The Busselton Health Study

Newsletter

Vol 1 - Issue 1 October 2004



Dr Kevin Cullen, Founder of the Busselton Population Medial Research Foundation

Welcome to the first issue of the Busselton Medical Research Foundation Newsletter .
The Foundation is embarking on a new and exciting phase in the Busselton
community and this newsletter aims to keep you in touch with what is happening,
provide feedback on the current Busselton medical research, and provide information
on how the community can help to continue the unique and world renowned
'Busselton Health Study'.

INSIDE	HDL-The Good Cholesterol6
Being a Participant - Is it good for your health?2	Don't let your body 'rust' - Haemochromotosis6
Coeliac Disease in Busselton2	The asthma gene7
Coming to Blows - Lung function and health3	The Good Living Expo7
A Cold Shower	Membership coupon7
- Asthma and DNA3	Fundraising and Promotions8

A place of our own

The Busselton Population Medical Research Foundation believes the future Busselton Health Surveys can be made more efficient and arrangements with survey participants more effective if surveys can be carried on continuously through the year rather than being squeezed into a few very busy weeks.

The Busselton Health Study warrants a permanent local base, an office equipped with survey equipment, computers and office equipment and a local secretary/coordinator. This is the plan for the future with the help of the Busselton community.

The major population surveys and research studies have been, and hopefully will be, funded by grants from government agencies such as the National Health and Medical Research Council of Australia and Healthway. The work at the survey facility has been largely carried out by volunteers on `holidays'.

Unfortunately research grants never provide funds for so called "infrastructure" and this is how a Busselton Health Study office is regarded.

For the time being the Foundation has been loaned space in South West Area Health Service. In an effort to raise funds we have decided to ask the Busselton community who are real partners and beneficiaries in the Busselton Health Study to help us.

Local Marketing and PR consultant, Natalie Venosi of MOSAIC, is assisting with a fundraising and communications drive over the next few months. With the help of Elspeth Inglis, a long time Survey Volunteer and Coordinator, they have secured sponsorships to help cover some of the costs of producing and distributing the first Busselton Health Study Newsletter.

Please support these sponsors who have recognized the worth of the Busselton Health Study to the people of Busselton.

The first major fundraising event is a dinner dance and auction on Friday November 19, 2004 with Patron Michael Chaney (details inside). Planning is also underway for the "Good Living Expo" to be hosted in September 2005 at the Geographe Leisure Centre, which will showcase activities, demonstrations, products and services relating to health, fitness and wellbeing.

Without your past cooperation and future support the Busselton Health Study would not be able to continue contributing to the better understanding of common health problems, lifestyle and environmental factors impinging on health in Busselton and beyond.

Become a FREE Supporters' Group Member

Be kept informed about all the latest Foundation news, plans and health seminars. Membership is free of cost and obligation. A register of member's address and phone numbers will help to ensure future communications

Donations are always welcome and will greatly help to establish a local health survey office in Busselton.

All donations of \$2 and over are tax deductible. Registration coupon inside back page Enquiries ph: 08 9754 0548



Is being a participant in the Busselton Health Study good for your health?

By Associate Professor Matthew Knuiman, School of Population Health, University of Western Australia

The Busselton health surveys, inspired by local GP Kevin Cullen, commenced in 1966 and represent one of the longest running health studies in the world. They are internationally known thanks to the people of Busselton and the 250 health research articles that have been based on the findings from these surveys. You can easily verify this for yourself simply by doing a Google internet search of "Busselton Health Study".

The findings have helped health professionals, researchers, planners and managers to identify and understand trends in health behaviours (like smoking) and health outcomes (like heart disease) and, very importantly, to understand why some people have higher risks of certain diseases than others.

It is absolutely fantastic that the community of Busselton, through the surveys, has been able to help Western Australia and the world in general achieve a better understanding of health and disease that slowly but surely leads to a better life for us all.

However, what about the health of the community of Busselton and the health of the survey participants themselves? In the early 1990s a special study was conducted that compared the mortality rates in the survey participants with the whole Busselton community and the whole South-West region of WA. This study showed that survey participants had lower death rates in total and lower death rates from cardiovascular diseases than the whole Busselton community and the community had lower rates than the whole South-West region. The complete findings from this study were published in the Australian Journal of Public Health (vol 18, pages 129-135, 1994) and the West Australian on 14 July 1994 reported "Busselton death rate fall linked to study". This evaluation study however could not provide scientific proof that the differences were actually due to

the surveys themselves except perhaps in middle-aged women who showed the biggest drop in death rates over the period from 1966 to 1989.

More recently, Busselton Health Study researchers, conducted another study but this time they also looked at rates of hospital admission as well as death rates. Once again the findings showed that survey participants (especially those who participated in multiple surveys) continued to enjoy lower death and hospital admission rates than the whole Busselton community and the Busselton community had lower rates that the whole south-west region. The complete findings were published in Australian and New Zealand Journal of Public Health (vol 28, pages 267-272, 2004). However, once again, the evaluation study could not provide scientific proof that the differences were actually due to the surveys.

Although the scientific proof of the reason remains elusive, the fact remains that the Busselton community (especially the people who came to the surveys) enjoys some of the lowest death and illness rates in Australia. Long live the people of Busselton and long live the Busselton surveys!

Coeliac Disease in Busselton – More Common Than We Thought

By Dr Digby Cullen, Department of Gastroenterology, Fremantle Hospital

Coeliac disease is an inherited allergy to gluten, a protein in wheat barley and rye (not oats but its virtually impossible to grow oats without contamination by the other cereals). This may cause malabsorption and result in iron and vitamin deficiencies, osteoporosis (reduced bone density), diarrhoea, rashes, fatigue, depression and rarely other neurological problems. The number of people in Australia with coeliac disease is unknown. Fortunately new diagnostic blood tests for coeliac disease with improved accuracy have recently become available that allow a better way of screening the population. The stored blood specimens so generously donated by participants in previous Busselton Surveys provided a perfect opportunity to find out the frequency of this condition and hopefully improve the health of those people identified.

A study was therefore conducted by Busselton Health Study researchers in the year 2000 on 3011 people who donated blood at the 1994-5 Survey. This showed that 1 in 250 Busselton people had coeliac disease using anti-endomysial antibody as the screening test. A current study using anti-transglutaminase antibody as the screening test suggests that this figure is much too low and the true frequency of coeliac disease is 1 in 100 people. Individuals who have a positive anti-transglutaminase antibody are being contacted so that the definitive test, endoscopy and microscopic examination of tissue specimens taken from the upper small bowel can be arranged.

Most people in the study group so far diagnosed with coeliac disease in Busselton were unaware that they had the condition although most had symptoms and a significant minority were iron deficient or osteoporotic.



Coming to Blows in Busselton

Clinical Associate Professor Alan James, Department of Pulmonary Physiology, Sir Charles Gairdner Hospital; School of Medicine and Pharmacology, University of Western Australia

One of the simplest and most useful tests undertaken in the Busselton studies is the blowing test where subjects are asked to blow and blow and blow, and blow "right out" after taking in as big a breath as possible. From this test it is possible to derive the amount of air that can be blown out in one second – the forced expiratory volume in one second – the FEV $_1$. This single measurement is very stable within an individual and is a good way to compare people with each other. Other things being equal, the FEV $_1$ is greater in males than females, taller persons and in younger versus older adults. The rate at which the FEV $_1$ increases with growth in children and gets smaller with age in adults is altered by respiratory illness such as asthma or by smoking. Like serum cholesterol, blood pressure and blood sugar, the FEV $_1$ is a predictor of future health, even after taking smoking into account. No-one knows why this is so.

By studying the FEV,, and comparing it between people and relating it to other markers of health it is possible to examine the effects of the environment and genetic factors on the health of the lungs. The FEV, is easily measured and had been a part of the Busselton Population Health Survey measurements made since 1966 (in men) and 1969 (in women). It has been useful to have this objective measurement of lung health when trying to determine the reasons behind the steady increase in asthma that has been observed in Busselton (and elsewhere) over the last 30 years. This has been particularly useful recently when we have examined the sensitivity of the airways by measuring the change in FEV, after breathing histamine - a drug which contracts the airways. By showing that airway sensitivity has remained stable while the amount of asthma, diagnosed by a doctor, has increased in the community, we can surmise that the doctors are diagnosing respiratory symptoms as asthma more often than they used to or that something in the environment is provoking the airways more, or both. Only by having the FEV, measurement can we analyse changes in diagnostic patterns. Of course the FEV, is also a good marker of your own current health. In the future, we will be looking for more blow-hards from Busselton to find out more about the FEV, and establish its usefulness as part of normal health screening.



Research Assistant Rachel McGlinn with 1000th survey participant Mrs Delys Forrest demonstrating the Vitalograph

A Cold Shower

Clinical Associate Professor Alan James, Department of Pulmonary Physiology, Sir Charles Gairdner Hospital; School of Medicine and Pharmacology, University of Western Australia

The medical journal Nature is considered to be one of the top few medical journals where only the most important advances in medical knowledge are published. Medical researchers consider it a considerable achievement to get a paper in Nature – like getting on the cover of "The Rolling Stone" for musicians. So we were proud when our team, along with our colleagues from Oxford in England, were part of a study published in Nature in 1996 that showed for the first time that there were regions of human genetic code (the human genome) that were associated with asthma. This genetic study, and many subsequent studies, used the DNA from white cells in blood samples from volunteers in Busselton. The DNA, from people with and without asthma, was compared using a number of markers that stick to known parts of the genetic code. Some markers appear more often in people with asthma than in those without asthma.

To do this comparison, blood samples were taken from family members of 250 families with 2 or more children. Our research teams travelled to each family home to collect information about asthma, smoking and respiratory symptoms, to measure lung function and to test for common allergies using skin tests, to collect small samples of dust from the floor and beds. Since the prick of the needle was numbed by anaesthetic cream, vacuuming the beds seemed to cause the most consternation! Collection of all the samples was completed by a number of "SWAT" teams, scouring the streets and by-ways of Busselton and surrounding countryside, armed with our equipment, questionnaires and a local road map. The study was undertaken during the winter of 1992. We soon discovered that winter Busselton is COLD! However, in most places it was HOT indoors.

We visited many cosy houses which soon had us sweating in our winter gear, we visited dairy farms (on one occasion we met, but did not shake hands with, the owner who was assessing pregnancy rates in his cows!) and we visited numerous farms and businesses to complete the studies. Our team lived for a 2-month period in a rented house. Volunteer researchers (doctors, including Dr Dick Adams, nurses, scientists and assistants) rotated through the house, taking weekends or time off from their usual duties, over a 2 month period. The whole project was completed at a nominal, cost based upon the goodwill and efforts of the people of Busselton and the research team. Subsequent studies in the US have been undertaken with a budget approaching AUS\$2 million!! To get the study started, I took possession of the rented house around 1 am on a cold Busselton winter night. After having driven from Perth after work, been fined for (unknowingly) speeding through Busselton (67 km/hr) at 1 am and then being unable to light the gas heater, lying on cold concrete outside with a box of matches in a brisk Southerly gale, I had to treat myself to a cold shower in the morning! I remember saying, out loud, "It can only get better than this!"

It did – now we even have a paper in Nature and many publications elsewhere, attesting to the unique importance of the sample from Busselton families. Twelve years later these samples are still making a major international contribution to sort out which genes are important in asthma. From little things, big things grow.



The inaugural Busselton Health Study Newslette

JENNIFER RUSSELL PODIATRIST



66 Bussell Highway Busselton Telephone: 9754 6461 Facsimile: 9754 6463 After Hours: 9754 3080 Postal Address PO Box 1200 BUSSELTON WA 6280

boulevard & central

haircraft

shop 8, Busselton Boulevard Shopping Centre phone 9752 2391 shop 18, Busselton Central Shopping Centre phone 9752 2756



fashion & footwear for all jewellery, pets & supplies, p & home wares, sumptuou coffee, shakes, computer property mana

CALLOWS **CORNER NEWSAGENCY**

Telephone 9752 1240 Facsimilie 9752 4707

87 Queen Street Busselton WA 6280 (PO Box 379)

Email callows@iinet.net.au



Emily Bignell

40 Queen Street Busselton WA 6280

Phone: (08) 9751 5777 Mobile: 0438 076 066 (08) 9751 5888 Email: bignell@arach.net.au

BIGNELL - SINCE 1899 - BUSSELTON



Ph/Fax 9754 1985 52b Bussell Highway,

Now you can say NO to plastic bags! Ph: 0439 960 861 or order online at www.thetrolleybag.com



- Environmentally friendly
- Washable, 100% natural fabric
- Tough and long-lasting, print friendly
- Great promotional tool or fundraiser Clips onto the inside & outside of
- shopping trolleys
- Handles clip together to seal top of bag
- Fits into checkout bag racks
- Carries up to 25kg of goods
- Unique Patented Design

Michael Bignell

40 Queen Street, Busselton Western Australia 6280 Phone (618) 9751 5777 • Fax (618) 9751 3614 Mobile 0408 902 337 • Email bigdevelop@arach.net.au

BIGNELL • SINCE 1899 • BUSSELTON



Ph: (08) 9752 1033 Fax: (08) 9752 4595

RETRAVISION

John Valentine **Proprietor**

Valentines Retravision

47 Queen Street Busselton WA 6280 Telephone: 08 9752 1266

Facsimilie: 08 9752 4442 Email: valentines@retravision.com.au

Home appliance specialists

Timber Furniture by Bob Monkman, Woodcraft, Jewellery, Glassware, ceramics and original art. Mon-Fri 9-5pm Sat-Sun 10-4pm



226 Naturaliste Terrace Dunsborough WA 6281 Tel; 9755 3455 Fax; 9755 3395 www.dunsboroughgallery.com.au



er is proudly sponsored by these local businesses.

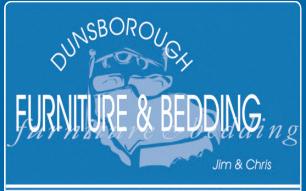


N 7 DAYS A WEEK

s Supermarket 8am - 9pm access & ample parking otal shopping!

ough**Centrepoint**

ages, fresh food, exquisite sharmacy, liquor store, gifts s meals, snacks, ice cream, s, furniture, newsagency, gers, real estate



234 Naturaliste Terrace, Dunsborough 6281 Ph/Fax: 9755 3149





DunsboroughPharmacy

Michael Edwardes M.P.S. Ph.C Centrepoint Shopping Centre, Dunsborough WA 6281 Telephone 9755 3272 or 9759 1253 Facsimilie 9759 1470 Open 7 days

ffice Furniture

or all your office needs



Busselton WA 6280



Fennessy Nissan - Ph 9752 1577 4 Bussell Highway, Busselton



Fennessy Holden - Ph 9752 1577 4 Bussell Highway, Busselton



il & Ryan Henchie

27 Strelly Street Busselton WA 6280

The country store with city prices!

BRIDGESTONE TYRE CENTRES

Bill Kendall

Proprietor

BUSSELTON

5 ALBERT STREET, BUSSELTON, WA 6280 **TELEPHONE: (08) 9752 1586** FACSIMILE: (08) 9752 4508



That's where you go

63 Queen Street
BUSSELTON
Ph 9754 2991



Park Shopping Centre 7122

Jenny Cross

Manager/Partner

Jetset Busselton

84B Queen Street / PO Box 13 Busselton WA 6280

Tel: (08) 9752 3377 Fax: (08) 9752 4910 Mobile: 0407 523 377

Email: jetset@westnet.com.au Web: www.jetset.com.au/busselton



For people who are going places.
Crossworld Travel ABN 21 883 402 859

trading as Jetset Busselton an independently owned franchise (Licence No. 9TA00450 - 9TA00451)

Down South Specialists

Property sales

in Dunsborough, Yallingup, Eagle Bay & Siesta Park. We specialise in Rural, Residential and Viticultural properties

www.capenat.com



Shop 3, Dunsborough Village Dunsborough WA 6281 Phone: (08) 9755 3555 Fax: (08) 9755 3598 www.capenat.com & info@capenat.com

HDL - the Good Cholesterol

Adjunct Associate Professor John Beilby, Senior Scientist, PathCentre.

Cholesterol is important for normal operation of the body and it exists in the blood in several forms. The two main forms are low-density lipoprotein (LDL-cholesterol) and high-density lipoprotein (HDL-cholesterol). LDL carries cholesterol from the liver to the rest of the body where it is used by growing cells. LDL is known as the 'bad cholesterol' since it is a risk factor for heart disease as it contributes to the narrowing of the arteries in the heart. On the other hand, HDL clears excess cholesterol from the body and has the effect of reducing blood LDL levels and has been labelled the 'good cholesterol'. A number of studies have shown that higher levels of HDL can protect against heart disease.

HDL levels are controlled by factors such as smoking, level of exercise and how much weight we carry, diabetes and by the genes we are born with. Genetic factors are responsible for up to 50% of the variation in HDL levels. A key protein in HDL metabolism is cholesteryl ester transfer protein (CETP) and is known to increase the movement of cholesterol from the cells back to the liver, causing a reduction the blood levels of LDL. In a study of the Busselton samples collected in the 1994/95-population survey we have found that small changes in the gene for the CETP protein can cause significant increases in HDL levels, even after correcting for other factors that are known to affect HDL levels. In the future other genes involved in HDL metabolism will be studied to gain a better understanding of what factors control our HDL levels. This work may lead to new ways to treat low HDL levels.

Don't let your body "rust"

Professor John Olynyk and team from the University of Western Australia Department of Medicine and co-workers from the Queensland Institute of Medical Research

If the body accumulates too much iron a disorder known as haemochromatosis can occur and may result in cirrhosis of the



Bert Johnson with Delma Cuthbert who assisted with the collection of blood in the 1994/95 Survey which identified his Haemochromatosis



liver, liver cancer, diabetes, arthritis and heart failure if left untreated. By far the commonest type of haemochromatosis in the Australian population is hereditary haemochromatosis where a single faulty gene or less commonly a combination of several faulty genes results in the genetic predisposition to absorb too much iron.

For the past 6 years The Busselton Health Study has conducted ground breaking research looking at the impact of iron overload disease in an Australian population. A total of 3011 Busselton Health Study participants had iron studies performed and



The "Iron Man" of Busselton Mr Bert Johnson with (from left to right)
Delma Cuthbert, Elspeth Inglis, Leila Coffey and Rachel McGlinn

were also tested for iron overload genes (h63D and C282Y mutations). This testing showed that haemochromatosis affects 1 in 190 adults in the Busselton population. 16 individuals were identified as having hereditary haemochromatosis and most have benefited from treatment to reduce body iron stores (bloodletting also known venesection). The study also revealed that common mutations in the genes responsible for this disorder are carried by up to 1 in 3 individuals although 2 "bad" genes are usually required for iron overload to occur.

A landmark study on Busselton participants published in the worlds most famous medical journal, the New England Journal of Medicine in 1999 described the impact of the newly described Haemochromatosis gene in a normal population level for the first time. Following this study, several projects have examined the relationship between iron status and cardiovascular disease (there isn't one). More recently, interest has turned to the study of the role of iron status and haemochromatosis gene mutations as risk factors for intellectual impairment, Alzheimer;s disease and Parkinson's disease.

The asthma gene

Clinical Professor Bill Musk, Department of Respiratory Medicine, Sir Charles Gairdner Hospital; School of Population Health and School of Medicine and Pharmacology, University of Western Australia

The Busselton community has been an ideal population to study the genetic determinants of asthma because lung function tests have been part of the Busselton surveys since 1966 and the Busselton people have understood the value of epidemiological studies. The first gene associated with asthma was described by Professor Bill Cookson of Oxford University in a clinic population in Oxford UK and families from Busselton who joined a study in which we collaborated in 1992.

It is believed that asthma is a complex disease with multiple environmental and genetic factors interacting with each other. This makes it particularly difficult to study because all asthmatics are not quite the same and because since 1992 other genetic markers have been found. A better understanding of the genetic associations of asthma will help understand the abnormalities that may give rise to asthma, detection of people predisposed to developing asthma on exposure to agents in the environment and assist in the development of new treatment approaches.

This is a rapidly expanding field and Busselton has already made important contributions to it. In 1994/95 5,000 people who had been in previous Busselton surveys also carried out lung function tests and provided blood cells for genetic studies. There is now a great deal of interest worldwide and Western Australia now has its own genetic epidemiologists with the establishment of professional chairs in genetics at the University of WA to carry on the collaborative work commenced 12 years ago.

SW Good Living Expo

Busselton Health Study

BUSSELTON WA 6280

PO Box 659

The inaugural "Good Living Expo", which is planned for the 23-25 September 2005, is set to become a major annual signature event for the Foundation and the south west.

Coordinator, Natalie Venosi, has received incredible support for the concept and recently secured \$2,000 from the South West Development Commission's annual events funding program. It is hoped that the event will attract some major corporate sponsors and a great diversity of exhibitors.

The major fundraising event will be hosted at the Geographe Leisure Centre ... more information in the next newsletter!



New Foundation member Professor David Ravine and Professor Lyle Palmer



Zeb Jamrozik, a medical student doing his BMedSci using Busselton data.



Some of the Busselton genetic epidemiology researchers Prof Lyle Palmer, Adjunct A/Prof John Beilby, Dr Jennie Hui, A/Prof Joseph Hung, Dr Caroline Chapman



Foundation Board Members – Chair Clinical Professor Bill Musk, Associate Professor Matthew Knuiman, Dr Peter Hollingsworth, Clinical Associate Professor Alan James, Professor John Olynyk

BUSSELTON HEALTH STUDY SUPPORTERS GROUP MEMBERSHIP ACCEPTANCE

rirst name/s		Surna	ame
Home address			P/Code
Home phone		Work	Mobile
Email:			
			tion Medical Research Foundation (Inc.) Study office in Busselton
Donation amount:			Cheque / cash / credit card
Card Type:		Name on Card:	
/	/	/	EXP / /
		DELIVER TO:	01.1.0%

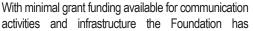
Busselton Health Study Office
South West Area Health Service
18 West Street BUSSELTON
Ph 9754 0548

Donations of \$2
and over are tax
deductible

٠,

Fundraising news and promotions

The Busselton Health Study requires a permanent local base: an office equipped with survey equipment. computers and a local secretary/coordinator along with communications tools such as this newsletter.



engaged the help of marketing consultant Natalie Venosi of MOSAIC to assist with a fundraising and communications drive. Natalie, together with the assistance of local Foundation secretary, Elspeth Inglis, is planning a number of events and activities to begin the fundraising drive.

Already they have secured a major portion of the funding required to produce and distribute this newsletter with the generosity of the local businesses featured and Councillors Bev Clarke and Helen Shervington who donated \$500 from the Shire Small Projects Fund. Busselton Telephones have kindly donated \$100 towards a much needed mobile telephone for Elspeth in her role as local secretary. Sponsors are now being sourced to assist with product donations for the Auction to be held at a Dinner Dance on November 19, 2004 (see below).

Website

A new website is currently under construction at www.busseltonhealthstudy.com where up-to-date information about events, activities, research, surveys, news and fundraising progress can be easily sourced. This is being sponsored by Leanne Williamson of new Dunsborough business WebID. It is expected to go live by the end of October 2004.



With Special Guest Speaker: Foundation Patron Mr Michael Chaney

The Geographe Bayview Resort Venue:

Hermitage Room

Bussel Highway Busselton

Friday November 19, 2004 Date:

Time: 7pm for 7.30pm sit down (tables of 10)

Tickets: \$120 per head Includes: 4 Course Meal

Wine from Cullen & Pierro

Beer and soft drink

The Kyla Brox Band: 5 piece British R&B

Sensation (www.kylabrox.com)

Auction of fine Wine, Jewellery, Art & more

Door and Spot Prizes

Limited tickets available please contact Elspeth Inglis to secure your booking for this night of nights!

Phone: 9727 1148 Mobile: 0427 502 662 Email: elspethi@westnet.com.au PO Box 659, Busselton WA 6280

Methods of Payment:

Visa, MC, BC, Cheque & Direct Deposit

A sample of what will go under the hammer on Friday 19th November...

Nina's Jewellery brings you the latest in jewellery design using the cream of Western Australian jewels and precious metals. With two locations in Western Australia - Kununurra and Dunsborough - we pride ourselves on our ability to create the perfect jewellery piece for you or your loved one.

Nina's have a strong community charter and are proud to sponsor these stunning pearl neck pieces for the Busselton Health Study Auction.

Jenny Taylor Hang Ups Gallery has kindly donated a Jenny Taylor original and Caves Realty Yallingup has donated two exclusive pieces from Peter Davies' private collection.

Limited edition wines, collector items and other exclusive pieces of art and jewellery will also be auctioned on the night.

Both neck pieces are currently on display at Nina's

Jewellery at

Dunsborough Centrepoint.



18k White Gold Oval Peacock Black South Sea Pearl with White Diamonds on 18k White Gold Cable.

White Gold Diamond and South Sea Pearl Neckpiece featuring 12.5 x 14mm Drop Pearl and White Diamonds





Our creative sponsors







