reference to the creation of



Caribbean Contemporary Arts (CCA7) in the former and the participation of the latter in the Venice Biennale. The work of Trinidadian artist Steve Ouditt is engaged as well as Raymond Ramcharitar's critique of CCA7. Frequent references are made to Hans Guggenheim's 1968 thesis "Social and Political Change in the Art World of Trinidad during the Period of Transition from Colony to New Nation".

1846. —. "Christopher Cozier." Bomb 82 (2002-2003): 66-73 .

An interview with Christopher Cozier, Trinidadian artist and critic who has been very instrumental in building a context for the exhibition of new works in new media in the Anglophone Caribbean. What is unique about Christopher Cozier is that he has developed his artistic practice very much away from the Caribbean. He is emphatically NOT IN EXILE and the work he makes is rooted in the problem space of the Caribbean. He articulates local concerns but does so in contemporary lingoes that resonate in other parts of the world. In the interview, subjects such as migration, nationalism, 'new internationalism', music and sound systems are touched upon.

1847. —. "Culture Is Always a Translation." BWIA Caribbean Beat 71 (2005).

Jamaican-born, London-based cultural studies scholar, Stuart Hall, discusses his Jamaican background, Caribbean culture, and the conference held in his honour at the University of the West Indies - as told to Annie Paul.

1848. —. "Dancehall in Jamaica: On Babylon, Violence, 'Poor' Taste and the Disappearance of Jonkonnu." Twenty-Second Annual West Indian Literature Conference: Caribbean Currents: Navigating the Web and the Word: (University of Miami. Coral Gables, Florida : March 20-22, 2003).

In contemporary Jamaica, the discourse of dancehall represents an ongoing subversive and critical subtext to the strictures and structures of 'Babylon'. In the past, it was easy to see the Jamaica of slavery and colonialism as an outpost of a now legendary worldwide 'Babylon System'. The persistence of texts of anger and rebellion in the lyrics of DJs and singers, and the remarkable similarities and continuities in the methods of containment and censorship exercised by postcolonial elites, compared to the responses of colonial elites, would suggest that on the contrary the postcolony continues to perpetuate the injustices of the past. The author explores recent debates in the Jamaican public sphere on the subjects of popular culture, violence, vulgarity, obscenity and poor taste and draws analogies between the current moralizing of the poorer classes by middle class elites and successful attempts in the past to stigmatize and drive underground popular practices and belief systems such as Myal, Revival, Jonkonnu and Rastafari.

1849. —. "Earth Angels." Maco Magazine: Caribbean Living 5.1 (2003): 72-79 .

This article focuses on the works of Jamaican ceramicist, Gene Pearson.

1850. —. "Emancipating Ourselves...in "Post-Slave Societies of the New World ""." Axis: Journal of the Caribbean School of Architecture 7 (2004): 122-35 .

(Also presented at the Twenty-ninth Annual Conference of the Caribbean Studies Association in St. Kitts and Nevis, 2003.)

This article explores the public reaction to the Emancipation monument, *Redemption Song*, by sculptor Laura Facey-Cooper. Unveiled in August 2003, the monument depicts naked male and female figures. The author draws on discussions in the local electronic and print media as well as issues raised at a forum on the monument, held at the University of the West Indies in October 2003. By exploring the passionate debate which involved a wide cross-section of the Jamaican population, the author hopes to shed light on what constitutes emancipation, nation, community, art and morality in public spaces.

1851. —. "The Enigma of Survival: Traveling Beyond the Expat Gaze." Art Journal 62.1 (2003): 48-66 .

Traditionally, historians and critics of Caribbean art have been preoccupied with identifying and categorizing Caribbean artists according to received canonical ideas of art and art history. Instead, Paul discusses the leaps being made by artists in the Caribbean and compares and links them to leaps being made by artists elsewhere.



1852. —. “Father Abrahams .” BWIA Caribbean Beat (2005).
http://www.meppublishers.com/online/caribbean-beat/current_issue/article.php?id=cb75-1-68.
 This article serves as a brief tribute to the life and works of renowned Jamaican artist, Carl Abrahams.
1853. —. “Fierce Obsession.” The Caribbean Review of Books (2005).
 Review of My Jamaica: The Paintings of Judy Ann MacMillan illustrated by Judy Ann MacMillan with an introduction by Edward Lucie-Smith.
1854. —. “Framing the Postcolonial: Annie Paul on Christopher Cozier.” Copenhagen, Denmark: Danish Centre for Culture and Development, 2002. 60-74 .
 Focuses on the work of Trinidadian artist, Christopher Cozier, from his 1998 exhibition *Migrate or Meddle/Medal* to his shows in Barbados and South Africa in 1999. Connections are made between the lyrics of musicians such as Ataklan and David Rudder, the popular culture of Trinidad and Cozier’s work.
1855. —. “The Ironies of History: An Interview With Stuart Hall.” Ideaz 3.1-2 (2004): 53-80. **Refereed**
 Comprehensive interview in which Stuart Hall answers questions on a wide range of subjects, such as, deportees, the Caribbean diaspora, homophobia, black masculinity, his interventions into visual art, his association with in IVA, Chris Ofili, the University of the West Indies conference held in his honour, lazy scholarship, theory, postmodernism, David Scott and Edward Said.
1856. —. “Isle Full of Stories.” The Caribbean Review of Books (2004).
 Review of Passing Through by Colin Channer.
1857. —. “Obscenity in Transit: Rude Lyrics Versus Nude Tourists.” Second Conference on Caribbean Culture: In Honour Of Kamau Brathwaite: (University of the West Indies Mona. Kingston, Jamaica: January 9-12, 2002).
 The author examines the treatment of obscenity and vulgarity in the Jamaican public sphere by focusing on the Post-Reggae Sumfest furore over the use of bad/violent language by DJs and the subsequent charging of Bounty Killer, Lady Saw, Alozade and others with breaching the laws governing indecency in public places. The media’s treatment of the public debate surrounding the views of the dancehall fraternity on the subject will be compared and contrasted with the media’s discussion and treatment of the debate on the marketing of nude weddings at Hedonism III, an up-market tourist resort which uses the allure of sex among other things in the package it offers tourists. It is hoped that the media’s biases towards different segments of Jamaican society will be revealed in this analysis of the policing of morality in contemporary Jamaica.
1858. —. “Rastaman Vibration.” The Caribbean Review of Books (2004).
<http://www.meppublishers.com/online/crb/aug04/index.php?topic=040802>.
 Review of Brother Man by Roger Mais.
1859. —. “The Return of the Native: In Different Times .” Post Issues: Strategies of Contemporary Creation - Diálogos Iberoamericanos IV : (Museo de Bellas Artes de Valencia, Generalitat Valenciana. Valencia, Spain : 2003. 62-73 .
http://www.dialogosiberoamericanos.org/s4_annie_ing.htm#subir.
 (Also presented under the title “The Turn of the Native: In Different Times” Post Issues: De las Estrategias de la Creación Contmporanea: Diálogos Iberoamericanos IV Simposio Internacional. Museo de Belles Artes de Valencia. Valencia, Spain. June 14-16, 2001. Paper presented on June 15th.



Examines the question of what it means to be “Caribbean”. Focuses on aspects of the development of the concept of culture in Jamaica and attitudes towards European and African aspects of it. Comments on the role of various Caribbean personalities in the shaping of culture in the region. Points to the role of the arts in the discussion of Caribbean issues. Highlights the social commentary of Caribbean artistes such as David Rudder, Bounty Killer, Anthony B and Louise Bennett.

1860. —. “Running A University Is Like Running A Dance Company.” *BWIA Caribbean Beat* .75 (2005). http://www.meppublishers.com/online/caribbean-beat/current_issue/article.php?id=cb75-2-38.

Rex Nettleford, founder of the Jamaica National Dance Theatre Company and former Vice Chancellor of the University of the West Indies, on “the power of the body” as told to Annie Paul.

1861. —. “Sound Systems Against the ‘Unsound System’ of Babylon: Rude/Lewd Lyrics Vs. Nude Tourists in Jamaica.” *Créolité and Creolization: Documental1 Platform3*. Editors Okwui Enwezor, Carlos Basualdo, Ute Meta Bauer, Susanne Ghez, Sarat Maharaj, Mark Nash, and Octavio Zaya. Ostfildern-Ruit, Germany : Hatje, 2004

(Also presented at the Workshop on Créolité and Creolization in St. Lucia, January 12-16, 2002.) This paper explores Jamaican Dancehall music as a ‘text of Creoleness’ or a ‘Creolized translation’ born in the urban spaces of Kingston. In particular, the author examines confrontations and conflicts between dancehall performers and the publics that constitute Jamaican society as these have manifested themselves in the public sphere. The author explores the manner in which subaltern Creoleness is received by those who claim a ‘standard-ness’ corresponding to the use and status of ‘standard’ English in Jamaica. She looks at how space is negotiated and morally legislated between these classes of people. Emphasis is also placed on what happens when the mythical ‘Babylon’ of Marley and classical Reggae, signifying the corruption of ‘Western’ culture, morphs into the present-day corruption of contemporary postcolonial Jamaica, the subject of many a dancehall anthem.

1862. —. “Tales of the City .” *The Caribbean Review of Books* .1 (2004).

<http://www.meppublishers.com/online/crb/issue1/index.php?topic=050403>.

Reviews *Trench Town, Concrete Jungle: Kill or Be Killed* by Pauline Edwards, *Paint the Town Red* by Brian Meeks, *The Runnings* by D.N. Wong Ken and *For Nothing At All* by Garfield Ellis.

1863. **Paul, Annie, and Krista A. Thompson.** “Caribbean Locales/Global Artworlds.” *Small Axe*.16 (2004): v-ix (Introduction) . http://muse.jhu.edu/journals/small_axe/v008/8.2paul.html.

Discusses art and visual representation in Caribbean locales with specific reference to the debates generated by the *Redemption Song*, the Jamaican monument at Emancipation Park unveiled in August 2003.

1864. **Robinson-Walcott, Kimberly A.** “Claiming an Identity We Thought They Despised: Contemporary White West Indian Writers and Their Negotiation of Race.” *Small Axe* .14 (2003): 93-110. <http://social.chass.ncsu.edu/wyrick/debclass/axe.htm>.

Examines the works of contemporary white West Indian writers and their negotiation of race. Also discusses works by Jamaican writers Michelle Cliff and Honor Ford-Smith and offers comments on the book *Shapeshifter* by Pauline Melville.

1865. —. “Funny Sad Stories.” *The Caribbean Review of Books* (2004).

Review of *The Annihilation of Fish and Other Stories* by Anthony C. Winkler

1866. —. “A Matter of Taste: Exploring the Popularity of Some Recent Works of Jamaican Fiction.” *Twenty-Second Annual West Indian Literature Conference: Caribbean Currents: Navigating the Web and the Word:* (University of Miami. Coral Gables, Florida : March 20-22, 2003).



It is often easy for literature scholars to separate fiction into the categories of 'serious' versus 'popular', or 'quality' versus 'trash'. Such categorizations extend to all aspects of culture. There is, for example, 'high' art and 'low' art, 'high' fashion and 'low' fashion (or, in Jamaica, uptown versus downtown fashion), haute cuisine and junk food, classical music and dancehall, architect-designed homes and "hurry-come-ups". In all of these cultural areas, there are references by designated 'experts' in the respective fields to 'good taste' and 'bad taste'. But who are the arbiters of taste? This paper explores the popularity of a number of titles published recently by Jamaican writers, both at home and abroad (for example, Colin Channer's *Waiting In Vain* and Osmund James' *Tough Girls Don't Dance*). Many literature scholars, cringe at the mere thought of some of these works. Yet the immense popularity of these titles (in contrast to the lack of popularity of other recently published, more 'serious' works such as Margaret Cezair-Thompson's *The True History of Paradise*), demands exploration. Is it simply that sensationalism sells? The works themselves, coarse, vulgar bordering on pornographic, structurally flawed or contrived as they may be, demand attention.

1867. ——. "Taking, or Spurning, the Imperial Road: White West Indian Writers and Their Black Protagonists." The Third International Humanities Conference : (University of Cambridge, Cambridge, United Kingdom: August 2-5, 2005).

(A version of this paper was also presented at the Jean Rhys Festival and Conference. June 10-13, 2004. Dominica.

<http://www.uwichill.edu.bb/bnccde/dominica/conference/rhys/robinson.html>

How have 'white' West Indian writers negotiated their 'whiteness' in their literature, in an environment where the majority of the population is black? While acknowledging the fluidity of the term 'white' in a West Indian context, this paper nevertheless identifies certain trends in the creative writings of this minority group. Historically, there has been a tendency to display an insecurity of status, a 'terrified consciousness' on the part of the white protagonists, as pointed out by Kenneth Ramchand in his seminal 1970 work on the West Indian novel. Ramchand in that same work, noted that the depiction of blacks in white West Indian literature was usually of a comforting nanny and/or ominous-obeah woman stereotype. The former possibly reflecting the limitations of whites' encounters with blacks, and the latter, the perceived precariousness of the white person's position in a black hate-filled environment. The Caribbean-based work of Jean Rhys, most especially *Wide Sargasso Sea*, seems, at first, to be consistent with the above observations. Yet the positive strength depicted in the characterization of the black nurse Christophene in contrast to the frailty of Antoinette may even tentatively undermine that stereotype. This paper, after a brief, preliminary examination of some common threads in the works of white West Indian writers of the nineteenth and twentieth centuries, identifies a number of writers, from Rhys through to the contemporary Anthony C. Winkler, who have elected in their works to depict black protagonists who are outside of the stereotypes observed by Ramchand, some of whom, particularly Winkler, have done so with great success. The author suggests that despite the sense of un-belonging and marginalisation experienced by many white West Indians and communicated so poignantly by Rhys, such success may disturb stereotypical perceptions of the exclusivity of the white West Indian identity held by nonwhite West Indians. Notwithstanding, any current trends in Caribbean intellectual thought towards the Utopian notion of creolité, race seems to matter more than ever in Caribbean society, and the divisions based on ethnicity/race/class widen steadily. Nevertheless certain white writers like Winkler break through such divisions and transcend the limitations imposed on them by history, and ultimately give one hope of the eventual possibility of a creole cohesion described some forty years ago by Edward Kamau Braithwaite.

1868. **Robinson-Walcott, Kimberly A.** "Winkler's Wily Women: Objects or Subjects." Second Conference on Caribbean Culture: In Honour of Kamau Brathwaite: (Kingston, Jamaica: January 9-12, 2002).

From the toothless old nanny Mildred in *The Great Yacht Race* who wallops her employer with a broom when he gets a bit out of hand, to the respectable matron Miss B in *The Duppy* who outrageously insists on having sex although she is in heaven, the female protagonists in Anthony C. Winkler's novels are memorable in their domineering natures and sexual aggressiveness. Often the men may be viewed as innocent victims, combating the wiles of these women - the childlike Aloysius versus the fascist virago Inga in *The Lunatic*, for example. Some



readers have objected to what they perceive to be a negative portrayal of women in Winkler's works. This paper suggests that, to the contrary, Winkler's rambunctious women are positive representations of assertive, independent womanhood - reflecting the reality of gender relations, of economic and power bases within the Jamaican society - and also, interestingly, echoing the beat of popular dancehall culture.

Thompson, Krista A. See 1863

1869. **Tindigarukayo, Jimmy K.** "An Attempt to Empower Jamaican Squatters." Environment and Urbanization 16.1 (2004): 199-209. **Refereed**

This paper describes a government programme, Operation PRIDE, that seeks to help low-income households acquire land for housing or to regularize tenure of land that they already occupy. To receive support, these low-income households have to undertake community assessments and form community organizations that are legal entities. Each household has to save and contribute to a community infrastructure fund, although there is some provision for members to contribute work in lieu of payments. Community organizations are meant to direct the programme in acquiring land and in developing infrastructure, with support from NGOs or from the staff of Operation PRIDE. Although many communities have sought to meet these pre-conditions, staff from Operation PRIDE have tended to dominate the process and, consequently, most of the community organizations have failed to develop as anticipated. This paper reflects on the weaknesses of the programme and its failure to empower squatters. It ends by describing one Jamaican community organization, Community Organization for Management and Sustainable Development (COMAND), that was able to transcend these difficulties and make good use of the benefits offered under Operation PRIDE.

1870. —. Constraints on Political Order in Uganda. St. Louis: Kobalt Books, 2004. 272p.

Discusses how political order - defined in terms of the absence of sustained societal conflict, violence, and instability - has been an elusive goal rather than a reality in most developing countries, and more particularly those in Africa. Rather than moving towards political order thus defined, the majority of African countries have been characterized by political instability, constitutional crises, breakdown of law and order, social and cultural conflict, military coups, economic dislocation, and the like. The author posits that most African countries have been moving towards political disorder rather than order.

1871. —. "The Implementation of Executive Agency Model in Jamaica." Sixth Annual SALISES Conference: Governance, Institutions and Economic Growth: Reflections on Arthur Lewis' Theory of Economic Growth. (University of the West Indies, Mona. Kingston, Jamaica: March 17-18, 2005).

1872. —. "An Integrated Model for Tackling Violence in Jamaica." Third International Crime and Criminal Justice Conference in the Caribbean. (University of the West Indies, Mona. Kingston, Jamaica and Renaissance Jamaica Grande. Ocho Rios, Jamaica : February 11-14, 2004).

1873. —. Local Government Reforms in Jamaica (1993 - 2000): An Evaluation. Kingston, Jamaica: Sir Arthur Lewis Institute for Social and Economic Studies, 2003.

The most vital aim of any local government reform is to bring government, and the services associated with it, closer to the people. Four other elements of a successful local government structure are particularly vital:

(i) location of the main leadership roles in the hands of democratically elected representatives of the governed; (ii) administrative capacity, which entails adequate financial resources, effective managerial skills and accountability; (iii) a local government structure that supports decentralization and participation, and is regarded as legitimate by the governed; and (iv) involvement of civil society in local government activities, including provision of some services, neighborhood participation and representation of local government administrative and political bodies. Local government reforms in Jamaica that will be evaluated in this study have attempted to attain the above and other



related objectives. But before these reforms are discussed, an overview of the background information on local government in Jamaica will be presented, and the above vital elements of local government reform will be put within the related theoretical framework.

1874. ——. “Perceptions and Opinions of Jamaicans on CARICOM Single Market.” Fifth Annual Conference Sir Arthur Lewis Institute for Social and Economic Research: The CARICOM Single Market and Economy: Legal, Political, Economic and Social Dimensions: (University of the West Indies. St. Augustine, Trinidad: March 31 - April 1, 2004).

Analyses the perceptions and opinions of 1581 Jamaicans of voting age, on Caribbean institutions for regional integration. The survey instrument that was utilized in Jamaica is intended to collect similar data, in future, from other CARICOM states for comparative purpose. The study concentrates on the information relating to the Caribbean Single Market and Economy (CSME) analyses data relating to respondents who claim to be aware of CSME, and their perceptions and opinions on the functioning of these Caribbean institutions in relation to regional integration

1875. ——. “A Program for Housing the Poor in Jamaica.” International Housing Conference: (University of Toronto. Toronto, Canada: June 24-27, 2004).

http://www.urbancentre.utoronto.ca/pdfs/housingconference/Tindigarukayo_Programme_Poo.pdf. Discusses the characteristics and functions of the Program for Resettlement and Integrated Development Enterprise (Operation PRIDE), launched by Jamaica’s Prime Minister, the Honorable P. J. Patterson in 1994. The Programme is a unique method of making land legally accessible to low income groups at affordable prices through some government subsidies. The author also lists and discusses the Government, Non-governmental and funding institutions directly involved with the Programme. Figures highlighting the current achievements of the Programme are also provided.

1876. ——. “Public Participation in Local Government in Jamaica.” Governance in the Caribbean. Editors Selwyn Ryan and Ann Marie Bissessar. St. Augustine, Trinidad: SALISES, 2002. 89-101.

1877. ——. “The Squatter Problem in Jamaica.” Social and Economic Studies 51.4 (2002): 95-125. **Refereed**

Examines the extent to which government policies redress squatters’ problems; levels of participation of squatters in formulating those policies; and top priorities of squatters, as articulated by squatters themselves. To address the above concerns, the study utilized three methods of data collection: (i) a critical examination of policy documents relating to squatters in Jamaica (ii) elite interviews with those who make policies affecting squatters; and (iii) a national social survey of squatters. The findings of the study were four-fold: (i) the living conditions of squatters in Jamaica are much worse than the national average; (ii) majority of squatters are women, who are mostly single and, in comparison to male squatters, are less educated, less employed and earn less income; (iii) government policies relating to squatters have been either limited or are failure; and (iv) there has been little participation by squatters in programmes that affect their lives.

1878. **Tindigarukayo, Jimmy K., and Sandra J. Chadwick.** “An Assessment of the Citizens’ Charter in Jamaica (1994-1999).” Caribbean Journal of Public Sector Management 5.1 (2003): 1-23. **Refereed**

This article discusses the Citizen’s Charter which was introduced by Jamaican Prime Minister, P.J. Patterson in 1994 as a stimulus for public agencies to deliver better service and act in accordance with the principles of the public service establishment. The authors explore the Charter’s origin; how it was introduced; the vision it embodied; implementation strategies used to ensure its adoption; resistance and the ways in which this was overcome as well as costs and benefits of its implementation



Tropical Metabolism Research Institute

1879. **Anderson, S., J. C. Mbanya, A. H. Heald, Marshall K. Tulloch-Reid, Maria. Jackson, B. Balkau, S. Sharma, Terrence E. Forrester, Rainford. J. Wilks, and J. Kennedy Cruickshank .** “Relationship of Specific Dietary Patterns and Nutrient Intake With Glucose Intolerance and Diabetes in Populations of West African Origin.” [Abstract]. West Indian Medical Journal 54 Suppl. 2 (2005): 37-38. **Refereed**

1880. **Augier, R., Ian R. Hambleton, and Hyacinth E. Harding.** “Requests for Admission to the Intensive Care Unit, the University Hospital of the West Indies.” [Abstract]. West Indian Medical Journal 52 Suppl. 5 (2003): 24-25. **Refereed**

1881. ——. “Triage Decisions and Outcome Among the Critically Ill at the University Hospital of the West Indies.” West Indian Medical Journal 54.3 (2005): 181-86. **Refereed**

The worldwide scarcity of intensive care therapy leads to the rationing of this expensive resource. This prospective study investigates the rationing of intensive therapy at the University Hospital of the West Indies (UHWI) by recording triage decisions for intensive care unit (ICU) admission and the impact of these decisions on patient outcome. Between June 2001 and May 2002, all patients triaged for admission to a multidisciplinary ICU were studied. For each patient, data were collected including APACHE II score, ICU resource availability and patient survival. There were 356 eligible requests, and 285 (80%) were admitted to the ICU, with 73 (26%) of these admitted patients receiving intensive care outside of the ICU due to space limitations. The APACHE II score was the strongest predictor of ICU admission, with admission more likely as the score decreased (odds ratio = 0.94, 95% confidence interval 0.91, 0.98, $p = 0.001$). Of 311 requests considered suitable for admission, 26 (8%) were refused admission due to resource limitations. Mortality among these eligible refusals was 81%, compared to 34% among admitted patients ($p < 0.001$). Although triage decisions are based predominantly on a patient’s disease severity, the demand for ICU space exceeds supply, and patient care is negatively impacted by this imbalance.

1882. **Badaloo, Asha V., Terrence E. Forrester, Marvin E. Reid, K. Phillips, and Farook Jahoor.** “Lipid Kinetics in Children With Kwashiorkor and Marasmus.” [Abstract]. West Indian Medical Journal 54 (Supplement 2) (2005): 36. **Refereed**

1883. **Badaloo, Asha V., Marvin E. Reid, Michael S. Boyne, Terrence E. Forrester, and A. A. Jackson.** “The Effect of Birth Weight on Urea Kinetics in Children.” [Abstract]. West Indian Medical Journal 51 (Supplement 2) (2002): 26. **Refereed**

1884. **Badaloo, Asha V., Marvin E. Reid, Farook Jahoor, and Terrence E. Forrester.** “In Vivo Rates of Synthesis of VLDL-ApoB-100 in Malnourished Children With Fatty Liver.” [Abstract]. West Indian Medical Journal 52 (Supplement 3) (2003): 31. **Refereed**

1885. **Badaloo, Asha V., Marvin E. Reid, Deanne P. Soares, Terrence E. Forrester, and Farook Jahoor.** “Relation Between Liver Fat Content and the Rate of VLDL Apolipoprotein B-100 Synthesis in Children With Protein-Energy Malnutrition.” The American Journal of Clinical Nutrition 81.5 (2005): 1126-32. **Refereed**

Background: Fatty infiltration of the liver is associated with an increased morbidity and mortality in children with severe protein-energy malnutrition (PEM), but its pathogenesis remains unclear. Although impaired synthesis of



VLDL apolipoprotein B-100 (VLDL-apo B-100) is generally accepted as the pathogenetic mechanism, the rate of its synthesis has not been measured in children with PEM. **Objective:** The objective of the study was to ascertain the relation between the degree of hepatic steatosis and the rate of VLDL-apo B-100 synthesis in children with PEM.

Design: The fractional and absolute rates of VLDL-apo B-100 synthesis were measured with a prime-constant intravenous infusion of [$^2\text{H}_3$]leucine in 13 severely malnourished children (8 boys and 5 girls) aged 7–18 mo.

Hepatic fat content was estimated by computerized tomography scanning by using the ratio of liver to spleen (L:S) attenuation. The ratio is inversely related to hepatic fat content such that the lower the L:S, the greater the amount of fat in the liver. **Results:** There were significant inverse relations between L:S attenuation and VLDL-apo B-100 concentration ($P < 0.02$), the absolute rate of VLDL-apo B-100 synthesis ($P < 0.02$), and plasma triacylglycerol ($P < 0.02$) and serum cholesterol ($P < 0.05$) concentrations. **Conclusions:** These results suggest that children with PEM synthesize VLDL-apo B-100 at a faster rate as the degree of hepatic fat infiltration increases. Thus, fatty infiltration of the liver in PEM is not due to a reduction in the synthesis of VLDL-apo B-100.

Badaloo, Asha See also 1916, 1917, 1935, 1936, 1943, 1947, 1948

1886. **Barker, D., Novie O. Younger, Michelle Moo Sang, and Colin A. McKenzie.** “HIV Serostatus and Recovery From Severe Childhood Malnutrition. A Retrospective Matched Case-Control Study.” West Indian Medical Journal 53.2 (2004): 89-94. **Refereed**

The world-wide epidemic of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) has led to an increase in the number of HIV positive children, mainly through perinatal transmission. HIV/AIDS can lead to severe childhood malnutrition (SCM) and has been noted as an increasingly common cause of secondary SCM. In this context, it is important to make assessments of the appropriateness of current approaches to treatment of severe malnutrition in HIV positive children. A retrospective matched case-control study of ten HIV positive children admitted to the Tropical Metabolism Research Unit (TMRU) was conducted. There were few differences between cases and matched controls on admission to the ward. Oral candidiasis and lower respiratory tract infections appeared to occur more frequently, and serum globulin concentrations were significantly higher among HIV positive cases when compared to their controls. Despite the fact that the differences between cases and controls appeared to be small, four cases died. There were no deaths among the controls. The duration of the maintenance phase was approximately five days longer ($p = 0.024$) among cases than controls but the time between the end of the maintenance phase and discharge from the ward was not significantly longer for the cases. The results of this matched case-control study suggest that there are likely to be important differences between HIV positive and negative patients with SCM that influence risk of mortality and morbidity, particularly in the maintenance phase of treatment. Prospective studies will be required in order to explore these differences and to develop better approaches to the care of HIV positive children with SCM.

1887. **Bouzekri, Nourdine, Xiaofeng Zhu, Yanming Jiang, Colin A. Mckenzie, Amy Luke, Terrence E. Forrester, Adebowale A. Adeyemo, Donghui Kan, Martin Farrall, S. Anderson, Richard S. Cooper, and Ryk Ward.** “Angiotensin I-Converting Enzyme Polymorphisms, ACE Level and Blood Pressure Among Nigerians, Jamaicans and African-Americans.” European Journal of Human Genetics 12.6 (2004): 460-68. **Refereed**

The genes in the renin-angiotensin system are important physiologic candidates in studies of the genetic susceptibility to hypertension. Limited information has been available in most studies on the extent of variation in the candidate loci or the modifying effects of different environmental settings. The authors consequently genotyped 13 polymorphisms at the angiotensin I-converting enzyme (ACE) locus at an average distance of 2 kb in 2776 family members from Nigeria, Jamaica and an African-American community in the United States. Allele and haplotype frequencies were similar in the three populations, with modest evidence of European admixture in the US.



Two markers were consistently associated with ACE level in the three samples and the proportion of variance accounted for by ACE8 was similar in the three groups. No evidence of consistent association of single markers was noted with blood pressure across the three population samples, however. Likewise, in a haplotype-based analysis, despite significant associations within each population, the findings were not replicated consistently across all three samples. They observed, however, that the overtransmitted haplotypes among hypertensives were drawn from a single clade, suggesting that susceptibility may cluster in patterns not captured directly by their markers.

1888. **Boyne, Michael S., Pamela S. Gaskin, Amy Luke, Rainford J. Wilks, Franklyn I. Bennett, Novie O. Younger, Lincoln A. Sargeant, Adebowale A. Adeyemo, Richard S. Cooper, and Terrence E. Forrester.** “Energetic Determinants of Glucose Tolerance Status in Jamaican Adults.” *European Journal of Clinical Nutrition* 58.12 (2004): 1666-68. **Refereed**

As type 2 diabetes mellitus (DM2), obesity and sedentary lifestyles are increasing in developing countries, this observational study investigated the role of physical activity on DM2 in Jamaica. Anthropometry, body composition (by bioelectrical impedance analysis) and glucose tolerance status was assessed in 722 adults in 1993 and 1997. Energy expenditure was estimated in a subset using measured resting energy expenditure in combination with self-reported activity recalls. The rates of impaired glucose tolerance (IGT) were 23.7 and 27.3%, and DM2 were 16.3 and 23.7% among men and women, respectively. After adjusting for body composition, a one-unit increase in physical activity significantly reduced the odds of having diabetes (OR = 0.05; 95% CI: 0.004, 0.66), but not IGT. Hence, decreased physical activity is a significant independent contributor to the high rates of glucose intolerance in Jamaica. Efforts must be directed at minimizing obesity and increasing physical activity in developing countries.

1889. **Boyne, Michael S., C. Osmond, Minerva M. Thame, Franklyn I. Bennett, Rainford J. Wilks, and Terrence E. Forrester.** “Early Adiposity Rebound and Maternal Adiposity Predicts Blood Pressure in Children: The Vulnerable Windows Study.” [Abstract]. *West Indian Medical Journal* 52 Suppl. 6 (2003): 15. **Refereed**

1890. **Boyne, Michael S., Lincoln A. Sargeant, Franklyn I. Bennett, Richard S. Cooper, Rainford J. Wilks, and Terrence E. Forrester.** “Features of Isolated Post-Challenge Hyperglycaemia in Jamaican Adults.” *West Indian Medical Journal* 53.1 (2004): 7-11. **Refereed**

Isolated post-challenge hyperglycaemia (IPH) can be defined as a two hour plasma glucose concentration greater than or equal to 11.1 mmol/L with a fasting plasma glucose concentration <7.0 mmol/L. The aim of this prospective study was to determine the prevalence of IPH in a cohort of Jamaican individuals. Simple clinical features may predict the presence and subsequent diagnosis, diabetes mellitus. An oral glucose tolerance test (OGTT) was performed. Anthropometry blood pressure and lipid profiles were measured. The prevalence of undiagnosed diabetes mellitus by the 1999 World Health Organization criteria was 6.4%. IPH accounted for 24% of these cases and 1.4% of the entire population. Individuals with IPH were significantly older with greater body mass index, waist-hip ratio, systolic blood pressure, fasting blood glucose, and total cholesterol and LDL-cholesterol than individuals with normal glucose tolerance. Individuals with IPH were not significantly different from individuals with fasting plasma glucose levels greater than or equal to 7 mmol/L (ie fasting hyperglycaemia) in anthropometry or blood pressure. However total cholesterol and LDL-C were significantly elevated in the IPH group. OGTT screening of individuals with impaired fasting glucose (ie 6.1-6.9 mmol/L) could reduce the IPH group by 50%. Reducing the threshold for fasting glucose to 5.6 mmol/L would correctly classify 87% of the population. We concluded that individuals with IPH have features of the metabolic syndrome, which can aid in selection for screening. OGTT screening of individuals with fasting glucose values of 5.6-6.9 mmol/L is needed to identify IPH.

1891. **Boyne, Michael S., David M. Silver, Joy Kaplan, and Christopher D. Saudek.** “Timing of Changes in Interstitial and Venous Blood Glucose Measured With a Continuous Subcutaneous Glucose Sensor.” *Diabetes* 52.11 (2003): 2790-94.

<http://diabetes.diabetesjournals.org/cgi/reprint/52/11/2790>. **Refereed**



The objective of this study was to use a subcutaneous continuous glucose sensor to determine time differences in the dynamics of blood glucose and interstitial glucose. A total of 14 patients with type 1 diabetes each had two sensors (Medtronic/MiniMed CGMS) placed subcutaneously in the abdomen, acquiring data every 5 min. Blood glucose was sampled every 5 min for 8 h, and two liquid meals were given. A smoothing algorithm was applied to the blood glucose and interstitial glucose curves. The first derivatives of the glucose traces defined and quantified the timing of rises, peaks, falls, and nadirs. Altogether, 24 datasets were used for the analysis of time differences between interstitial and blood glucose and between sensors in each patient. Time differences between blood and interstitial glucose ranged from 4 to 10 min, with the interstitial glucose lagging behind blood glucose in 81% of cases (95% CIs 72.5 and 89.5%). The mean (+/-SD) difference between the two sensors in each patient was 6.7 +/- 5.1 min, representing random variation in sensor response. In conclusion, there is a time lag of interstitial glucose behind blood glucose, regardless of whether glycemia is rising or falling, but intersensor variability is considerable in this sensor system. Comparisons of interstitial and blood glucose kinetics must take statistical account of variability between sensors.

1893. —. “The Relationship Among Circulating Insulin-Like Growth Factor (IGF) -1, IGF-Binding Proteins-1 and -2, and Birth Anthropometry: a Prospective Study.” Journal of Clinical Endocrinology and Metabolism 88.4 (2003): 1687-91.

Fetal IGF-I is a determinant of birth weight, but whether maternal IGF-I plays a significant role is controversial. We sought to examine the relationships among maternal IGF-I, IGF-binding protein (IGFBP)-1, and IGFBP-2, with maternal and newborn anthropometry, in a cohort of 325 nondiabetic pregnant women of African origin. Blood was collected for IGF-I, IGFBP-1, and IGFBP-2 at 9, 25, and 35 wk gestation and in cord blood at delivery. In the second and third trimesters, maternal IGF-I was significantly correlated ($P < 0.005$) with maternal body mass index and triceps skinfold thickness. Maternal IGFBP-1 and -2 had an inverse correlation ($P < 0.0001$), with maternal anthropometry. Maternal IGF-I at 35 wk, and fetal IGF-I by cord blood were significantly correlated with birth weight ($P = 0.001$ and 0.048 , respectively). IGFBP-1 in the third trimester and cord blood were negatively correlated with birth weight ($P = 0.012$ and 0.002). In multiple regression analyses, maternal IGF-I at 35 wk, fetal IGF-I, maternal weight at the first antenatal visit, gender, and gestational age were significant independent factors in the determination of birth weight. In conclusion, maternal IGF-I levels, especially during late pregnancy, positively influence birth weight.

Boyne, Michael S. See also 871, 1883, 1945, 1952

1894. **Brandelise, Sylvia, V. Pinheiro, C. S. Gabetta, Ian R. Hambleton, Beryl E. Serjeant, and Graham R. Serjeant.** “Newborn Screening for Sickle Cell Disease in Brazil: The Campinas Experience.” Clinical and Laboratory Haematology 26.1 (2004): 15-19. **Refereed**

Newborn screening for sickle cell disease commenced in 1992 in Sao Paulo State and by the end of 2000, the programme covered 78 institutions in 36 municipalities with the screening of 281,884 babies. Initially based on liquid cord blood samples, these are being replaced by dried filter paper capillary samples to ease handling and avoid diagnostic confusion from maternal contamination. The prevalence of sickle cell trait (2.0%) and HbC trait (0.6%) increased significantly between 1996 and 2000, apparently because of improved detection rather than the later introduction of institutions serving populations with higher trait frequencies. There were 29 babies with homozygous sickle cell SS disease and 26 with sickle cell-haemoglobin C (SC) disease, the latter significantly exceeding expectation and possibly attributable to a non - random selection of partners. Sickle cell-beta thalassaemia syndromes were proportionately more common than in Jamaica, and it is possible that this results from interaction with other Brazilian populations carrying higher beta thalassaemia gene frequencies. The frequency of abnormal haemoglobins in this population is lower than in Jamaica, but clinically significant sickle cell disease occurred once in every 5527 births, comparable with the frequencies of other significant inborn errors of metabolism.



1895. **Cooper, Richard S., Katharina Wolf-Maier, Amy Luke, Adebowale A. Adeyemo, Jose R. Banegas, Terrence E. Forrester, Simona Giampaoli, Micheal Joffres, Mika Kastarinen, Paola Primatesta, Birgitta Stegmayr, and Michael Thamm.** “An International Comparative Study of Blood Pressure in Populations of European vs. African Descent.” *BMC Medicine* 30.2 (2005).

<http://www.biomedcentral.com/1741-7015/3/2>. **Refereed**

The consistent finding of higher prevalence of hypertension in blacks in the United States compared to whites has led to speculation that African-origin populations are particularly susceptible to this condition. Large surveys now provide new information on the issue. **Method:** Using a standardized analysis strategy we examined prevalence estimates for 8 white and 3 black populations (N= 85,000 participants). **Results:** The range in hypertension prevalence was from 27 to 55% for whites and 14 to 44% for blacks. **Conclusions:** These data demonstrate that not only is there a wide variation in hypertension prevalence among both racial groups, the rates among blacks are not unusually high when viewed internationally. These data suggest that the impact of environmental factors among both populations may have been under-appreciated.

Cooper, Richard S. See also 1887, 1888, 1890, 1902, 1930, 1932, 1933, 1938, 1940, 1941, 1949, 1952, 1966, 1970

1896. **Creary, L., Colin A. McKenzie, Neil A. Hanchard, V. Taylor, Ian R. Hambleton, Terrence E. Forrester, and Thein S.** “Differences in Fetal Haemoglobin and F Cell Levels in Adults: Data From Afro-Caribbean, European and Afro-German Subjects.” *Fiftieth Annual Scientific Meeting of the Caribbean Health Research Council*: (Trinidad and Tobago: April 21-23, 2005).

Objective: To measure and compare levels of fetal haemoglobin (HbF) and erythrocytes containing HbF (F cells, FC) in healthy subjects from different ethnic groups, in order to assess the feasibility of mapping genes for these traits in subjects of admixed ethnicity. **Design and Methods:** Afro-Caribbean adults (aged 18 years and over) were recruited from among blood donors in Kingston, Jamaica. White Europeans were expatriates living and working in Kingston and Spanish Town, Jamaica. Afro-German adults were recruited from a German enclave community in rural Jamaica. HbF levels were determined by the alkaline denaturation test. FC levels were determined by fluorescence-activated cell sorting of peripheral blood reacted with a mouse monoclonal anti-globin chain antibody. **Results:** Data from 150 Afro-Caribbean, 44 European and 73 Afro-German HbAA subjects were available for analysis. In all three ethnic groups, the distribution of HbF and FC was continuous and positively skewed. The majority (~90%) of subjects in each group had FC levels of approximately 4% and HbF less than 1%. The median HbF and FC levels were 0.52% (IQR 0.42) and 3.51% (IQR 3.51) respectively in the Afro-Caribbean sample; 0.48% (IQR 0.51) and 2.85% (IQR 2.05) respectively in the European sample; 0.55% (IQR 0.41) and 3.20% (IQR 2.61) respectively in the Afro-German sample. There were no significant differences in HbF and FC levels between the three groups (HbF; $\chi^2 = 0.61$, $P = 0.74$ and FC; $\chi^2 = 5.42$, $P = 0.07$). **Conclusions:** These preliminary results suggest that ethnic differences in levels of HbF and FC are unlikely to be large. Further studies are required to confirm these findings.

1897. **Cummings, V., Susanna Ali, Terrence E. Forrester, Karen J. Roye-Green, and Marvin E Reid.** “Asymptomatic Bacteriuria in Sickle Cell Disease.” [Abstract]. *West Indian Medical Journal* 54 Suppl. 2 (2005): 39-40. **Refereed**

1898. **Downes, Susan M., Ian R. Hambleton, Elaine L. Chuang, Noemi Lois, Graham R. Serjeant, and Alan C. Bird.** “Incidence and Natural History of Proliferative Sickle Cell Retinopathy: Observations From a Cohort Study .” *Ophthalmology* (2005).
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Objective: To describe the incidence, prevalence, and natural history of proliferative sickle cell retinopathy (PSR). **Design:** Prospective longitudinal study over 20 years. **Participants:** Newborn screening of 100000 consecutive deliveries from 1973 to 1981 identified 315 children with homozygous sickle cell (SS) disease and 201 with SS hemoglobin C (SC) disease. By the age of 5 years, 307 SS patients and 166 SC patients were alive and living in Jamaica and were recruited for this ophthalmic study. **Methods:** Description of retinal vascular changes on annual angiography and angioscopy. **Main Outcome Measures:** Incidence and prevalence of PSR and its behavior on follow-up. Progression of PSR was investigated using the number of eyes affected (none, one, both) and the interval until PSR onset. **Results:** At last review in January 2000, PSR had developed in 59 patients (14 SS, 45 SC), unilaterally in 36 patients and bilaterally in 23. Incidence increased with age in both genotypes, with crude annual incidence rates of 0.5 cases (95% confidence interval [CI], 0.30.8) per 100 SS subjects and 2.5 cases (95% CI, 1.93.3) per 100 SC subjects. Prevalence was greater in SC disease, and by the ages of 24 to 26 years, PSR had occurred in 43% subjects with SC disease and in 14% subjects with SS disease. Patients with unilateral PSR had a 16% (11% SS, 17% SC) probability of regressing to no PSR and a 14% (16% SS, 13% SC) probability of progressing to bilateral PSR. Those with bilateral PSR had an 8% (8% SS, 8% SC) probability of regressing to unilateral PSR and a 1% (0 SS, 2% SC) probability of regressing to a PSR-free state. Irretrievable visual loss occurred in only 1 of 82 PSR-affected eyes, and 1 required detachment surgery and recovered normal visual acuity. **Conclusions:** Longitudinal observations over 20 years in a cohort of patients followed from birth confirms a greater incidence and severity of PSR in SC disease, and shows that spontaneous regression occurred in 32% of PSR-affected eyes. Permanent visual loss was uncommon in subjects observed up to the age of 26 years.

1899. **Ferguson, T. S., Novie O. Younger, Marshall K. Tulloch-Reid, M. B. Lawrence-Wright, Deanna E. Ashley, and Rainford J. Wilks.** "Prevalence of Prehypertension and Its Relationship to Other Risk Factors for Cardiovascular Disease in Jamaica." [Abstract]. West Indian Medical Journal 54 (Supplement 2) (2005): 20. **Refereed**

1900. **Forrester, Terrence E.** "Historic and Early Life Origins of Hypertension in Africans." The Journal of Nutrition 134.1 (2004): 211-16. <http://www.nutrition.org/cgi/reprint/134/1/211>. **Refereed** Cardiovascular disease (CVD) causes 12.4 million deaths annually, most (9.6 million) occurring in developing countries. Hypertension, the most common CVD, arises within the context of obesity, but the underlying mechanism remains obscure. Obesity and salt intake are two important risk factors for hypertension and are the focus of this paper. Traditional African populations show a low prevalence of hypertension, but the hypertension is more common in migrant African populations in the West than in other ethnic groups. One explanation is genetic, but no causative gene has been confidently identified. Nongenetic susceptibilities such as fetal programming are an alternative explanation. Hypothetically, fetal programming induced by transient stimuli permanently alters fetal structure and function at the cellular, organ and whole-body levels. Birth weight is inversely related to blood pressure and hypertension risk, suggesting that susceptibility to hypertension risk factors such as obesity and salt sensitivity are themselves programmed. In support of this hypothesis, obesity (especially central obesity) is also inversely related to size at birth. Likewise, salt sensitivity might derive from undernutrition in utero, reducing the nephron number and resetting the pressure-natriuresis curve rightward. However, no robust human data or evidence of enhanced salt sensitivity among African-origin populations exists. In the United States, blacks have a greater prevalence of low birth weight than whites, suggesting that the higher prevalence of hypertension among blacks is related to fetal programming. Nevertheless, the myriad other confounders of this relationship, including environmental and behavioural correlates of ethnicity, should be explored before concluding that excess risk of hypertension in Africans is programmed in utero.

1901. ——. "Research into Policy: Hypertension and Diabetes Mellitus in the Caribbean." West Indian Medical Journal 52.2 (2003): 164-69. **Refereed**

This work attempts to show how research in the Caribbean has informed, and will continue to inform policy and programmes in relation to hypertension and diabetes mellitus.



1902. **Forrester, Terrence E., Adebowale A. Adeyemo, Suzanne Soarres-Wynter, Lincoln A. Sargeant, Franklyn I. Bennett, Rainford J. Wilks, Amy Luke, E. Prewitt, Holly Kramer, and Richard S. Cooper.** “A Randomized Trial on Sodium Reduction in Two Developing Countries.” *Journal of Human Hypertension* 19 (2005): 55-60.

<http://www.nature.com/jhh/journal/v19/n1/pdf/1001782a.pdf>.

Hypertension remains the most common cardiovascular risk factor in developing countries, yet the majority of patients have no access to pharmacological therapy. Population-wide preventive strategies, such as salt restriction, are an attractive alternative, but experience in resource-poor settings is limited. To address this question, we conducted a randomized crossover study of salt restriction in adults living in Nigeria and Jamaica in order to estimate the mean blood pressure (BP) response. After a 4-week run-in period to determine willingness to adhere to a low salt diet, 56 Jamaicans and 58 Nigerians completed an 8-week crossover study of low-salt and high-salt intake. Baseline BPs were in the normotensive range (systolic = 125 mm Hg in Jamaica, 114 mm Hg in Nigeria). Baseline urinary sodium excretion was 86.8 and 125.6 mEq/day in Nigerian and Jamaica, respectively. The mean difference between urinary sodium excretion at baseline and at the end of the 3-week low-sodium phase was 33.6 mEq/day in Nigeria and 57.5 mEq/day in Jamaica. During the high-sodium phase, mean change in urinary sodium excretion from baseline to week 3 was 35.0 and 5.5mEq/day in Nigeria and Jamaica, respectively. The mean change in systolic BP (‘high’ vs. ‘low’ sodium phase) was approximately 5 mmHg in both groups. This study suggests that the efficacy of sodium reduction in developing countries equals those noted in more affluent cultures. If promoted on a wide scale, sodium reduction could be used to treat persons with established hypertension, and more importantly, to prevent age-related increases in BP in poor communities.

Forrester, Terrence E. See also 692, 846, 853, 983, 1879, 1882, 1883, 1884, 1885, 1887, 1888, 1889, 1890, 1892, 1893, 1895, 1897, 1913, 1915, 1916, 1917, 1918, 1924, 1926, 1928, 1933, 1935, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1947, 1948, 1949, 1952, 1957, 1965, 1966, 1967, 1970, 1971, 1972

1903. **Hambleton, Ian R., Kadene Clarke, Hedy L. Broome, Henry S. Fraser, Farley Brathwaite, and Anselm J. Hennis.** “Historical and Current Predictors of Self-Reported Health Status Among Elderly Persons in Barbados .” *Pan American Journal of Public Health* 17.5-6 (2005): 342-52.

Objective: To understand the relative contribution of past events and of current experiences as determinants of health status among the elderly in the Caribbean nation of Barbados, in order to help develop timely public health interventions for that population. **Methods:** The information for this prevalence study was collected in Barbados between December 1999 and June 2000 as part of the “SABE project,” a multicenter survey in seven urban areas of Latin America and the Caribbean that evaluated determinants of health and well-being in elderly populations (persons 60 and older). We used ordinal logistic regression to model determinants of self-reported health status, and we assessed the relative contribution of historical socioeconomic indicators and of three current modifiable predictor groups (current socioeconomic indicators, lifestyle risk factors, and disease indicators) using simple measures of association and model fit. **Results:** Historical determinants of health status accounted for 5.2% of the variation in reported health status, and this was reduced to 2.0% when mediating current experiences were considered. Current socioeconomic indicators accounted for 4.1% of the variation in reported health status, lifestyle risk factors for 7.1%, and current disease indicators for 33.5%. **Conclusions:** Past socioeconomic experience influenced self-reported health status in elderly Barbadians. Over half of this influence from past events was mediated through current socioeconomic, lifestyle, and disease experiences. Caring for the sick and reducing lifestyle risk factors should be important considerations in the support of the current elderly. In addition, ongoing programs for poverty reduction and increased access to health care and education should be considered as long-term strategies to improve the health of the future elderly.



1904. **Hambleton, Ian R., L. Linsell, Novie O. Younger, and Klaus J. Wierenga.** “Health-Status in Homozygous Sickle-Cell Disease: A Systematic Review of Prognostic Studies.” [Abstract]. West Indian Medical Journal 53 (Supplement 2) (2004): 83. **Refereed**

1905. **Hambleton, Ian R., and Klaus J. Wierenga.** “Identifying Homozygous Sickle Cell Disease When Neonatal Screening Is Not Available: a Clinic-Based Observational Study .” Journal of Medical Screening 11.4 (2004): 174-79.

Objectives: Life-threatening clinical complications can occur in the first years of life in people with homozygous sickle cell disease. There is consensus that a clinical care programme co-managed by a specialist clinic should follow early-life disease identification. In a setting without widespread neonatal screening for this disease, we predict the percentage of affected births that enroll in specialist clinics during childhood, and the percentage that enroll early enough to benefit from penicillin prophylaxis (which is offered until five years of age). **Setting:** A retrospective study of enrolment between 1973 and 1999 at three clinics in Jamaica, the country’s only referral centres for sickle cell disease. **Results:** Among enrollees not screened at birth, observed enrolment by age five was 10.1% (95% confidence interval [CI] 5.716.7%) among 1974 births, which is predicted to rise to 35.7% (95% CI 35.036.4%) among 1999 births. Observed enrolment by 18 years of age was 45.9% (95% CI 35.758.2%) among 1974 births, which is predicted to peak at 61.9% (95% CI 60.563.2%) among 1984 births, and fall to 48.9% (95% CI 40.956.9%) among 1999 births. Median age at enrolment was 10.5 years (95% CI 10.011.3). **Conclusions:** Based on 1999 estimates, almost 65% of children affected by homozygous sickle cell disease not identified at birth will not benefit from important early-life clinical intervention, and half will not enroll for specialised care by their 18th birthday. Among patients that enroll, half do so in adolescence when management is less focused on preventive care.

1906. **Hambleton, Ian R., Novie O. Younger, Kadene Clarke, and Klaus J. Wierenga.** “Measuring Non-Response in Prospective Cohort Studies: An Application to the Jamaican Study of Sickle-Cell Disease (JSSCD).” [Abstract]. West Indian Medical Journal 53 (Supplement 2) (2004): 83. **Refereed**

Hambleton, Ian R. See also 60, 791, 792, 798, 799, 815, 827, 834, 840, 910, 911, 965, 1880, 1881, 1894, 1896, 1908, 1909, 1910, 1918, 1925, 1953, 1954, 1969

1907. **Hanchard, Neil A.** “Genetic Susceptibility and Single-Nucleotide Polymorphisms.” Seminars in Neonatology [Continued As Seminars in Fetal and Neonatal Medicine] 10 (2005): 283-89.

The completion of the Human Genome Project has provided insight into human genetic variation, most commonly represented by single-nucleotide polymorphisms. There is presently a great deal of interest in linking genetic and phenotypic variation in the form of severity of and susceptibility to common multifactorial diseases. This article provides a background to recent advances in genetics, focusing on the application to common neonatal disorders and the practical difficulties of genetic association studies, as well as highlighting the potential impact on clinical practice.

1908. **Hanchard, Neil A., Ian R. Hambleton, Rosalind M. Harding, and Colin A. McKenzie.** “The Frequency of the Sickle Allele in Jamaica Has Not Declined Over the Last 22 Years.” British Journal of Haematology 130.6 (2005): 939-42. **Refereed**

The ‘malaria hypothesis’ predicts that the frequency of the sickle allele, which is high in malaria-endemic African populations, should decline with each generation in populations of African descent living in areas where malaria is no longer endemic. In order to determine whether this has been the case in Jamaica, we compared haemoglobin electrophoresis results from two hospital-based screening programmes separated by more than 20 years (i.e.



approximately one generation). The first comprised 100,000 neonates screened between 1973 and 1981; the second, 104,183 neonates screened between 1995 and 2003. The difference in frequency of the sickle allele was small (5.47% in the first cohort and 5.38% in the second screening cohort) and not significant ($Z = 1.23$, $P = 0.22$). The same was true of the sickle trait frequency (10.05% in the first cohort and 9.85% in the second, $Z = 1.45$, $P = 0.15$). These differences were smaller than predicted under simple deterministic models based on the malaria hypothesis, and suggest that these models may not capture important determinants of allele and trait frequency decline (or persistence) in contemporary populations. Refining the expectations for allele and trait frequency change for Jamaica and other similar populations is an area for future study.

1909. —. “Predicted Declines in Sickle Allele Frequency in Jamaica Using Empirical Data.”, 2005.

The high frequency of the sickle allele in some parts of Africa is understood to be a consequence of high malarial endemicity. One corollary of this is that the sickle allele frequency should be declining in populations of African ancestry that are no longer exposed to malaria. We have previously shown that there has been no change in sickle allele frequency in malaria-free Jamaica between two large-scale neonatal screening exercises conducted in 1973-1981 and 1995-2003. In order to evaluate the determinants of, and derive expected values for, sickle allele frequency in Jamaica, local empirical data were used to estimate the parameters of deterministic models of allele frequency decline. We found that although model predictions were broadly consistent with observed values in the 1973-1981 cohort, the predicted change in allele frequency between the two cohorts was larger than the observed, non-significant, reduction. Close agreement between predicted and observed values was only achieved by simulating a recent, marked increase in HbSS fitness. Thus, the “unexpected” persistence of the sickle allele in Jamaica may reflect the fact that the actual fitness among SS individuals is higher than previously realized. If true, our models suggest that without substantial changes in current screening and counseling practice, there will be little “natural” reduction in sickle allele frequency for several hundred years. Better estimates of relative fitness will be helpful in refining these predictions and may aid in assigning health care priorities in Jamaica and the African Diaspora.

1910. **Hanchard, Neil A., Ian R. Hambleton, and Colin A. McKenzie.** “The Frequency of the Sickle Allele in Jamaica: Analysis of Data From Two Neonatal Screening Cohorts.” Fiftieth Annual Scientific Meeting of the Caribbean Health Research Council: (Trinidad and Tobago : April 21-23, 2005).

Objective: To determine whether there has been a change in the frequency of the sickle allele in Jamaica over the past 30 years. **Design and Methods:** The authors compared haemoglobin electrophoresis results from a hospital-based screening programme for 104,183 neonates, born in the parishes of Kingston and St Andrew and St. Catherine (Jamaica) and carried out between 1995 and 2003, with a similar hospital-based screen of 100,000 neonates carried out between 1973 and 1981. **Results:** The authors found no significant difference in the frequency of the sickle trait or allele over the time-period evaluated (approximately one generation). Samples from St. Catherine had significantly different allele and trait frequencies than samples from Kingston ($P < 0.001$ and $P < 0.05$ respectively). Even after taking this heterogeneity into consideration, however, the differences between the two cohorts remained unremarkable. **Conclusions:** There has been no discernible change in the frequency of the sickle allele or trait in Jamaica over the past generation. This result appears to be at odds with the malaria hypothesis for the sickle allele, which, in general, predicts that in an environment in which malaria is not endemic, the frequency of the sickle allele should decline with each generation. Further work is required in order to test the validity of the assumptions made under the general malaria hypothesis for the contemporary Jamaican population.

1911. **Hanchard, Neil A., K. Rockett, C. Spencer, G. Coop, M. Pinder, M. Jallow, M. Kimber, G. McVean, R. Mott, and D. P. Kwiatkowski.** “Screening for Recently Selected Alleles by Analysis of Human Haplotype Similarity .” The American Journal of Human Genetics 78 (2006).

<http://www.journals.uchicago.edu/AJHG/journal/issues/v78n1/42724/42724.web.pdf>. **Refereed** There is growing interest in the use of haplotype based methods of detecting recent selection. The authors describe a method that uses a sliding window to estimate similarity among the haplotypes associated with any given SNP allele. They used simulations of natural selection to provide estimates of the empirical power of the method to detect



recently selected alleles, and found it to be comparable to the popular long range haplotype (LRH) test and more powerful than methods based on nucleotide diversity. The method was applied to a recently selected allele. The sickle mutation at the *HBB* locus, was found to have a signal of selection significantly stronger than simulated models both with and without strong selection. Using this method we also evaluated over 4000 SNPs on chromosome 20, indicating the applicability of the method to regional datasets.

1912. **Hanchard, Neil A., K. Rockett, I. Udalova, J. Wilson, B. Keating, O. Koch, A. Nijnik, M. Diakite, M. Herbert, and D. P Kwiatkowski.** “An Investigation of Transmission Ratio Distortion in the Central Region of the Human MHC.” *Genes and Immunity* (2005).

Transmission ratio distortion (TRD) describes a significant departure from expected Mendelian inheritance ratios that is fundamental to both the biology of reproduction and statistical genetics. The relatively high fetal wastage in humans, with consequent selection of alleles *in utero*, makes it likely that TRD is prevalent in the human genome. The central region of the human major histocompatibility complex (MHC) is a strong TRD candidate, as it houses a number of immune and regulatory genes that may be important in pregnancy outcome. We used a non-haplotype-based method to select 13 tagging SNPs from three central MHC candidate regions, and analysed their transmission in 380 newborns and their parents (1138 individuals). A TRD of 54:46 was noted in favour of the common allele of a promoter SNP in the *CLIC1* gene ($P = 0.025$), with a similar distortion using haplotypes across the same gene region ($P = 0.016$). We also found evidence that markers in the *CLIC1* gene region may have been subject to recent selection ($P < 0.001$). The study illustrates the potential benefits of screening for TRD and highlights the difficulties encountered therein.

Hanchard, Neil A. See also 1896, 1934, 1939

1913. **Hanson, Mark, Peter Gluckman, Dennis Bier, John Challis, Tom Fleming, Terrence E. Forrester, Keith Godfrey, Penelope Nestel, and Chittaranjan Yajnik.** “Report on the Second World Congress on Fetal Origins of Adult Disease .” *Pediatric Research* 55.5 (2004): 894-97.

<http://www.pedresearch.org/cgi/reprint/01.PDR.0000115682.23617.03v1>.

In 1989, reports suggested that the fetal environment, as reflected in birth size, was related to the risk of noncommunicable diseases in adult life. This association was first described for coronary heart disease but rapidly extended to include type 2 diabetes, osteoporosis, and metabolic and endocrine homeostasis. This led to the development of the fetal origins of adult disease paradigm, which resulted in a refocusing of research effort over the next 10 y to consider the lifelong consequences of perinatal influences on chronic diseases. Previously, perinatal influences had largely been seen in terms of teratogenic effects or acute birth injury rather than whether trajectories and responses made during early development had lifelong consequences. Indeed, in developmental biology, it is widely recognized that adaptive plastic responses during early development often have consequences for function in later adulthood. Although the relative importance of this newly recognized set of phenomena to the burden of human disease has been controversial, the research precipitated by those early observations has confirmed their robustness and started to provide a mechanistic basis to this biology. Two world congresses have been held to review progress in this research. Both have been characterized by a unique multidisciplinary attendance ranging from molecular, experimental, and developmental biologists to epidemiologists and health economists.

1914. **Hardie, Joseph. M., Marvin E. Reid, Horace M. Fletcher, Shaun H. Wynter, and C. Frederick.** “Operative Morbidity and Reproductive Outcome in Secondary Myomectomy: A Prospective Cohort Study.” *Human Reproduction* 17.11 (2002): 2967-71.

<http://humrep.oxfordjournals.org/cgi/content/full/17/11/2967>. **Refereed**

Background: This prospective study was designed to evaluate the operative morbidity and reproductive outcome in patients who had secondary myomectomy for recurrent symptomatic uterine fibroids. **Methods:** A total of 58 women were subjected to a secondary myomectomy via the abdominal route. The operative morbidity such as blood loss, presence of adhesions and febrile index were estimated and the pregnancy outcome over a 2-4 year period of follow-up were recorded. **Results:** The mean age and standard deviation (+/- SD) of the women was 35 (+/- 2.4) years.



Nineteen patients (33%) had a postoperative temperature vertical line of 100 degrees F and the estimated blood loss ranged from 159-2500 ml (median 700 ml). Seven patients (12%) required blood transfusion and one had a hysterectomy due to haemorrhage. Nine women (15.5%) became pregnant but only five (56%) had live births. Those with successful pregnancies tended to be younger with a mean age of 31.8 (+/- 2.6) years versus 35 (+/- 1.8) years, ($P = 0.08$, non-significant) and had fewer uterine leiomyomata; with median range values, 2 (1-6) versus 7 (6-15). The variables which best predicted the postoperative likelihood of pregnancy were: age, presence of tubal adhesions and the number of uterine fibroids. **Conclusion:** This prospective study showed a high operative morbidity and a poor fertility outcome after a repeat myomectomy. The factors affecting successful outcome in a logistic regression model were age, tubal adhesions and number of uterine fibroids.

1915. **Haverfield, Eden V., Colin A. Mckenzie, Terrence E. Forrester, Nouridine Bouzekri, Rosalind M. Harding, Graham R. Serjeant, Thomas Walker, Tim E. A. Peto, Ryk Ward, and David J. Weatherall.** "UGT1A1 Variation and Gallstone Formation in Sickle Cell Disease."

Blood 105.3 (2005): 968-72. **Refereed**

Pigment gallstones are a common clinical complication of sickle cell (SS) disease. Genetic variation in the promoter of uridine diphosphate (UDP)-glucuronosyltransferase 1A1 (UGT1A1) underlies Gilbert syndrome, a chronic form of unconjugated hyperbilirubinemia, and appears to be a risk factor for gallstone formation. We investigated the association between UGT1A1 (TA)(n) genotype, hyperbilirubinemia, and gallstones in a sample of Jamaicans with SS disease. Subjects were from the Jamaican Sickle Cell Cohort Study (cohort sample, $n = 209$) and the Sickle Cell Clinic at the University of the West Indies, Kingston, Jamaica (clinic sample, $n = 357$). The UGT1A1 (TA)(n) promoter region was sequenced in 541 SS disease subjects and 111 healthy controls (control sample). Indirect bilirubin levels for (TA)(7)/(TA)(7) and (TA)(7)/(TA)(8) genotypes were elevated compared with (TA)(6)/(TA)(6) (clinic sample, $P < 10(-5)$; cohort sample, $P < 10(-3)$). The (TA)(7)/(TA)(7) genotype was also associated with symptomatic presentation and gallstones in the clinic sample (odds ratio [OR] = 11.3; $P = 7.0 \times 10(-4)$) but not in the younger cohort sample. These unexpected findings indicate that the temporal evolution of symptomatic gallstones may involve factors other than the bilirubin level. Although further studies of the pathogenesis of gallstones in SS disease are required, the (TA)(7)/(TA)(7) genotype may be a risk factor for symptomatic gallstones in older people with SS disease.

1916. **Jahoor, Farook, Asha V. Badaloo, Marvin E. Reid, and Terrence E. Forrester.** "Protein Kinetic Differences Between Children With Edematous and Nonedematous Severe Childhood Undernutrition in the Fed and Postabsorptive States." American Journal of Clinical Nutrition 82.4 (2005): 792-800. **Refereed**

Background: Pathogenic factors that cause a child to develop the edematous instead of the nonedematous form of severe childhood undernutrition (SCU) during food deprivation are not clear. It was hypothesized that, in edematous, but not nonedematous SCU, impaired protein breakdown leading to inadequate amino acids for maintenance of important organ systems was a factor. **Objective:** Protein kinetics in children with edematous and nonedematous SCU were measured. **Design:** Endogenous leucine flux, an index of whole-body protein breakdown rate, was determined in 4 groups of children with edematous or nonedematous SCU in the malnourished and recovered states. Two groups were studied in the postabsorptive state, and 2 groups were studied in the fed state.

Results: In the postabsorptive state, leucine flux was slower ($P < 0.01$) in the edematous group than in the nonedematous group in the malnourished state, but in the recovered state, it was faster ($P < 0.05$) in the children who previously had edematous SCU. When compared with the malnourished state value, leucine flux at recovery doubled in the group that previously had edematous SCU, but it did not change in the other group. In the fed state, leucine flux was slower ($P < 0.01$) in the edematous group than in the nonedematous group in the malnourished state but not in the recovered state. In the recovered state, enteral leucine extraction by splanchnic tissues trended higher in the group that previously had edematous SCU than in the nonedematous group. **Conclusion:** These findings indicate different protein breakdown responses to food deprivation between children with edematous and nonedematous SCU and inherent differences in protein metabolism when they have recovered.



1917. —. “Protein Kinetic Differences Between Children With Edematous and Non-Edematous Protein-Energy Malnutrition in the Fed and Fasted States.” [Abstract]. West Indian Medical Journal Volume 54 (Supplement 2) (2005): 36. **Refereed**

1918. **Kalra, Lalit, Curtis Rambaran, Philip Chowiencyk, David Goss, Ian R. Hambleton, James Ritter, Ajay Shah, Rainford J. Wilks, and Terrence E. Forrester.** “Ethnic Differences in Arterial Responses and Inflammatory Markers in Afro-Caribbean and Caucasian Subjects.” Arteriosclerosis, Thrombosis, and Vascular Biology 25 (2005): 2362-67. **Refereed**

Objective: Small vessel disease is more common in Afro-Caribbeans than Caucasians. The authors investigated underlying differences in metabolic, inflammatory, and vascular responses that may predispose Afro-Caribbeans to small vessel pathology. **Methods and Results:** Seventy-eight Afro-Caribbeans aged 35-75 years, with no vascular disease or medications, were compared with 82 matched Caucasians for metabolic variables, fasting insulin, interleukin 6, tumor necrosis factor (TNF) alpha, and cytoplasmic repressor protein levels. Carotid intima media thickness (CIMT) was measured ultrasonographically. Small vessel function was assessed by measuring the absolute change from baseline in the reflectance index (RI) of the digital volume pulse during IV infusion of albuterol (5 microg/min, DeltaRIALB) and GTN (5 microg/min, DeltaRIGTN). Large artery elasticity was measured as the stiffness index (SI) and derived from the time to pulse wave reflection adjusted for subject height. Afro-Caribbeans had significantly higher diastolic blood pressure (80.3 versus 77.6 mm Hg; $P=0.033$), fasting insulin (14.0 versus 10.6 microU/mL; $P=0.026$), TNF-alpha (6.7 versus 4.3; pg/mL; $P=0.001$), and interleukin 6 (2.3 versus 1.5 pg/mL; $P=0.036$) levels compared with Caucasians. CIMT was greater (0.81 ± 0.20 versus 0.75 ± 0.18 mm; $P=0.02$) and small vessel reactivity attenuated (mean DeltaRIALB $6.8\pm 8.0\%$ versus $12.3\pm 8.0\%$; $P<0.0001$) in Afro-Caribbeans, but their large artery elasticity (mean index of large artery stiffness 9.9 versus 9.7 m/s; $P=0.48$) was comparable with Caucasians. CIMT was independently associated with an index of large artery stiffness ($\beta=0.03$; $P=0.002$) in Caucasians but not in Afro-Caribbeans. There were independent relationships among Afro-Caribbean ethnicity, TNF-alpha, and insulin levels. **Conclusions:** Selective impairment of small artery function may contribute to excess small vessel disease in Afro-Caribbeans.

1919. **Keavney, Bernard, Alison Palmer, Sarah Parish, Sarah Clark, Linda Youngman, John Danesh, Colin A. McKenzie, Marc Delepine, Mark Lathrop, Richard Peto, and Rory Collins.** “Lipid-Related Genes and Myocardial Infarction in 4685 Cases and 3460 Controls: Discrepancies Between Genotype, Blood Lipid Concentrations, and Coronary Disease Risk.” International Journal of Epidemiology 33.5 (2004): 1002-13.

Background: Blood lipid concentrations are causally related to the risk of coronary heart disease (CHD). Various associations between CHD risk and genes that moderately affect plasma lipid levels have been described, but previous studies have typically involved too few ‘cases’ to assess these associations reliably. **Methods:** The present study involves 4685 cases of myocardial infarction (MI) and 3460 unrelated controls without diagnosed cardiovascular disease. Six polymorphisms of four ‘lipid-related’ genes were genotyped. **Results:** For the apolipoprotein E epsilon2/epsilon3/epsilon4 polymorphism, the average increase in the plasma ratio of apolipoprotein B to apolipoprotein A(1) (apoB/apoA(1) ratio) among controls was 0.082 (s.e. 0.007) per stepwise change from epsilon3/epsilon2 to epsilon3/epsilon3 to epsilon3/epsilon4 genotype (trend $P < 0.0001$). The case-control comparison yielded a risk ratio for MI of 1.16 (95% CI: 1.06, 1.27; $P = 0.001$) per stepwise change in these genotypes. But this risk ratio was not as extreme as would have been expected from the corresponding differences in plasma apoB/apoA(1) ratio between genotypes. Hence, following adjustment for the measured level of the plasma apoB/apoA(1) ratio, the direction of the risk ratio per stepwise change reversed to 0.83 (95% CI: 0.74, 0.92; $P < 0.001$). Similarly, for the apolipoprotein B Asn431Ser and Thr71Ile polymorphisms, genotypes associated with more adverse plasma apolipoprotein concentrations were associated with significantly lower risk of MI after adjustment for the apoB/apoA(1) ratio. The B2 allele of the cholesterol ester transfer protein TaqIb polymorphism was associated with a significantly lower plasma apoB/apoA(1) ratio, but with no significant difference in the risk of MI. Finally, the lipoprotein lipase Asn291Ser and T4509C (PvuII) polymorphisms did not produce clear effects on



either the plasma apoB/apoA(1) ratio or the risk of MI. **Conclusions:** It remains unresolved why some of these genetic factors that produce lifelong effects on plasma lipid concentrations have significantly less than the correspondingly expected effects on CHD rates in adult life.

1920. **Keavney, Bernard, Sarah Parish, Alison Palmer, Sarah Clark, Linda Youngman, John Danesh, Colin A. McKenzie, Marc Delepine, Mark Lathrop, Richard Peto, and Rory Collins.** “Large-Scale Evidence That the Cardiotoxicity of Smoking Is Not Significantly Modified by the Apolipoprotein E Epsilon2/Epsilon3/Epsilon4 Genotype.” The Lancet 361.9355 (2003): 396-98. Results from two studies, involving a total of only 174 cases have suggested that the increased risk of coronary heart disease conferred by cigarette smoking is substantially affected by genotype at the apolipoprotein E (APOE) epsilon2/epsilon3/epsilon4 polymorphism. The authors have established APOE genotypes in 4484 patients with acute myocardial infarction diagnosed before the age of 55 years for male and 65 years for female patients, and in 5757 controls with no history of cardiovascular disease. On average, the hazard ratio for myocardial infarction was 1.17 (95 % CI 1.09- 1.25; $p < 0.00001$) per stepwise change from epsilon3/2 to epsilon3/3 to epsilon3/4 genotype. Among individuals in this study with known cigarette smoking status, the hazard ratio for myocardial infarction in smokers versus non-smokers was 4.6 (4.2- 5.1). There was, however, no significant difference between the smoker/non-smoker hazard ratios for those with different APOE genotypes ($\chi^2(2) = 0.69$; $p = 0.7$). When difference in risk between different genotypes is not extreme (as with this APOE polymorphism), reliable assessment of hypothesised gene-environment interactions will often require the study of many thousands of disease cases

1921. **Knight-Madden, Jennifer M.** “Acute Chest Syndrome in Sickle Cell Disease.” Postgraduate Doctor Caribbean 18.4 (2002): 105-08.

Sickle cell disease (SCD) is prevalent in many countries. The acute chest syndrome (ACS) is the single most common cause of premature death in persons with SCD, and recurrent ACS is the major predictor of subsequent chronic sickle cell lung disease (SCLD). ACS is characterised by respiratory symptoms and/or signs, with a new infiltrate on chest radiograph. One of several causes of ACS is infection, in which case the condition may require special management because of the immune deficiency associated with SCD. Oxygen, antibiotics, transfusion and physiotherapy are the mainstay of treatment.

1922. ——. “The Caribbean.” Childhood Asthma and Other Wheezing Disorders. Editor Michael Silverman. 2nd. ed. London: Arnold Publishers , 2002. 453-54 .

Explores the prevalence of asthma in the Caribbean region and provides statistics related to various islands. Reference is also made to the means of clinical diagnosis and the management and treatment of the disease.

1923. **Knight-Madden, Jennifer M., Michelle Barton-Forbes, Nischal Gandretti, and Alison M. Nicholson.** “Photobacterium Damsela Bacteremia in a Child With Sickle Cell Disease.” The Pediatric Infectious Disease Journal 24.7 (2005): 654-55.

Photobacterium damsela was identified in a blood culture taken from a child with sickle-cell disease. This is the first report of this organism in humans in the Caribbean. The microbiology of this organism and its identification are discussed. The clinical presentation in humans and the role of the immune status of the patient are reviewed.

1924. **Knight-Madden, Jennifer M., Terrence E. Forrester, N. A. Lewis, and Anne Greenough.** “Asthma in Children With Sickle Cell Disease and Its Association With Acute Chest Syndrome .” Thorax 60 (2005): 206-10.

Background: Pulmonary complications are a major cause of morbidity and mortality in sickle cell disease (SCD). The relationship of asthma with SCD and acute chest syndrome (ACS) remains uncertain. A study was undertaken to test the hypotheses that asthma and bronchial hyperreactivity (BHR) are more common in children with SCD than in ethnic matched controls, and that SCD children with atopic asthma are more likely to have recurrent episodes of



ACS. **Methods:** A modified International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire was administered and skin prick tests undertaken in 80 children with SCD and 80 ethnic matched controls aged 5–10 years. BHR was assessed by measurement of forced expiratory volume in 1 second before and after a bronchodilator (albuterol 200 µg) or an exercise challenge. **Results:** Asthma (48% v 22%, $p = 0.002$) and BHR ($p = 0.02$) but not atopy were more common in children with SCD than in controls. Atopy (66.6% v 29%, $p = 0.007$) and asthma (80% v 40%, $p = 0.005$), particularly atopic asthma (53% v 12%, $p < 0.001$), was more common in children with SCD who had suffered recurrent episodes of ACS than in those who had suffered a single or no episode. **Conclusions:** Asthma and BHR are more common in children with SCD than in ethnic matched controls, and atopic asthma appears to be associated with recurrent ACS. Early and effective anti-asthma therapy might reduce the pulmonary morbidity associated with SCD.

1925. **Knight-Madden, Jennifer M., and Ian R. Hambleton.** “Inhaled Bronchodilators for Acute Chest Syndrome in People With Sickle Cell Disease.” *The Cochrane Database of Systematic Reviews*. 2 (2005).

Background: Bronchodilators are used to treat bronchial hyper-responsiveness in asthma. Bronchial hyper-responsiveness may be a component of acute chest syndrome in people with sickle cell disease. Therefore, bronchodilators may be useful in the treatment of acute chest syndrome. **Objectives:** To assess the benefits and risks associated with the use of bronchodilators in people with acute chest syndrome. **Search strategy:** Searches were carried out on the Cochrane Cystic Fibrosis and Genetic Disorders Group Trials Register comprising references identified from comprehensive electronic database searches, hand searches of relevant journals, abstracts, books and conference proceedings. Additional searches were carried out on MEDLINE (1966 to 2002) and EMBASE (1981 to 2002). The date of the most recent search of the Group’s Haemoglobinopathies Trials Register was February 2005. **Selection criteria:** Randomised or quasi-randomised controlled trials. Trials using quasi-randomisation methods will be included in future updates of this review if there is sufficient evidence that the treatment and control groups are similar at baseline. **Data collection and analysis:** No trials investigating the use of bronchodilators for acute chest syndrome in people with sickle cell disease were found. **Main results:** We found no trials investigating the use of bronchodilators for acute chest syndrome in people with sickle cell disease. **Authors’ conclusions:** If bronchial hyper-responsiveness is an important component of some episodes of acute chest syndrome in people with sickle cell disease, the use of inhaled bronchodilators may be indicated. There is need for a well-designed, adequately-powered randomised controlled trial to assess the benefits and risks of the addition of inhaled bronchodilators to establish therapies for acute chest syndrome in people with sickle cell disease. **Synopsis:** Evidence is needed to determine whether bronchodilators (asthma drugs) can help people with sickle cell disease who have acute chest syndrome (ACS). Sickle cell disease (SCD) is an inherited blood disorder. People with SCD often experience acute chest syndrome (ACS), although it is not known why. ACS can cause fever, coughing, chest pain, shortness of breath and pain, and can be life-threatening. Often, people with SCD and ACS also wheeze, suggesting that breathing passages (airways) are narrowed, as with asthma. Bronchodilators (reliever inhalers) relax the muscles in the airways, opening the airways so breathing is easier. They are commonly used for asthma. However, no trials to show the effects of these inhaled bronchodilators for ACS in people with SCD were found.

1926. **Knight-Madden, Jennifer M., N. A. Lewis, Terrence E. Forrester, and Anne Greenough.** “A History of Acute Chest Syndrome Is Associated With Decreased Pulmonary Function in Young Adults With Sickle Cell Disease.” *West Indian Medical Journal* 51 (Supplement 2) : 1-50. **Refereed** (Also appears in the Proceedings of the Caribbean Health Research Council’s 47th Annual Council and Scientific Meeting. Cara Inn Hotel, Guyana. April 24-27, 2002. Edited by Edward N. Barton). **Objective:** To determine whether a history of acute chest syndrome (ACS) and / or asthma decreases the forced respiratory flow in one second (FEV1) in patients with sickle cell diseases. **Design and Methods:** Eighty patients with sickle cell disease (haemoglobin SS) were randomly selected from the Jamaican Sickle Cell Cohort Study. All respiratory episodes recorded in their charts were coded as acute chest syndrome, asthma episode or other. Eighty AA controls for the study were recruited for comparison. Weight, standing and sitting heights and arms span were



measured in all subjects. Spirometry was performed according to European Respiratory Standard. The correlation between anthropometric variables and FEV₁ was determined. Univariate general linear models were fit for the FEV₁ with independent variables and the impact of adding number of episodes of ACS and number of episodes of acute bronchospasm determined. **Results:** All anthropometric variables except height were greater in controls with haemoglobin AA. Correlation of FEV₁ was highest with arm span (0.703), sitting height (0.677) and height (0.683). A model with all subjects with gender, genotype, and anthropometric variables had an adjusted R² of 0.654, and in patients with HbSS disease only, an adjusted R² of 0.588 with the only significant variables being gender (p=0.003). Addition of the respiratory variables increased the adjusted R² to 0.675 and the variable which remained significant was ACS (p=0.000). **Conclusion:** A history of ACS, but not episodes of bronchospasm, is associated with a lower FEV₁.

1927. **Knight-Madden, Jennifer M., Michelle Moo Sang, and Paul S. Ramphal.** “Trap-Door Sternum in Sickle Cell Disease.” *The Journal of Pediatrics* 146.6: 845.

The authors present a case report of a boy with sickle cell disease who was admitted after presenting with painful crisis and Salmonella nontype sepsis. They describe the treatment for the dislocation of a sternal ossification centre or “trap door sternum”.

1928. **Knight-Madden, Jennifer M., Marvin E. Reid, Novie O. Younger, Terrence E. Forrester, and Anne Greenough.** “Comparison Between Two Spirometers in the Measurement of Pulmonary Function in Adults and Children With Sickle Cell Disease and Controls.” *West Indian Medical Journal* 53 (Supplement 5) (2004): 1-42. **Refereed**

(Presented at the 13th Annual Research Conference and Workshop on Violence and Violence prevention. November 10-12, 2004. Faculty of Medical Sciences. University of the West Indies, Mona. Kingston, Jamaica.)

Objective: To determine whether the pulmonary function tests (PFTs) obtained using the Vitalograph pneumotachograph based spirometer varied significantly from those obtained using the Morgan TLC rolling seal spirometer in adults and children with sickle cell disease (SCD) and AA controls. This comparison can determine whether spirometer measurements in patients with SCD accrued using different spirometers should be pooled for analysis. **Method:** Eighty subjects were recruited to each of the four subjects groups: adults (age 24.7 ± 2.4 years) and children (7.7 ± 1.3 years) with SCD and controls. Pulmonary function tests were performed pre and post exercise or bronchodilator challenges using both the Vitalograph and the Morgan TLC spirometers. Forced vital capacity (FVC), forced expiratory low in one second (FEV₁) and peak flow (PF) data were analyzed by correlation and random effects models using the Stata SE8. **Results:** Measured values of FVC and FEV₁ on each spirometer correlated well ($r > 0.93$, $p < 0.05$). Random effects modeling demonstrated that the Vitalograph yielded significantly lower values of FVC and FEV₁ in adults and children of both genotypes in pre and post tests ($p < 0.001$) and lower values of PF in children only ($p = 0.028$). There was no interaction between spirometer and genotype in children. In adults, the difference between the values of FVC and FEV₁ yielded by the two spirometers was less in patients with SCD. **Conclusion:** The FVC and FEV₁ were lower when measured by the Vitalograph than when measured by the Morgan TLC in all patient groups.

1929. **Knight-Madden, Jennifer M., and Novie O. Younger.** “Smoking Behaviour in Adults With Sickle Cell Disease.” [Abstract]. *West Indian Medical Journal* 50 (Supplement 2): 29. **Refereed**

1930. **Kramer, Holly, Xiaodong Wu, Donghui Kan, Amy Luke, Xiaofeng Zhu, Adebowale A. Adeyemo, Colin A. McKenzie, and Richard S. Cooper.** “Angiotensin-Converting Enzyme Gene Polymorphisms and Obesity: An Examination of Three Black Populations.” *Obesity Research* 13 (2005): 823-28.

The study examined the association between obesity and 13 angiotensin-converting enzyme (ACE) gene polymorphisms, including the presence (I) or absence (D) of an Alu element in intron 16 (I/D polymorphism), and



performed haplotype analysis using data collected from participants of a community survey of hypertension among blacks living in Ibadan, Nigeria; Spanish Town, Jamaica; and Chicago, IL. Transmission distortion of ACE gene polymorphisms and haplotypes from heterozygous parents to affected offspring was examined in each study population. To estimate haplotypes, polymorphisms were divided into three groups based on their position on the ACE gene. No ACE gene polymorphism was consistently over transmitted from parents to obese offspring among the three populations. However, the haplotype ACE1- ACE5 TACAT, located in the promoter region, was significantly over transmitted from parents to obese offspring in both the U.S and Nigerian populations. No haplotype was significantly over-transmitted from parents to obese offspring among the Jamaicans. In conclusion, it was noted that the over transmission of a particular ACE gene promoter region haplotype from parents to obese offspring occurred in two separate black populations. These data suggest that ACE gene polymorphisms may influence the development of weight gain.

1931. **Landen, Charles N., Novie O. Younger , Beth A. Collins Sharp, and Paul B. Underwood.** “Cancer Patients’ Satisfaction With Physicians: Princess Margaret Hospital Satisfaction With Doctor Questionnaire Results .” American Journal of Obstetrics and Gynecology 188.5 (2003): 1177-79. **Refereed**

Objective: The study was performed to examine the satisfaction of a specific population of oncology patients with their physicians and to quantify its association with characteristics of their disease. **Study Design:** A descriptive design was used in which patients attending a weekend cancer support retreat completed the Princess Margaret Hospital Satisfaction with Doctor Questionnaire (PMH-PSQ-MD). Demographic information was requested separately. **Results:** Of 48 patients, 96% completed the PMH-PSQ-MD, and 67% mailed in the additional demographics. Average overall score was 3.08 (SD = 0.56, 4 being most satisfied). Patients reported a desire for more time with physicians and that their pain be better understood. Patients were most satisfied with the physician’s honesty, thoroughness, and communication. Satisfaction scores did not correlate with intensity of treatment or time since diagnosis. Scores declined as financial burden of therapy increased, but the trend was not statistically significant. **Conclusion:** Patients attending this retreat were generally satisfied with their physicians, regardless of treatment intensity. Increasing financial burden may be associated with physician dissatisfaction.

1932. **Luke, Amy, Adebowale A. Adeyemo, Holly Kramer, Terrence E. Forrester, and Richard S. Cooper.** “Association Between Blood Pressure and Resting Energy Expenditure Independent of Body Size .” Hypertension 43.3 (2004): 555-60. <http://hyper.ahajournals.org/cgi/reprint/43/3/555>.

Refereed

Obesity is an important risk factor for hypertension, however, the pathway through which it raises blood pressure (BP) is poorly understood. Since body size is also the primary determinant of energy expenditure, the authors, examined the joint relationship of energy expenditure and body size to blood pressure. Resting energy expenditure (REE) was measured using respiratory gas exchange in population-based samples of 997 Nigerians and 452 African Americans. In a third sample of 118 individuals, non-resting energy expenditure (ie physical activity) was measured in addition to REE. The univariate correlation between REE and BP ranged from 0.10 to 0.22 in the 3 samples ($P < 0.001$). In multivariate models, adiposity, whether defined by body mass, fat mass, or leptin, was no longer associated with BP, while REE adjustment for physical activity measured with doubly labeled water. The odds ratio for hypertension among persons in the highest quartile versus the lowest quartile of REE, after adjustment for body size, was 1.7. This relationship was not the result of hypertension among the obese, because it did not vary across the range of BMI and was the same in lean Nigerians as in obese Americans. These data suggest that metabolic processes represented by REE may mediate the effect of body size on BP. The interrelationship of REE with sympathetic tone, transmembrane ion exchange, or physiological explanations for this observation.

1933. **Luke, Amy, Holly Kramer, Adebowale A. Adeyemo, Terrence E. Forrester, Rainford J. Wilks, Dale Schoeller, Cinthia Leman, and Richard. S. Cooper.** “Relationship Between Blood Pressure and Physical Activity Assessed With Stable Isotopes.” Journal of Human Hypertension 19.2 (2005): 127-32.

Intrapopulation and interpopulation variation in blood pressure (BP) often reflects the joint effect of a complex set of



risk factors, including lifestyle factors such as physical activity, diet, smoking and alcohol use. This study sets out to quantify the impact of habitual levels of physical activity on BP within and between three populations at contrasting levels of population risk of hypertension. Individuals were randomly sampled from communities in Nigeria (n=57), Jamaica (from Kingston, n=35) and the United States (from the Chicago area, n=32). Activity energy expenditure (AEE) (estimated from resting energy expenditure measured by indirect calorimetry and total expenditure measured with doubly labeled water) was used as an objective estimate of physical activity. In each of the three samples, there was a consistent negative correlation between BP and AEE. This negative association persisted after adjustment for age, sex and body fat (body mass index or percent fat mass). In multivariate models, adiposity was no longer a significant predictor of BP after accounting for low AEE. In conclusion these data suggest that habitual levels of physical activity may have a generalizable relationship with BP in populations with widely different social and environmental characteristics.

1934. **Luoni, G., J. Forton, M. Jallow, Akha E. Sadighi, F. Sisay-Joof, M. Pinder, Neil A. Hanchard, M. Herbert, M. Kimber, R. Mott, J. Hull, K. Rockett, and D. P. Kwiatkowski.** "Population-Specific Patterns of Linkage Disequilibrium in the Human 5q31 Region." Genes and Immunity (2005).

(Advanced Online Publication - July 28, 2005)

Linkage disequilibrium across the human genome is generally lower in West Africans than Europeans. However in the 5q31 region, which is rich in immune genes, we find significantly more examples of apparent nonrecombination between distant marker pairs in West Africans. Much of this effect is due to SNPs that are absent in Europeans, possibly reflecting recent positive selection in the West African population.

1935. **Marshal, K. G., Marvin E. Reid, Asha V. Badaloo, S. Howell, W. Farral, Terrence E. Forrester, and Colin A. McKenzie.** "Genetic Determinants of Susceptibility to Oedematous Severe Childhood Malnutrition: A Pilot Study." [Abstract]. West Indian Medical Journal 53 (Supplement 2) (2004): 20. **Refereed**

1936. **Marshal, K. G., Marvin E. Reid, Asha V. Badaloo, S. Howell, Martin Farral, Terrence E. Forrester, and Colin A. McKenzie.** "Four Functional Variants in Three Methyl-Group Metabolism Genes: No Evidence of Association With Oedematous Severe Childhood Malnutrition." [Abstract]. West Indian Medical Journal 54 (2005): 68 (Supplement 2). **Refereed**

1937. **McKenzie, Colin A., Rosalind M. Harding, Jennifer Brown Tomlinson, Amanda J. Ray, Kazumasa Wakamatsu, and Jonathan L. Rees.** "Phenotypic Expression of Melanocortin-1 Receptor Mutations in Black Jamaicans." Journal of Investigative Dermatology 121.1: 207-08. Investigates the phenotypic expression of melanocortin-1 receptor mutations in black Jamaicans. Analysis of the hair melanins of four red-haired Jamaicans; expression of hair melanins as a logarithm to the concentrations of eumelanin and pheomelanin.

1938. **McKenzie, Colin A., Janet S. Sinsheimer, Adebowale A. Adeyemo, Roger D. Cox, Lorraine Southam, Alison Hugill, Nouridine Bouzekri, Mark Lathrop, Terrence E. Forrester, Richard S. Cooper, and Ryk Ward.** "SNP Haplotypes in the Angiotensin I-Converting Enzyme (ACE) Gene: Analysis of Nigerian Family Data Using Gamete Competition Models ." Annals of Human Genetics 69.2 (2005): 227-32. **Refereed**

Gamete competition models were used to explore the relationships between 13 ACE gene polymorphisms and plasma ACE concentration in a set of Nigerian families. Several markers in the 5 and 3 regions of the gene were significantly associated with ACE concentration ($P < 10^{-6}$). The 5 UTR and the 3 region of the gene were also analysed; in addition to G2350A, in the 3 region, two markers from the 5 UTR (A-5466C and A-240T) were found to be



associated with ACE concentration. These results are consistent with reports that have suggested the presence of at least two ACE-linked QTLs, and demonstrate the utility of gamete competition models in the exploratory investigation of the relationship between a quantitative trait and multiple variants in a small genomic region.

1939. **McKenzie, Colin A., Kazumasa Wakamatsu, S. Ito, Neil A. Hanchard, and Terrence E. Forrester.** "Total Melanin Content of Hair Is Decreased in Childhood Malnutrition." Nineteenth International Pigment Cell Conference (IPCC): A Focus on Human Pigmentary Diseases: (Reston, Virginia: September 18-22, 2005): Hyatt Regency Reston, 2005.

Severe malnutrition in children is known to be associated with visible changes in hair color. However, no systematic analyses of hair melanin content have yet been carried out. The authors performed an analysis of scalp hairs in 8 Jamaican children diagnosed as having malnutrition (undernutrition, marasmus, kwashiorkor, or marasmic-kwashiorkor) during various stages of their treatment and after recovery. Eumelanin and pheomelanin were measured by HPLC methods. It was found that eumelanin comprised more than 99% of the total melanin content of the hairs. During malnutrition, there was a progressive decrease in melanin content from tip to middle to root (root/tip ratio: 0.48 ± 0.18 , $P < 0.003$). After recovery from malnutrition, the melanin levels in both the tips and the roots were increased. The values for the tips were, in fact, greater than those found in the roots during malnutrition (tips after recovery/roots during malnutrition: 1.34 ± 0.68). The root/tip ratio in hair sampled from children after recovery was 0.85 ± 0.31 which was not significantly different from 1 ($P > 0.2$). Thus, it appears that a decrease in total melanin content from tip to root may be associated with malnutrition while increases in the ratio to 1 mark normal nutritional status. It is possible that reduced intake or availability of tyrosine and/or phenylalanine may play a role in the reduction in hair melanin content during periods of malnutrition. The precise mechanisms by which melanin biosynthesis is reduced, and the role of aromatic amino acids in hair color change and other features of severe childhood malnutrition remain to be explored.

McKenzie, Colin A. See also 791, 824, 1679, 1680, 1681, 1686, 1687, 1896, 1908, 1910, 1915, 1919, 1920, 1930, 1935, 1936, 1947, 1948

1940. **Mendez, Michelle A., Richard S. Cooper, Amy Luke, Rainford J. Wilks, Franklyn I. Bennett, and Terrence E. Forrester.** "Higher Income Is More Strongly Associated With Obesity Than With Obesity-Related Metabolic Disorders in Jamaican Adults." International Journal of Obesity 28.4 (2004): 543-50.

Objective: This study compares how income is related to obesity vs two obesity-related cardiovascular disease (CVD) risk factors—diabetes and hypertension—in adults from Jamaica. **Design:** A cross-sectional population-based survey was used. In total, 847 men and 1249 women aged 25-74 years were randomly recruited from a periurban area in 1993-1998. **Measurement:** Trained interviewers measured anthropometry and blood pressure, obtained fasting blood and collected self-reported data on income and disease history. **Results:** Income was strongly and positively associated with obesity in men. In women, obesity levels were high even among the very poor, and the income gradient was more moderate. Although obesity—and particularly central fatness—was strongly associated with diabetes and hypertension prevalence, income was not significantly related to these disorders. **Conclusions:** Future research in developing countries should independently explore associations between income and obesity versus obesity-related disorders, and identify factors that explain any disparities.

1941. **Mendez, Michelle A., Richard S. Cooper, Rainford J. Wilks, Amy Luke, and Terrence E. Forrester.** "Income, Education, and Blood Pressure in Adults in Jamaica, a Middle-Income Developing Country." International Journal of Epidemiology 32.3 (2003): 400-08.

<http://ije.oxfordjournals.org/cgi/reprint/32/3/400>.

Little is known about how socioeconomic status (SES) is related to blood pressure (BP) and hypertension in developing countries. This cross-sectional study examined associations between SES and BP in 2082 adults from a



peri-urban area of Jamaica, a middle-income developing country. **Methods:** Hypertension (systolic BP. or = mmHg, diastolic BP > or = 90 mmHg or current hypertensive medication use) was estimated based on self-reported medication use and the mean of the second and third of three manual BP measurements. Income and education were self-reported. Linear or logistic regressions were used to estimate multivariate associations between BP or hypertension and SES. Hypertension prevalence was 20% in men and 28 % in women. In both men and women, the income distributions of BP and hypertension were non-linear, indicating elevated levels in low as well as in high - income groups. In contrast to the negative relationships typical for industrialized countries, multivariate-adjusted BP and hypertension were highest in the wealthiest women. In men with some high school education, income was positively associated with BP, while there were negative associations in men with lesser education. Unlike women, mean BP was highest in poor men with limited education. Low SES men were also least likely to receive diagnosis and treatment. The researchers conclude that socioeconomic status is related to BP and hypertension in Jamaica, although relationships are non-linear. Behavioural and environmental factors that explain elevated BP among both low and high SES adults in developing countries must be identified to develop effective prevention strategies.

1942. **Mendez, Michelle A., Suzanne Wynter, Rainford J. Wilks, and Terrence E. Forrester.** "Under-and Over Reporting of Energy Is Related to Obesity, Lifestyle Factors and Food Group Intakes in Jamaican Adults." *Public Health Nutrition* 7.1 (2004): 9-19.

Objective: Research in industrialized countries has documented a high prevalence of underreported energy intakes associated with characteristics such as obesity. This paper examines the prevalence, patterns and impact of energy under- and over reporting on diet-obesity relationships in a middle-income developing country. **Design:** A 70-item food-frequency questionnaire was used. Underreporters had reported energy intakes <1.35 x basal metabolic rate (BMR), over reporters > 2.4 x BMR. Multinomial models were used to identify characteristics associated with implausible reporting. Associations between diet and obesity were compared with and without adjustment for implausible reporting. **Setting:** Spanish Town, neighbouring the capital city of Kingston, Jamaica. **Subject:** Eight hundred and ninety-one Jamaican adults, aged 25-75 years, were randomly recruited. **Results:** More women than men (38. 6 % vs. 22. 5 %) underreported, but more men over reported energy (23. 7 % vs. 16.0 %). Underreporting was positively associated with obesity, special diet, smoking and age. Age was inversely associated with over reporting. Under reporters estimated lower energy from potentially socially undesirable food groups (e.g. snacks) and higher intakes of 'healthy' foods (e.g. fruit) than did plausible reports. For some of these food groups, significant differences in intakes among normal-weight versus obese subjects observed among plausible reports were absent when implausible reporters were included. In models of food group-obesity associations, adjusting for implausible energy yielded more credible results that more closely resembled findings in plausible reporters. **Conclusions:** Energy under-and over reporting are highly prevalent in Jamaica. Adjusting for implausible reporting may help to reduce bias in diet-health outcome associations.

1943. **Murphy, Joseph L., Asha V. Badaloo, B. Chambers, Terrence. E. Forrester, S. A. Wootton, and A. A. Jackson.** "Maldigestion and Malabsorption of Dietary Lipid During Severe Childhood Malnutrition." *Archives of Diseases in Childhood* 87.6 (2002): 522-25.

<http://adc.bmjournals.com/cgi/reprint/87/6/522>. **Refereed**

Background: Diets rich in lipid are used to provide energy density in treating children with severe malnutrition, but the extent to which their digestion and absorption can cope with the load effectively is uncertain. **Aim:** To determine the extent of impaired digestion or absorption, in three groups of eight malnourished children (aged 5-23 months) using isotopic probes of the predominant fatty acids in coconut and corn oil used to fortify the diet. **Methods:** Each child received oral doses of one of three (13)C labelled triglycerides (trilaurin, triolein, or trilinolein). The recovery of (13)C label in stool either as triglyceride (TAG) or fatty acid (FA) was used to assess digestion and absorption. In a separate test, the recovery of label in stool following an oral dose of [(13)C]-glycocholate was measured to assess bile salt malabsorption. **Results:** The median recovery of label in stool was 9% (range 1-29%) of administered dose. Following treatment there was a reduction in stool (13)C excretion for the labeled TAG (<1%). In half the subjects, label was recovered as TAG in stool (median 0.6%, range 0-44%). Most label in stool was recovered as FA (median 30%, range 0-100%). Following [(13)C]-glycocholate, label was



recovered in excess in about one third of studies. **Conclusion:** Abnormalities in the gastrointestinal handling of lipid were observed in over 50% of children with severe malnutrition, reflecting problems in absorption, although impaired solubilisation or hydrolysis could also be contributory factors. The underlying lesion improves as treatment progresses, leading to concomitant improvement in function.

1944. **Nichols S.D., Michael S. Boyne, Minerva M. Thame, Clive Osmond, Rainford J. Wilks, Franklyn I. Bennett , Norma McFarlane-Anderson, Young Ronald E., and Terrence E. Forrester.** “Cold-Induced Elevation of Forearm Vascular Resistance Is Inversely Related to Birth Weight.” Journal of Human Hypertension 19 (2005): 309-14.

Fetal growth retardation has been linked to elevated blood pressure in adult life. This association between birth weight and blood pressure is present in childhood and is amplified with age. However, the mechanisms that underlie this association are largely unknown. We examined the relationship between birth weight and forearm vascular resistance and forearm blood flow in children aged 9-12.7 years. A total of 58 children were randomly selected from a cohort of 1610 born at the University Hospital of the West Indies in Jamaica where adequate antenatal and delivery records were available. Blood pressure, heart rate and forearm blood flow (by venous occlusion plethysmography) were measured at rest and after cold pressor and mental arithmetic tests. There was a significant inverse correlation between birth weight and the change in the vascular resistance for the cold pressor test ($r=-0.47$; $P<0.001$) and the mental arithmetic stress test ($r=-0.26$; $P=0.05$). The log ratio of vascular resistance under stress to resting decreased by 0.289 units per kg of birth weight (95% CI: 0.145-0.434; $P=0.0002$). Lower birth weight is associated with increased vascular responsiveness. Increased vascular resistance might be one mechanism linking fetal growth to subsequent elevated blood pressure.

1945. **Phillips, David, Franklyn I. Bennett , Rainford J. Wilks, Minerva M. Thame, Michael S. Boyne, Clive Osmond, and Terrence E. Forrester.** “Maternal Body Composition, Offspring Blood Pressure and the Hypothalamic-Pituitary-Adrenal Axis.” Paediatric and Perinatal Epidemiology 19.4 (2005): 294-302.

This study tests the hypothesis that women who are thin or have poor pregnancy weight gain have offspring with higher blood pressure and examined whether this link is mediated by increased secretion of cortisol. The researchers studied a cohort of 388 children born in Kingston, Jamaica. From hospital records we obtained information about their mother's body mass index (BMI) and weight gain during pregnancy. At age 8.5 years, the children's fasting plasma cortisol concentrations and blood pressure were measured and their mother's anthropometry assessed. There was no relationship between the mother's BMI or weight gain during pregnancy and offspring blood pressure. However, mothers with a greater subcapular to triceps skinfold thickness ratio (SSTR) had offspring with higher blood pressure (5.6mmHg systolic and 3.7 mmHg diastolic increase per unit change in SSTR, $P= 0.002$ and $P= 0.008$ respectively). Fasting plasma cortisol concentrations correlated with the children's systolic ($r = 0.33$, $P< 0.0001$) and diastolic pressures ($r = 0.12$, $p = 0.02$) independently of age, gender, weight or socio-economic status and were also predicted by the mother's SSTR. These findings suggest that maternal truncal obesity rather than thinness is associated with raised blood pressure in the offspring, and that this link may be mediated by increased cortisol secretion.

1946. **Powell, Christine A., Helen Baker-Henningham, Susan P. Walker, Jacqueline Gernay, and Sally M. Grantham-McGregor.** “Feasibility of Integrating Early Stimulation into Primary Care for Undernourished Jamaican Children: Cluster Randomised Controlled Trial.” British Medical Journal 329 .7457 (2004): 89-91. <http://bmj.bmjournals.com/cgi/reprint/329/7457/89> .

Refereed

Objectives: To assess the feasibility of integrating early psychosocial stimulation into primary care for undernourished children and to determine the effect on children's development and mothers' knowledge and practices of childrearing. **Design:** Cluster randomised controlled trial. **Setting:** 18 clinics in three Jamaican parishes.



Participants: 139 undernourished children aged 9 to 30 months and their mothers enrolled in intervention or control clinics. **Interventions:** Weekly home visits by community health aides for one year in addition to usual duties. Parenting issues were discussed with the mothers and play activities were demonstrated with the children using homemade materials. **Main outcome measures:** Children's scores on the Griffiths mental development scales and mothers' knowledge and practices of childrearing measured by questionnaires. **Results:** Children from the intervention group showed significant improvements in development: developmental quotient, 7.8 points (95% confidence interval 4.5 to 11.1); hearing and speech, 10.7 (5.9 to 15.4 points); hand and eye coordination, 6.8 (3.4 to 10.1 points); and performance subscale, 11.0 (5.6 to 16.4 points). No improvements were shown on the locomotor subscale. The mothers from the intervention group showed improved knowledge and practices of childrearing. Change in children's body mass index and height independently affected change in development. **Conclusion:** Integrating parenting skills and early psychosocial stimulation for undernourished children into primary care was feasible and effective in improving the children's development and mothers' knowledge and practices of childrearing.

Powell, Christine A. See also 465, 466, 467, 468, 469, 471, 1963, 1964, 1969, 2009, 2010, 2011, 2012, 2015

1947. **Reid, Marvin E., Asha V. Badaloo, Terrence E. Forrester, John F Morlese, William C. Heird, and Farook Jahoor.** "The Acute-Phase Protein Response to Infection in Edematous and Nonedematous Protein-Energy Malnutrition." The American Journal of Clinical Nutrition 76.6 (2002): 1409-15. <http://www.ajcn.org/cgi/reprint/76/6/1409>. **Refereed**

Background: Immune structure and function are more compromised in edematous protein-energy malnutrition (PEM) than in nonedematous PEM. Whether the positive acute-phase protein (APP) response to infection is affected remains unknown. **Objective:** The authors assessed whether children with edematous PEM can mount a general APP response and compared the kinetic mechanisms of the response in children with edematous PEM with those in children with nonedematous PEM. **Design:** Plasma C-reactive protein, α_1 -acid glycoprotein, α_1 -antitrypsin, haptoglobin, and fibrinogen concentrations and the fractional and absolute synthesis rates of α_1 -antitrypsin, haptoglobin, and fibrinogen were measured in 14 children with edematous PEM, aged 11.4 q 2 mo, and 9 children with nonedematous PEM, aged 10.1 q 1.4 mo, at 3 times: α_2 d after hospital admission (period 1), when they were malnourished and infected; α_8 d after admission (period 2), when they were malnourished but free of infection; and α_{54} d after admission (period 3), when they had recovered. **Results:** Children with edematous and nonedematous PEM had higher plasma concentrations of 4 of 5 APPs in period 1 than in period 3. The magnitude of the difference in concentration and in the rate of synthesis of the individual APPs was less in the children with edematous PEM than in those with nonedematous PEM. The kinetic data show that the characteristics of the APP response were different in the 2 groups. **Conclusions:** These results suggest that severely malnourished children can mount only a partial APP response to the stress of infection and that the magnitude of this response is less in those with edema.

1948. **Reid, Marvin E., Terrence E. Forrester, Asha V. Badaloo, William C. Heird, and Farook Jahoor.** "Supplementation With Aromatic Amino Acids Improves Leucine Kinetics but Not Aromatic Amino Acid Kinetics in Infants With Infection, Severe Malnutrition, and Edema 1,2." The Journal of Nutrition 134.11 (2004): 3004-10. **Refereed**

The study investigated whether supplementation with an aromatic amino acid (AAA) cocktail consisting of 0.5 mmol each of phenylalanine, tryptophan, and tyrosine compared with isonitrogenous amounts of alanine (Ala) would improve measures of protein kinetics in 14 (8 with AAA, 6 Ala) children with edematous malnutrition (aged 6-24 mo) during the infected acute malnourished state. Supplementation started immediately after the baseline experiment, 2 d post admission and continued to the end of the acute phase of treatment. The second (post-supplementation) experiment was done 12 d post admission. We measured leucine kinetics, phenylalanine and



tyrosine fluxes, using an i.g. 8-h prime continuous infusion of ^2H -leucine, and an i.v. 6-h prime continuous infusion of ^{13}C -leucine, ^2H -tyrosine, and ^5H -phenylalanine in the fed state. Leucine flux tended to be faster ($P = 0.06$) in the AAA group compared with Ala group after supplementation (mean difference \pm SEM): $22.6 \pm 10.9 \mu\text{mol}/(\text{kg} \cdot \text{h})$. The rate of leucine appearance from protein breakdown [$28.1 \pm 9.4 \mu\text{mol}/(\text{kg} \cdot \text{h})$] and the nonoxidative disposal of leucine [i.e., leucine to protein synthesis; $35.4 \pm 12.9 \mu\text{mol}/(\text{kg} \cdot \text{h})$] were faster ($P < 0.02$) in the AAA group than in the Ala group. There was no significant effect of supplementation on leucine splanchnic metabolism, phenylalanine, and tyrosine fluxes. These findings are consistent with the hypothesis that the blunting of the protein catabolic response to infection in children with edematous malnutrition syndrome is due to limited availability of aromatic amino acids.

Reid, Marvin E. See also 775, 776, 797, 801, 802, 803, 811, 820, 821, 826, 836, 837, 872, 878, 882, 918, 933, 957, 967, 1679, 1680, 1689, 1882, 1883, 1884, 1885, 1897, 1914, 1916, 1917, 1928, 1935, 1936, 1947, 1948

1949. **Royal, Tamika, Novie O. Younger, Terrence E. Forrester, Richard S. Cooper, and Rainford J. Wilks.** "Simplifying Measurement of Cardiovascular Risk in Urban Jamaica: The Role of Multivariate Methods." 2005 Proceedings of the American Statistical Association - Statistics in Epidemiology Section: Alexandria, Virginia: American Statistical Association, 2005. (CD-ROM. Paper # 663)

In developing countries, invasive methods of quantifying cardiovascular risk can prove costly, thus prohibitive to many. As such, the authors seek evidence that cheaper, less invasive methods will identify adequately cardiovascular risk in the face of the expense associated with more complex methods. Both factor and principal components analyses were used to derive each of two new variables, one from body composition and another from physiological measurements. Graphical representation of the factor and principal component scores separated persons with hypertension or high waist circumference from those without. The mean values of the factor scores for persons at risk also were further removed from zero than were the mean scores for risk-free individuals. The 95% confidence intervals for the mean scores for risk-free and at-risk persons did not overlap. These data support the hypothesis that waist circumference or hypertension status are valid markers of cardiovascular risk as estimated by composite measures, including several other indices, and may be effective screening tools.

1950. **Saremi, Aramesh, Robert L. Hanson, Marshall K. Tulloch-Reid, Desmond E. Williams, and William C. Knowler.** "Alcohol Consumption Predicts Hypertension but Not Diabetes." Journal of Studies on Alcohol 65.2 (2004): 184-90.

(Also available as an electronic-book published by Alcohol Research Documentation, Inc.; ISBN: B000829K5Q; March 1, 2004, 18 pages).

Objective: This study examines the associations between alcohol consumption, Type 2 diabetes and hypertension in a Native American population. **Methods:** Data were collected in a population-based cross-sectional and prospective study conducted on 3,789 individuals aged ≥ 20 years. Reported alcohol consumption was classified as never, occasional or < 1 a day, 1-2 drinks a day, ≥ 3 drinks a day, and occasional heavy drinking. The prevalence and incidence of diabetes and hypertension by categories of alcohol intake were determined. **Results:** About 68% of men and 39% of women reported some degree of alcohol consumption. There was no association between alcohol consumption and prevalence or incidence of diabetes, but a positive, statistically significant association between blood pressure and alcohol consumption was found in both genders. After adjustment for age, body mass index (BMI) and diabetes in a proportional hazards model in men, moderate drinkers (occasional or < 1 drink a day and 1-2 drinks a day combined) had 1.24 (95% confidence interval: 0.98-1.57) and occasional heavy drinkers had 1.49 (1.02-2.17) times the incidence of hypertension as nondrinkers. The corresponding estimates of hypertension incidence for women were 1.53 (1.29-1.83) for moderate drinking and 1.38 (0.81-2.36) for occasional heavy drinking. As only 1% of participants reported ≥ 3 drinks a day, this group was excluded from these analyses. **Conclusions:** Alcohol consumption did not affect the development of Type 2 diabetes, but it was associated with increased risk of hypertension, and this effect was independent of diabetes or BMI in both genders.



1951. **Saremi, Aramesh, Robert G. Nelson, Marshall K. Tulloch-Reid, Robert L. Hanson, Maurice L. Sievers, George W. Taylor, Marc Shlossman, Peter H. Bennett, Robert Genco, and William C. Knowler.** "Periodontal Disease and Mortality in Type 2 Diabetes ." Diabetes Care 28 (2005): 27-32. <http://care.diabetesjournals.org/cgi/reprint/28/1/27>. **Refereed**

Objective: Periodontal disease may contribute to increased mortality associated with diabetes.

Research Design and Methods: In a prospective longitudinal study of 628 subjects aged 35 years, we examined the effect of periodontal disease on overall and cardiovascular disease mortality in Pima Indians with type 2 diabetes. Periodontal abnormality was classified as nil or mild, moderate, and severe, based on panoramic radiographs and clinical dental examinations. **Results:** During a median follow-up of 11 years (range 0.3–16), 204 subjects died. The age- and sex-adjusted death rates for all natural causes expressed as the number of deaths per 1,000 person-years of follow-up were 3.7 (95% CI 0.7– 6.6) for no or mild periodontal disease, 19.6 (10.7–28.5) for moderate periodontal disease, and 28.4 (22.3–34.6) for severe periodontal disease. Periodontal disease predicted deaths from ischemic heart disease (IHD) (P trend 0.04) and diabetic nephropathy (P trend 0.01). Death rates from other causes were not associated with periodontal disease. After adjustment for age, sex, duration of diabetes, HbA1c, sacroalbuminuria, BMI, serum cholesterol concentration, hypertension, electrocardiographic abnormalities, and current smoking in a proportional hazards model, subjects with severe periodontal disease had 3.2 times the risk (95% CI 1.1–9.3) of cardiorenal mortality (IHD and diabetic nephropathy combined) compared with the reference group (no or mild periodontal disease and moderate periodontal disease combined). **Conclusions:** Periodontal disease is a strong predictor of mortality from IHD and diabetic nephropathy in Pima Indians with type 2 diabetes. The effect of periodontal disease is in addition to the effects of traditional risk factors for these diseases.

1952. **Sargeant, Lincoln A., Michael S. Boyne, Franklyn I. Bennett, Terrence E. Forrester, Richard S. Cooper, and Rainford J. Wilks.** "Impaired Glucose Regulation in Adults in Jamaica: Who Should Have the Oral Glucose Tolerance Test?" Pan American Journal of Public Health 16.1 (2004): 35-42.

Objective: To compare the 1999 World Health Organization (WHO) fasting plasma glucose (FPG) criteria and the WHO 2-hour post-challenge glucose (2hPG) criteria during an oral glucose tolerance test (OGTT) in identifying adults in Jamaica with hyperglycemia. As the OGTT is not commonly used in clinical practice, factors associated with the failure or the FPG criteria to detect persons with impaired 2hPG were investigated. **Methods:** A random sample of 2096 adults, 25-74 years old, living in the town of Spanish Town, Jamaica, was evaluated for diabetes. After excluding 215 individuals for reasons such as missing data, the remaining 1881 persons were composed of 187 who were previously known to have diabetes and 1694 who were screened for diabetes with both FPG and 2hPG. **Results:** The FPG criteria detected 83 cases of diabetes, compared to 72 by the 2hPG criteria. The kappa statistic comparing the two criteria was 0.31 (95 % confidence interval: 0. 28- 0.34), indicating fair agreement. There were 261 cases of impaired glucose tolerance (IGT) and 92 cases of impaired fasting glucose (IFG). In those classified as normoglycemic by FPG criteria, 14 % of them have IGR or diabetes by 2hPG criteria. The factors predicting the likelihood of non-detection of impaired glucose tolerance or diabetes by FPG were age, body mass index, central obesity, systolic blood pressure, and female sex. By receiver operation characteristic curve analysis, an FPG of 5.1 mmol/L would predict a 2hPG \geq 7.8 mmol/L. **Conclusions:** A few individuals classified as normal on FPG will have IGT or diabetes, and an OGTT will be needed to identify them. The yield of IGT detected by screening in Jamaica can be improved by lowering the threshold for IFG or by using clinical information to identify high-risk individuals.

1953. **Serjeant, Graham R., Ian R. Hambleton, and Minerva M. Thame.** "Fecundity and Pregnancy Outcome in a Cohort With Sickle Cell-Haemoglobin C Disease Followed From Birth." BJOG: An International Journal of Obstetrics & Gynaecology 112.9 (2005): 1308-14. **Refereed**

Objectives: To compare pregnancy outcome in sickle cell-haemoglobin C (SC) disease with that in homozygous sickle cell (SS) disease and age-matched controls with a normal haemoglobin (AA) genotype. **Design:** A cohort study followed from birth. **Setting:** Sickle Cell Clinic, University Hospital and other Jamaican hospitals.

Population: Ninety-five pregnancies in 43 patients with SC disease, 94 pregnancies in 52 patients with SS disease



and 157 pregnancies in 68 controls. **Methods:** Systematic review of all pregnancies occurring in sample population. Kaplan-Meier analysis for interval to first pregnancy, and the t test, χ^2 test or Fisher's exact test as appropriate; correction was made for multiple testing and multiple linear regression was used for analysis of determinants of birthweight. **Main Outcome Measures:** Age at menarche, interval to first pregnancy, outcome of pregnancy, maternal complications and possible predictors of low birthweight.

Results: Menarche was marginally delayed in SC disease compared with AA controls (median age 13.7 vs 13.0 years, $P = 0.02$) but age at first pregnancy was similar (median age 22.5 vs 20.1 years, $P = 0.32$). Pregnancy outcome in SC disease did not differ from AA controls but compared with SS disease there were marginally fewer miscarriages, more live deliveries and greater birthweight. The prevalence of pregnancy-induced hypertension, preeclampsia, antepartum or postpartum haemorrhage in SC disease did not differ from AA controls but the prevalence of sickle-related complications was similar to SS disease. **Conclusions:** Contrary to some claims, pregnancy outcome in SC disease is generally benign compared with SS disease.

1954. **Serjeant, Graham R., Look Loy Luana, Mark Crother, Ian R. Hambleton, and Minerva M. Thame.** "Outcome of Pregnancy in Homozygous Sickle Cell Disease." Obstetrics and Gynecology 103.6 (2004): 1278-85.

Objective: Previous reports on pregnancy in homozygous sickle cell (SS) disease are biased towards hospital-based, more severely affected subjects and may have underestimated recurrent early pregnancy losses. The authors report on pregnancy outcome in a representative sample of SS subjects subsequently referred to as "subjects" or "sickle cell subjects" and matched normal controls followed from birth. **Methods:** The outcomes of 94 pregnancies in 52 subjects and 157 pregnancies in 68 controls followed in a cohort study from birth were presented. Outcome measures included the age at menarche, interval to first pregnancy, outcome of pregnancy, and maternal complications. Possible predictors of low birth weight were assessed. Outcomes were compared by the Kaplan-Meier analysis for interval to first pregnancy and by Student t test, χ^2 test, or Fisher exact test, as appropriate. Correction was made for multiple testing, and multiple linear regression was used for analysis of birth weight.

Results: Compared with controls, SS subjects had later menarche (median age 15.4 versus 13.0 years) and first pregnancy (median age 23.7 versus 20.1 years), and more spontaneous abortions (36% versus 10%). Babies of SS subjects had a lower gestational age ($P < .001$) and lower birth weight ($P < .001$), the latter being significantly affected by sickle-related events in pregnancy. There was no difference in pregnancy-induced hypertension, preeclampsia, or antepartum or postpartum hemorrhage, but a retained placenta was marginally more common in SS subjects (Fisher exact test, $P = .007$ after adjustment for multiple testing). Two SS subjects died, a mortality rate of 2.1%. **Conclusion:** The increased fetal loss and maternal morbidity in mothers with homozygous sickle cell disease is confirmed.

1955. **Sharkey, Joseph R., Laurence G. Branch, Namvar Zohoori, Carol Giuliani, Jan Busby-Whitehead, and Pamela S. Haines.** "Inadequate Nutrient Intakes Among Homebound Elderly and Their Correlation With Individual Characteristics and Health-Related Factors." American Journal of Clinical Nutrition 76.6 (2002): 1435-45. <http://www.ajcn.org/cgi/content/full/76/6/1435>.

Refereed

Background: The prevalence of inadequate nutrient intakes among the homebound elderly and their correlation with individual characteristics and health-related factors remain poorly understood. **Objective:** The authors assessed the extent of inadequate dietary intakes of key nutrients among the homebound elderly by using the newly released dietary reference intakes and examined the associations of individual characteristics and health-related factors with low nutrient intakes. **Design:** This was a cross-sectional examination of data collected during the baseline assessment of a prospective study of nutrition and function among a randomly recruited sample of cognitively eligible recipients of home-delivered meals who completed a home visit and three 24-h dietary recalls ($n = 345$). Nutrient analysis was performed with the NUTRITION DATA SYSTEM software, and associations were identified through multiple regression models. **Results:** In multiple regression models, lower intakes of specific nutrients were associated with subjects who were women, who were black, who reported a low income and limited education, and who did not usually eat breakfast. On the basis of the estimated average requirement standard for nutrient



inadequacy, the intake of ≥ 6 nutrients was inadequate in 27% of subjects, of 3-5 nutrients in 40% of subjects, and of 1-2 nutrients in 29% of subjects. On the basis of the adequate intake standard, a less than adequate intake of calcium was reported by 96% of subjects and of vitamin D by 99% of subjects. **Conclusions:** The findings suggest that home-delivered meals programs should target specific subgroups of participants with interventions, such as a breakfast meal or more nutrient-dense meals, tailored to increase nutrient intakes and reduce the prevalence of nutrient inadequacy.

1956. **Sharkey, Joseph R., Carol Giuliani, Pamela S. Haines, Laurence G. Branch, Jan Busby-Whitehead, and Namvar Zohoori.** "Summary Measure of Dietary Musculoskeletal Nutrient (Calcium, Vitamin D, Magnesium, and Phosphorus) Intakes Is Associated With Lower-Extremity Physical Performance in Homebound Elderly Men and Women." *American Journal of Clinical Nutrition* 77.4 (2003): 847-56. **Refereed**

Background: Nutritional intake has been overlooked as a possible contributing factor to lower-extremity physical performance, especially in homebound elderly persons. **Objectives :** To examine the association of a summary measure of calcium, vitamin D, magnesium, and phosphorus intakes with 1) the inability to perform lower-extremity physical performance tests and 2) declining levels of summary lower-extremity physical performance.

Design: Baseline data from the Nutrition and Function Study were used to calculate a summary musculoskeletal nutrient (SMN) score as a measure of nutrient intake (factor analysis) and to examine the association of SMN intake with physical performance (multivariable regression models) among recipients of home-delivered meals who completed an in-home assessment (anthropometric measures and performance-based physical tests) and three 24-h dietary recalls. **Results:** Among the 321 participants, elderly age, black race, body mass index (in kg/m²) $> \text{ or } = 35$, arthritis, frequent fear of falling, and lowest SMN intake were independently associated with being unable to perform functional tests. The lowest SMN intake and the highest BMI were both significantly associated with increasingly worse levels of lower-extremity physical performance, after adjustment for health and demographic characteristics. **Conclusions:** Considering the importance of identifying short- and long-term outcomes that help elderly persons maintain adequate nutritional status and remain functionally independent at home, the results of this study suggest the need to identify intervention strategies that target the improvement of dietary intake and physical performance. Further investigation is indicated to identify the manner in which nutritional status contributes to the preservation or deterioration of physical performance in homebound elderly persons.

1957. **Shetty, Prakash, V. Iyengar, A. Sawaya, E. Diaz, G. Ma, M. Hernandez-Triana, Terrence E. Forrester, M Valencia, E. Rush, Adebawale A. Adeyemo, Farook Jahoor, and S. Roberts.** "Application of Stable Isotopic Techniques in the Prevention of Degenerative Diseases Like Obesity and NIDDM in Developing Societies." *Food and Nutrition Bulletin* 23.3 (Supplement) (2002): 174-79. **Refereed**

Economic development in developing societies characterized by industrialization, urbanization, and globalization has seen the emergence of an epidemic of diet- and life-style-related chronic degenerative diseases. A research project was initiated under the aegis of the International Atomic Energy Agency (IAEA), Vienna, Austria under its Coordinated Research Programme (CRP) to promote the use of stable isotopic techniques to document the extent of the problem and to understand the determinants of this epidemic. The principal objectives of this CRP involving countries both in the North and the South are to define the magnitude of the problem of obesity and non-insulin dependent diabetes mellitus (NIDDM) in developing countries, to identify the vulnerable groups at increased risk, and to attempt to describe the metabolic and physiological mechanisms underlying this phenomenon. These comparative international studies of obesity and NIDDM are looking at the effects of childhood malnutrition (Brazil) and socioeconomic differentials (Mexico) on adult risk factors; the composition of the daily diet on obesity (Chile); levels of patterns of physical activity of older adults (China) as well as their influence on weight gain and obesity (Cuba, Nigeria); the impact of body composition and energy expenditure on the evolution frank diabetes from impaired glucose tolerance (Jamaica), and of body compositional changes and the role of inflammatory cytokines on impaired glucose tolerance (India). The last study conducted in New Zealand was aimed at comparing the energy expenditures of Maori (Pacific Island) with New Zealanders of European descent.



1958. **Tulloch-Reid, Marshall K., Robert L. Hanson, Aramesh Saremi, Helen C. Looker, Desmond E. Williams, J. Krakoff, and William C. Knowler.** "Hematocrit and the Incidence of Type 2 Diabetes in the Pima Indians." *Diabetes Care* 27.9 (2004): 2245-46.

<http://care.diabetesjournals.org/cgi/reprint/27/9/2245>. **Refereed**

Several prospective studies have shown that a high hematocrit (or hemoglobin) predicts type 2 diabetes. However, the reasons for this association have not been fully explored. Hematocrit has been positively correlated with hyperinsulinemia and conditions associated with insulin resistance such as high blood pressure, elevated serum triglycerides, low HDL cholesterol, and central obesity and could, therefore, be associated with insulin resistance. On the other hand, hematocrit is also a major determinant of blood viscosity. An elevated blood viscosity is thought to contribute to the development of insulin resistance by reducing blood flow to skeletal muscle, thereby interfering with insulin-mediated glucose uptake in this tissue. The aim of this study was to examine the association between hematocrit and type 2 diabetes incidence in the Pima Indians and to determine whether any association between hematocrit and diabetes incidence was altered by adjustment for fasting insulin.

1959. **Tulloch-Reid, Marshall K., Robert L. Hanson, Nancy G. Sebring, James C. Reynolds, Ahalya Premkumar, David J. Genovese, and Anne E. Sumner.** "Both Subcutaneous and Visceral Adipose Tissue Correlate Highly With Insulin Resistance in African Americans." *Obesity Research* 12.8 (2004): 1352-59.

http://www.obesityresearch.org/cgi/reprint/12/8/1352?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&author1=tulloch-reid%2C+m&searchid=1132414675594_607&stored_search=&FIRSTINDEX=0&sortspec=relevance&journalcode=obesityres.

Objective: The contribution of visceral adipose tissue (VAT) to insulin resistance is well-established. However, the role of subcutaneous abdominal adipose tissue (SAT) in insulin resistance remains controversial. Sex may determine which of these two components of abdominal obesity is more strongly related to insulin resistance and its consequences. The aim of this study was to determine whether both VAT and SAT contribute to insulin resistance in African Americans and to examine the effects of sex on this relationship. **Research Methods and Procedures:** This was a cross-sectional study of 78 non-diabetic African-American volunteers (44 men, 35 women; age 33.8 +/- 7.3 years; BMI 30.9 +/- 7.4 kg/m²). VAT and SAT volumes were measured using serial computerized tomography slices from the dome of the diaphragm to the iliac crest. The insulin sensitivity index (SI) was determined from the minimal model using data obtained from the frequently sampled intravenous glucose tolerance test. **Results:** In men, both VAT and SAT were negatively correlated with SI (r for both correlations = -0.57; p < 0.01). In women, the correlation coefficient between VAT and SI was -0.50 (p < 0.01) and between SAT and SI was -0.67 (p < 0.01). In women, the correlation coefficient for SI with SAT was significantly greater than the correlation coefficient with VAT (p = 0.02). **Discussion:** Both SAT and VAT are strongly correlated with insulin resistance in African-Americans. For African-American women, SAT may have a greater effect than VAT on insulin resistance.

1960. **Tulloch-Reid, Marshall K., and Desmond E. Williams.** "Quality of Diabetes Care in the United States Between 1988 and 1995." *Clinical Diabetes* 21 (2003): 43-45.

<http://clinical.diabetesjournals.org/cgi/reprint/21/1/43>. **Refereed**

Objective. To assess the quality of diabetes care in the United States by applying accountability and quality improvement measures proposed by the Diabetes Quality Improvement Project (DQIP). **Design.** A cross-sectional analysis of data obtained from two large nationwide studies. **Subjects and methods.** Data were obtained from the Third National Health and Nutrition Examination Survey (NHANES III), conducted from 1988 to 1994, and from the Behavioral Risk Factors Surveillance System (BRFSS) for 1995. The NHANES III population was a nationwide



sample of non-institutionalized U.S. citizens with deliberate over-sampling of non-Hispanic blacks, Mexican Americans, and the elderly. It included an interview, a physical examination, and laboratory studies including measurement of hemoglobin A_{1c} (A1C), cholesterol levels, and triglycerides. The BRFSS 1995 sample was obtained using a random digit telephone survey method. Specific questions on laboratory testing, cholesterol levels, and eye and foot examinations were included in the BRFSS survey for all subjects with self-reported diabetes. This study included 1,026 subjects from NHANES III and 3,059 subjects from BRFSS, aged 18-75 years, with self-reported diabetes. Laboratory data and clinical management data were provided by NHANES III and BRFSS, respectively.

Results. A total of 28.8% of subjects reported having had an A1C measurement performed within 1 year of the study, and 85.3% reported having cholesterol levels measured within 2 years. A total of 63.3% of diabetic subjects reported having had a dilated eye examination within the past year, and 54.8% reported having had a foot examination in the same time period. Information on assessment of nephropathy was not obtained.

Elderly subjects were more likely than younger subjects to have had their cholesterol measured biannually. Subjects using insulin were more likely to report regular foot examinations and dilated eye examinations than those not using insulin. Higher education and insurance coverage were strong determinants of the level of care received. Non-Hispanic blacks were more likely than other racial and ethnic groups to have uncontrolled high blood pressure and elevated A1C results, and this effect was independent of differences in access to health care. A total of 18% of the diabetic subjects in the NHANES III sample had an A1C test result >9.5%, and 40% had an LDL cholesterol level <130 mg/dl. A total of 65% of subjects had a blood pressure of 140/90 mmHg. **Conclusion.** Using U.S. data collected between 1988 and 1995, a gap exists between recommended diabetes care and the care patients actually receive. This study is a benchmark for monitoring changes in diabetes care.

1961. **Tulloch-Reid, Marshall K., Desmond E. Williams, Helen C. Looker, Robert L. Hanson, and William C. Knowler.** “Do Measures of Body Fat Distribution Provide Information on the Risk of Type 2 Diabetes in Addition to Measures of General Obesity?” *Diabetes Care* 26 (2003): 2556-61. <http://care.diabetesjournals.org/cgi/reprint/26/9/2556>. **Refereed**

Objective: To investigate which anthropometric measurements of obesity best predict type 2 diabetes in a population of Pima Indians and whether additional information on diabetes risk could be obtained by combining measures of general obesity with measures of body fat distribution. **Research Design and Methods:** We conducted a prospective study of 624 men and 990 nonpregnant women >18 years of age without diabetes. Subjects were followed a mean of 5.25 years for the development of type 2 diabetes (using 1997 American Diabetes Association criteria). **Results:** A total of 322 new cases of type 2 diabetes (107 men and 215 women) were diagnosed during follow-up. Baseline obesity measurements were highly correlated and predicted diabetes in proportional hazards models adjusted for age. BMI had the highest hazard ratio in men and women, with age-adjusted hazard ratios per SD of 1.73 (95% CI 1.44–2.07) and 1.67 (1.45–1.91), respectively. According to receiver-operating characteristic analysis, BMI and waist-to-height ratio were the best predictors of diabetes in men, while in women BMI, waist-to-height ratio, waist circumference, and waist-to-thigh ratio were the best predictors. The predictive abilities of models containing BMI were not significantly improved by including other measures of general obesity or measures of the body fat distribution. **Conclusions:** Throughout its range, BMI was an excellent predictor of type 2 diabetes risk in Pima Indians and was not significantly improved by combining it with other measures of general adiposity or body fat distribution.

Tulloch-Reid, Marshall See also 1879, 1899, 1950, 1951



1962. **Walker, Susan P., and Susan M. Chang.** “Undernutrition in Early Childhood: Jamaican Studies on the Concurrent and Long Term Effects of Child Development.” Caribbean Childhoods: From Research to Action: Journal of the Children’s Issues Coalition 1 (2003): 11-22.

Childhood undernutrition remains extremely prevalent in many developing countries. A series of studies conducted in Jamaica has been critical in defining the impact on concurrent and future child development and the benefit of nutritional and psychosocial interventions. Severely malnourished children were shown to have long term deficits in IQ compared with adequately nourished children and benefits from a programme of psychosocial stimulation remained in adolescence. The development of stunted (low height for age) children was also shown to be significantly below that of non-stunted children from the same poor neighbourhoods. Nutritional supplementation and psychosocial stimulation independently had significant benefits to the children’s development and children who received both interventions attained the same developmental levels as the non-stunted children at the end of a two year programme. Significant benefits remained from stimulation but not supplementation. A coordinated approach to improve both nutrition and the level of stimulation in the home is needed to promote optimal development in early childhood and beyond.

1963. **Walker, Susan P., Susan M. Chang, Christine A. Powell, and Sally M. Grantham-McGregor.** “Psychosocial Intervention Improves the Development of Term Low-Birth-Weight Infants.” The Journal of Nutrition 134 (2004): 1417-23.

<http://www.nutrition.org/cgi/reprint/134/6/1417>. **Refereed**

It is estimated that 11% of births in developing countries are term low-birth-weight (LBW). However, there is limited information on the development of these infants. The objectives were to determine the effect of psychosocial intervention on the development of LBW infants and to compare term LBW and normal-birth-weight (NBW) infants. Term LBW (n 140) and NBW infants (n 94) were enrolled from the main maternity hospital in Kingston, Jamaica. The LBW infants were randomly assigned to control or intervention comprising weekly home visits from birth to 8 wk and from 7 to 24 mo of age. Development was assessed at 15 and 24 mo with the Griffiths Scales. The intervention benefited the infants’ developmental quotient (DQ, P 0.05) and performance subscale at 15 mo (P 0.02), the hand and eye (P 0.05) and performance subscales (P 0.02) at 24 mo, and home environment at 12 mo. The effect of the intervention on development was mediated in part by the improvement in the home environment. The control LBW infants had significantly lower scores than the NBW in DQ and several subscales, whereas there were no significant differences between the NBW and the LBW infants after intervention. In conclusion, term LBW was associated with developmental delays, which were reduced with psychosocial intervention.

1964. **Walker, Susan P., C Ewan-Whyte, Susan M. Chang, Christine A. Powell, Horace M. Fletcher, D McDonald, and Sally M. Grantham-McGregor.** “Factors Associated With Size and Proportionality at Birth in Term Jamaican Infants .” Journal of Health, Population and Nutrition 21.2 (2003): 117-26.

The objective of this study was to identify the factors associated with size and proportionality at birth in a cohort of term infants established to investigate their growth and development. One hundred and forty term low-birth-weight (birth-weight < 2,500 g) infants and 94 normal birth-weight infants (2,500- < 4,000 g) were recruited within 48 hours of birth at the main maternity hospital, Kingston, Jamaica. Birth anthropometry and gestational age were measured, and maternal information was obtained by interview and from hospital records. Controlling for gestational age, variables independently associated with birth-weight were rate of weight gain in the second half of pregnancy, maternal height, haemoglobin level < 9.5 microg/dL, time of first attendance in antenatal clinic, birth order, pre-eclampsia, and consumption of alcohol, with 33% of the variance in birth-weight explained. Birth length was associated only with maternal height and age, while measures of proportionality (ponderal index and head/length ratio) were associated with characteristics of the environment in late pregnancy, including rate of weight gain, weight in late pregnancy, and pre-eclampsia. The variation in maternal characteristics associated with size or proportionality at birth may reflect the times during gestation when different aspects of growth are most affected.

Walker, Susan P. See also 465, 466, 467, 468, 469, 470, 471, 692, 853, 1946, 1972, 2011, 2014, 2015



1965. **Wilks, Rainford J., Novie O. Younger , Deanna E. Ashley, Elizabeth Ward, J. Mullings, and Terrence E. Forrester.** “The Occurrence of Depression and Its Association With Obesity, Diabetes Mellitus and Hypertension in Jamaica.” [Abstract]. West Indian Medical Journal 52 (Supplement 3) (2003): 51. **Refereed**

1966. **Wilks, Rainford J., Novie O. Younger , Richard S. Cooper, Amy Luke, Franklyn I. Bennett, Norma McFarlane-Anderson, and Terrence E. Forrester.** “Cardiovascular Risk Factors and Mortality in Jamaica: Significant Sexual Dimorphism.” Congress of Epidemiology: (Toronto, Canada: June 13-16, 2001).

(Also abstracted in the Supplement of the American Journal of Epidemiology 153.11. (Abstract#1720).)

Jamaica has seen significant disease transition. Cardiovascular diseases (CVD) now account for 42% of mortality. Risk factors for CVD include hypertension (HTN), obesity, elevated lipids, diabetes (DM), smoking and excess alcohol. A prevalence survey for CVD risk factors in an urban population from Spanish Town, Jamaica between 1993 and 1998 recruited a random sample of 2096 persons 25-74 years old (848 men; 1248 women) and collected medical history, anthropometry, blood pressure, plasma glucose and serum lipids. Mean age for men and women was similar (~ 46 years) but there was significant sexual dimorphism in body composition: body mass index (BMI) (23.9 vs 28.0 Kg/m²); waist circumference (WC)(81.0 vs 83.3 cm); waist hip ratio (WHR)(0.84 vs 0.80); fat mass (FM)(15.8 vs 26.9 Kg); % fat mass (FM%)(21.0 vs 35.3) for men and women respectively. Based on published criteria for increased CVD risk, a higher percent(%) of females appeared to be at risk : increased WC 59.6 vs 15.9; obesity 34.0 vs 8.7; increased WHR 46.0 vs 7.3; (DM)15.6 vs 11.3; HTN 28.5 vs 20.0; increased total cholesterol 31.8 vs 23.9; and increased LDL cholesterol 39.3 vs 28.8. Higher percent (%) of men were at increased risk in tobacco use 36.5 vs 11.4; alcohol use 61.4 vs 18.2 and low HDL cholesterol levels 12.7 vs 10.3. These findings are consistent with local mortality data where rates in women and men per 100,000 are: CVD 86.3 vs 69.4; heart diseases 62.1 vs 70.9; HTN diseases 36.6 vs 27.6 and DM 76.2 vs 47.7 respectively. These data have implications for health policy and education.

1967. **Wilks, Rainford J., Novie O. Younger , Elizabeth Ward, J. Mullings, Franklyn I. Bennett, and Terrence E. Forrester.** “Obesity, Hypertension and Diabetes Mellitus in the Jamaican Population.” [Abstract]. West Indian Medical Journal 52 (Supplement 3) (2003): 41. **Refereed**

Wilks, Rainford J. See also 692, 847, 880, 972, 980, 983, 1879, 1888, 1889, 1890, 1899, 1902, 1918, 1933, 1940, 1941, 1942, 1944, 1945, 1949, 1952, 1971, 1972, 1973

1968. **Younger, Novie O.** “Review of Sample Survey Theory: Some Pythagorean Perspectives by Paul Kottnerus.” Journal of Official Statistics 20 (2004): 411-15.

<http://www.jos.nu/Articles/article.asp>.

1969. **Younger, Novie O., Ian R. Hambleton, Kadene Clarke, and Christine A. Powell.** “Experience of Using Stata Software in Teaching an Introductory Biostatistics Course for MSc Nutrition Students From 2002-2004.” 2005 Proceedings of the American Statistical Association - Teaching Statistics in the Health Sciences Section: (Minneapolis, Minnesota: August 7-10, 2005) Alexandria, Virginia: American Statistical Association, 2005. (CD-ROM. Paper #739)



From 2002-2004, it was the responsibility of the Statistics Group within the Tropical Medicine Research Institute to teach biostatistics to students in the Master of Science in Nutrition program. The course comprised didactic sessions aimed at introducing students to basic data analysis tools and computing tutorials designed to equip students to use Stata, making use of the tools to which they were introduced during the teaching sessions. This biostatistics course is part of a module titled “Essentials of the Scientific Method” that also has an epidemiology component. “Essentials of the Scientific Method” is worth six credits, three of which are offered for the biostatistics component. The challenges and benefits associated with the authors’ efforts at teaching statistical thinking and considerations that influenced the choice of software will be shared.

1970. **Younger, Novie O., Rainford J. Wilks, Richard S. Cooper, Terrence E. Forrester, Franklyn I. Bennett, Amy Luke, Norma McFarlane-Anderson, and Michelle A. Mendez.** “Prediction of Total Cholesterol Levels in Jamaican Males.” [Abstract]. West Indian Medical Journal 51 (Supplement 2) (2002): 33. **Refereed**

1971. **Younger, Novie O., Namvar Zohoori, Elizabeth Ward, J. Mullings, Terrence E. Forrester, Deanna E. Ashley, and Rainford J. Wilks.** “Residential and Gender Differences in the Relationship Between Physical Activity and Cardiovascular Risk in Jamaica.” [Abstract]. West Indian Medical Journal 52 (Supplement 3) (2003): 42. **Refereed**

Younger, Novie O. See also 1784, 1886, 1899, 1904, 1906, 1928, 1929, 1931, 1949, 1965, 1966, 1967

1972. **Zohoori, Namvar., Maria Jackson, Rainford J. Wilks, Susan P. Walker, and Terrence E. Forrester.** “Nutritional Status of Older Adults in Urban Jamaica.” West Indian Medical Journal 52.2 (2003): 111-17. **Refereed**

The aim of the study was to determine the energy intake and nutritional status of a sample of Jamaican adults, and to compare them among different age groups. Measured height and weight data from a survey in Spanish Town, Jamaica, consisting of 2100 adults aged 25-74 years. with 22 per cent over age 60 years, were used to calculate body mass index (BMI). Using BMI cut-off points of 20 and 27, the prevalence of underweight and overweight, respectively, were determined for different age groups. Energy intake was calculated from a food frequency questionnaire from 967 of the respondents. Among males, mean daily energy intake declined from a high of 3681 kcal (15 401 kJ) for 25-29 year-olds, to a low of 2227 kcal (9318 kJ) for those aged 70-74 years. Corresponding numbers among females were 2935 kcal (12 280 kJ) and 1844 kcal (7715 kJ), respectively. Among those aged 65-74 years, 26.9 per cent of males and 50 per cent of females report daily energy intakes of less than 1600 kcal (6694 kJ)(below the lowest recommended dietary allowance(RDA)), compared to 4.5 and 13.7 per cent of males and females aged 25-34 years. While there are moderate declines in the prevalence of overweight, the prevalence of males underweight increased from 4 per cent among 50-54 year-olds to over 35 per cent among those 65 years and older; and among females the corresponding numbers are from 2 per cent to 10 per cent. All trends with age were significant ($p < 0.005$). There are significant declines in energy intake, and alarming increases in the prevalence of underweight with increasing age among males. These results are cause for concern and further research in this area is warranted. (AU)

1973. **Zohoori, Namvar, Elizabeth Ward, Georgiana Gordon, Rainford J. Wilks, Deanna E. Ashley, and Terrence E. Forrester.** “Non-Fatal Violence-Related Injuries in Kingston, Jamaica: A Preventable Drain on Resources.” Injury Control and Safety Promotion 9.4 (2002): 255-62.

Using data for a one-year period from the Kingston Public Hospital (KPH) in Jamaica, we describe patterns of non-fatal violence-related injuries, and carry out simulation analysis to estimate rates of hospital admission under various injury reduction scenarios, and the potential savings that can be realized by reducing violent crimes. In this period there were 6107 registered violence-related visits to the KPH representing 11.5% of all recorded visits. Of these 16.6% (1001) were admitted. The most common methods of inflicting injury was by stabbing (52.1%), blunt injuries (37.9%) and gunshot wounds (7.3%). Multivariate analyses indicated that gunshot injuries, stab injuries, being male



between the ages of 15 and 44 years, receiving the injury in November or December, and being injured by a stranger or unknown assailant, were significant correlates of a higher probability of admission. Simulation analysis with various injury reduction scenarios indicated decreases in the probability of admission ranging from 12% to 44%, with estimated savings of up to 31% of the annual supplies budget of KPH.

UWI Center for Environment and Development

1974. **Binger, Albert.** “Global Public Goods and Potential Mechanisms for Financing Availability.” Fifth Session of the Committee for Development Policy. (New York, New York: April 7-11, 2003). http://www.un.org/esa/analysis/devplan/al_binger.pdf.

Focuses on global public goods (GPGs) and innovative financing mechanisms in the pursuit of sustainable development. Also explores and examines the concept of sustainable development within the framework of the Millennium Development Goals (MDGs), adopted by the international community in 2000.

1975. —. “Natural Resilience.” Our Planet (2004): 24-25.
<http://www.ourplanet.com/imgversn/151/binger.html>.

Argues that the survival of small-island developing states (SIDS) is dependent on their ability to manage their natural resources effectively. Highlights the Barbados Programme of Action which is geared towards promoting sustainable development in small-island developing states.

1976. **Clayton, Anthony.** “Cleaner Technologies: The Implications for Developing Nations.” The Caribbean Economy: A Reader. Editor Dennis Pantin. Kingston, Jamaica: Ian Randle Publishers, 2005. 716-29

Any move to improve energy and resource use efficiency is both necessary and welcome, and cleaner production, closed loop producer-consumer production systems and industrial symbiosis have dramatically expanded the range of possibilities in this regard. These developments could have serious transitional implications, however, for those countries that are still overly dependent on the export of particular commodities, as any significant increase in the speed with which cleaner and more efficient production systems are developed and deployed is likely to result in lower market prices for those commodities, and a consequent decline in national income. This could, in turn, undermine the attempts being made by those countries to move themselves onto a more sustainable development pathway. At the same time, however, these new production concepts could provide solutions to a number of regional problems, some of which appear daunting and intractable in isolation, but which may be solvable in combination.

1978. —. “Sustainable Tourism: The Agenda for the Caribbean.” Tourism and Hospitality Education and Training in the Caribbean. Editor Chandana Jayawardena. Kingston, Jamaica: The University of the West Indies Press, 2002. 285-300.

Tourism has become a critically important source of foreign revenue for a number of developing countries, including several in the Caribbean region. In some of these countries, however, the industry is being encircled by mounting environmental and social problems that threaten future growth. As a result, there is now a great deal of discussion about sustainable tourism. This resolves into two tasks: to secure the long-term future of the industry and to ensure that it contributes to a wider process of genuine sustainable development and growth by fostering a more socially and environmentally constructive engagement with other sectors of society. This raises some profound and challenging questions, which indicate an urgent need to clarify national strategies for tourism, assess the performance targets and criteria set by the industry itself, and develop the management strategies needed to address these new challenges.

1979. **Clayton, Anthony, John Muirhead, and Han Reichgelt.** “Enabling Industrial Symbiosis Through a Web-Based Waste Exchange .” Greener Management International 40.93-106 (2002).



Industrial ecology is a new approach to production that entails redesigning and zoning industrial processes in order to recover or eliminate waste, thereby increasing profitability and competitiveness while reducing environmental problems. Although the approach has its genesis in high-income industrial countries, the approach may offer solution to many of the problems facing developing countries. However, its implementation demands that some of the issues relating to innovation and the dissemination and uptake of new management concepts and technologies be addressed. This paper describes an attempt to adapt an internet-based market mechanism to support the preliminary stages of the development of an industrial ecosystem in a relatively poor country, namely Jamaica. The software was developed in Australia but had to be extensively adapted to the Jamaican environment via an iterative process of user-requirement capture. The paper describes the various stages required in the specification and establishment of an electronic web-based waste exchange in a relatively poor economy.

Clayton, Anthony See also 1566, 1718, 1980, 1983

1980. **Harrison, Lynn C., Chandana Jayawardena, and Anthony Clayton.** “Sustainable Tourism Development in the Caribbean: Practical Challenges.” International Journal of Contemporary Hospitality Management 15.4/5 (2003): 294-99.

The 2003 Worldwide Hospitality and Tourism Trends (WHATT) roundtable discussion, held at the University of the West Indies in Jamaica, focused on the issues affecting the development of tourism in the Caribbean. Fourteen industry practitioners and academics from the hospitality and tourism sector discussed the definitions of “sustainable tourism development” and debated the key development issues in Caribbean tourism-related education and research needs. The meeting agreed that there was a lack of research and intellectual focus on Caribbean tourism, although many Caribbean governments are in clear need of policy guidance. The meeting, therefore, identified a few achievable action points with the aim of addressing this problem.

1981. **University of the West Indies Centre for Environment and Development**, Collaborator. Global Environment Outlook 3: Past, Present and Future Perspectives. London, England: Earthscan Publications, 2002. <http://www.unep.org/geo/geo3/english/pdf.htm>.

(In collaboration with several regional and international organizations)

This flagship report served as the crucial environmental assessment for the 2002 World Summit On Sustainable Development (WSSD), held in Johannesburg, South Africa, and for environmental policy and research worldwide. The successor and companion to GEO-2000, GEO-3 comes 10 years after the Rio Earth Summit and 30 years after the first international environmental conference in Stockholm in 1972. In a 30-year retrospective analysis, it provides an integrated explanation of the conditions, trends, and associated policy responses, that have shaped our environmental inheritance. These are organized under the themes of land, forests, biodiversity, freshwater, coastal and marine areas, atmosphere, urban areas, and disasters. A special focus on human vulnerability to environmental change highlights the increasing risks and impacts on people. In an outlook section, the report presents detailed scenarios of what could happen over the next 30 years, with recommendations on policies and actions that should be adopted today.

1982. **University of the West Indies Centre for Environment and Development.** The Growing Vulnerability of Small Island Developing States. 2002. <http://www.un.org/special-rep/ohrlls/sid/sid2004/Univ.%20of%20W.Indies-Growing.pdf>.

(Draft prepared for The United Nations Development Programme Capacity 21 Project)

Synthesizes earlier studies of the three types of vulnerability that pervade small island developing states (SIDS) - economic, social, and environmental. This triple handicap arises from the interplay of a wide variety of factors: their size, geographic dispersion (and, in many cases, remoteness); their vulnerability to natural disasters; the fragility of their ecosystems; their isolation from markets and their limited internal markets; migration (particularly of highly skilled citizens); their limited commodities and consequent dependence on imports; and their limited ability to reap the benefits of economies of scale. Though they share all these problems in varying degrees, the SIDS which now



number 43 of the 191 Member States of the United Nations - are even more diverse culturally than most of the world's countries; they range from Malta through Mauritius and are found in all geographic regions. This paper calls attention to the implications of vulnerability for governance and for trade regulation, as distinguished from the considerable body of existing work on the concept in its economic, social and environmental dimensions. The authors also present a series of recommendations for reinforcing the resilience of SIDS, including proposals for education and WTO negotiations.

1983. **Wehrmeyer, Walter, Jonathan Chenoweth, Anthony Clayton, Manuel Fernandez-Lopez, and Ken Lum.** "Foresighting and Technology Choice in Small Developing Countries." European Union-United States Seminar: New Technology Foresight, Forecasting and Assessment Methods: (Seville, Spain: May 13-14, 2004).

<http://www.jrc.es/projects/fta/papers/Session%204%20What's%20the%20Use/Foresighting%20and%20Technology%20Choice.pdf>.

This paper will report on initiatives and the design features of two Foresighting for Development (F4D) programmes in two small island states, Jamaica and the Republic of Seychelles. The authors also make recommendations for other programmes, giving consideration to new capabilities and needs that may rise from the changes and opportunities brought about by the development in Information Technology.



UWI Distance Centre

1984. **Marrett, Christine, and Grace Turner.** “Open Learning and Adult Education in Jamaica: the Case of the University of the West Indies (UWI) and the University of Technology, Jamaica (UTech)”. Kingston, Jamaica: UNESCO Office for the Caribbean, 2002.

At the 1997 Fifth International Conference on Adult Education (CONFINTEA V), participants committed to “opening schools, colleges and universities to adult learners. . . by [*inter alia*] . . . creating opportunities for adult learning in flexible, open and creative ways” (UNESCO, 1997, p. 29). Through a review of the literature and university documents, interviews with key university personnel, and personal observation, the authors examine open learning in general, and approaches to, and degree of, its application in two universities in Jamaica: The University of the West Indies (UWI) and the University of Technology, Jamaica (UTech), with a view to assessing how far the commitment of CONFINTEA V has been implemented.

Marrett, Christine See also 1986

