

August 2014

Vol. 16 No. 8

<http://www.tgcfersoc.org>

**Summer Party: Sunday, August 17, at 2:00 p. m. – Lucy Melara’s Home,
7722 Hopewell Lane, Houston, TX 77071– Phone: (713) 728-1626**

A message from our President:

Hi Everyone!

I would like to welcome our three new members who joined at the last meeting as well as all the new members this year. I hope those who attended the July meeting enjoyed the project Cherie Lee presented. You all really got in there and did a great job getting the moss around the little balls and attaching your plants. This was the first time we had done this project and I think it went really well. Thank you, Cherie and Frank, for getting all the supplies together and showing everyone how you make moss balls. Good Job! (Editor’s note: Thank you Darla for providing the moss and plants.)

Thanks to everyone who brought snacks and drinks to the meeting, the refreshments were great.

It's *'Party Time'*! I would like to thank Lucy Melara for volunteering her home for our party this month. She asked us to check out her place before she would commit to the party because she is a plantoholic. I told her I thought we all were! So Marcia Livingston and Beth Ayer stopped by to see Lucy and her yard and give me a report on what they thought. Well the answer was an overwhelming “YES, please let's have the party there! It is so LUSH with ferns and all kinds of other plants with yard art, secret gardens, and more than the eye can take in.” They are so excited to get to go back for the party so they can look at everything again and see the things they missed the first time through. I can't wait! I would suggest good walking shoes since some of the paths will only accommodate one person at a time and we don't want any tripping or falling. She has a home fit for entertaining and I'm sure all will have a wonderful time. The signup sheet for food for the party did not make it around to everyone at the meeting so we need everyone to contact Faye Stansberry on what food / drink you will be bringing to help round out our fun. Thank you to the six who already signed up.

I know everyone is getting excited about the spore we put down in March. Dan Yansura has written a nice article on when and how to move them up to the next stages. So look for it in this newsletter.

Don't forget, the September meeting is our Plant Exchange. Remember, each member can bring up to 3 plants to trade. We have brought more plants in the past, but it makes the meeting run very long. The rules are as follows. We will hand out a ticket with a number to everyone who has brought plants to

swap. The person whose number is drawn gets to choose the very first plant. Whoever brought the plant that was chosen gets to pick next, and so on until all the plants have been picked. Bring plants everyone will want, no cuttings please. Ferns or any other plants are welcome.

For our October meeting, our own Joan Hudson will be talking to us about Cycads. November will be another hands-on project and then December will be our end of the year Holiday Party. We still need a volunteer to host the party!

In October we will be selecting our nominating committee for 2015 officers. I will be selecting a chairperson and the membership will elect two members to serve on the committee. The elections will be at the November meeting and the term will start in January.

Hope you are enjoying this cooler than normal summer we are having.

See you at Lucy's.

Darla



Up and Coming Attractions:

- Aug 17: Summer Party
at Lucy Melara's home
- Sept 21: Annual Plant Exchange
- Oct 19: Cycad Reproduction and More
presented by Joan Hudson
- Nov 16: Project
- Dec 14: Holiday Party
location TBD

Submitted by: Cherie Lee, Vice President (with Darla's help)



Summer Party

Don't forget our Summer Party at Lucy Melara's home August 17th. Please let Faye Stansberry know (call 713-734-0170 or 713-319-6957 or email stansberry.faye@yahoo.com) what refreshments you plan to bring to add to the festivities.



Please Welcome Our New Members:

Biruta Claunch
Eileen Donovan
Frank Tastomger



2014 Officers and Committees:

President:	Darla Harris
Vice President:	Cherie Lee
Secretary:	Anna Belle Hicks
Treasurer:	Mary McConnell
Board Members-at-Large:	Patrick Hudnall Larry Rucker
Hospitality Chair:	Faye Stansberry
Library:	Frank Lee
Marketing Chair:	Laura Jordan
Membership Co-chairs:	Beth Ayer and Marcia Livingston
Newsletter:	Cherie Lee
Spore Exchange:	Patrick Hudnall
Ways and Means:	Larry Rucker
- Raffle, Store, etc.	
Web Master:	Malcolm McCorquodale
Welcoming at Door:	Beth Ayer and Marcia Livingston



2014 Dues

If you have not done so already, please complete the membership form and return it with your payment to our Membership Co -chairs Beth Ayer and Marcia Livingston at our next meeting or mail it to:

Beth Ayer
5815 Portal Drive
Houston, TX 77096

TGCFS dues amounts:

Individual:	\$10.00
Family:	\$15.00
Student:	\$ 5.00

Please make your checks payable to Texas Gulf Coast Fern Society or simply TGCFS.



Refreshments

Refreshments for July were generously furnished by:

Drinks:	Martha Burg, Rodolfo Reyes
Savory:	Elaine Farrell, Larry Rucker
Veggies & Fruit:	Donna Williams, Rodolfo Reyes
Desserts:	Mary McConnell, Bob Wall
Service ware:	Cherie Lee

Please let Faye Stansberry know if you can help with the refreshments for any months in 2014. Email to stansberry.faye@yahoo.com or call 713-734-0170. Come out and enjoy some really delicious food!



Proposed Revision to By-Laws

On July 20, 2014, the TGCFS Board of Directors unanimously agreed to propose the following changes to the by-laws to the membership for a vote at the September meeting.

Current:

Article IV Section 3 Members, whose dues are delinquent for 6-months and have been duly notified, shall be automatically dropped from the membership roll.

Proposed:

Article IV Section 3 Members, whose dues are delinquent for **3-months** and have been duly notified, shall be automatically dropped from the membership roll.

Current:

Article VI Section 6 The Treasurer shall have charge of all monies belonging to the Society and shall make disbursements as set out by the Board of Directors or as approved by the Society. The Society will not be responsible for any expenditure exceeding \$25.00 without prior approval of the Board. The Treasurer shall deliver a quarterly financial report to the Newsletter Committee to be included in the appropriate newsletter. At the completion of the term of office, the Treasurer shall turn over all records to the newly elected Treasurer.

Proposed:

Article VI Section 6 The Treasurer shall have charge of all monies belonging to the Society and shall make disbursements as set out by the Board of Directors or as approved by the Society. The Society will not be responsible for any expenditure exceeding **\$60.00 for Board Members and appointed chairpersons or \$25.00 for other members** without prior approval of the Board. The Treasurer shall deliver a quarterly financial report to the Newsletter Committee to be included in the appropriate newsletter. At the completion of the term of office, the Treasurer shall turn over all records to the newly elected Treasurer.



Maturing Small Sporophytes

Sporophytes emerging from the gametophyte stage are small and fragile, and they need to be grown to a larger size and hardened off slowly. In nature this process may take a toll, with only a few plants surviving to maturity. However, when growing ferns from spore at home, growing conditions can easily be controlled to maximize success rate. In order to do this, the growing conditions must be kept within certain parameters, although there is some flexibility in how this goal is achieved. The major factors to control during this stage are the growing media, light, temperature, and humidity.

When a significant number of sporophytes begin to fill the spring pot, it is time to move these small ferns to a new pot with more room to grow. The small ferns will probably be only ¼ inch tall, but expanded space and a new, better-aerated media will improve growth. Most people germinate spores in a ground peat moss based mix, which is perfect for spore germination as it is dense, retains the spores on the surface and holds a lot of water. The roots of sporophytes, however, prefer a more open media where air is available for their growth. At this point, a commercial potting mix, which is generally more aerated than peat moss, can be used. I have observed, though, that coir, or ground coconut fiber, works much better than commercial potting mixes because it provides even more air spaces for root formation. Coir also drains better than potting mixes, which results in less root damage if plants are overwatered.

As the small ferns get larger, it becomes necessary to keep dividing them into new pots with more growing space, until each plant has its own pot. The potting mix should evolve as the ferns get larger, with perlite (or lava rock) and bark added (1/3 coir, 1/3 perlite, 1/3 bark). The idea is to create larger air pockets as the roots develop. The bark at this early stage should be a high quality orchid bark, and the size should be determined by the size of your plant (small bark for 1-3 inch plants, medium bark for 4 inch and larger plants). The most important thing is to promote a rapid, healthy root system for the young sporophytes. In order to observe the roots, I use hydroponic netted pots, and roots usually grow through the netting after a few months. This provides visual assurance that root development is proceeding normally and further aerates the root zone. Netted pots can only be used when the humidity is high

(80-100%); when the humidity drops into the 50-70% range, netted pots should be double potted with a regular pot.

Fertilization is best done with a weak liquid fertilizer and this can be accomplished during the regular watering process. Excessive fertilizer promotes algae growth on the media, which can inhibit plant growth.

Light and temperature should be kept within a certain range to promote growth. Lower than needed light levels and temperatures will stall growth and lead to a slow decline in the plants. Direct sunlight should be avoided, but bright indirect sunlight is fine. Artificial lights are easiest to control. A 1200 lumen light bulb (compact fluorescent or LED, natural light or 5000K), held about 10 inches above the plants, works well. Temperature is best kept in the 65-90 degree F range. In the winter, insulated terrariums can be heated with very small reptile pad heaters (8 watts) against a wall of the terrarium, as low temperatures will stop plant growth and promote fungal growth. Avoid using bottom heat as it quickly dries out the growth media.

Watering young ferns and controlling the humidity are the only things that need to be done on a semi-weekly basis. Check each pot and water only as needed to keep the growing media moist and try to avoid long periods of wetness. Humidity should initially be kept in the 80-100% range when plants are 3-4 inches or less in height. As they get larger, it can be decreased to 60-70%. To keep the humidity in the 80-100% range, some type of terrarium or plastic container is needed. The moist growing media should provide enough humidity; a small amount of condensation on the lid usually indicates 80-100%. If too much water condenses on the lid and starts dripping on the plants, it must be wiped off with a towel before it starts a lethal fungal infection. It usually doesn't take long to establish a stable humid environment.

If you have enjoyed watching your spores germinate, you will also enjoy watching your small sporophytes develop into small ferns. Barbara J. Hoshizaki used to keep her spore germination and small sporophyte covered pots on her kitchen counter where she could watch and enjoy them. This is ideal if you have clout in the kitchen. Otherwise, keep them someplace indoors where you can control their environment and check them on a regular basis.



Maturing sporophytes, from left to right:

Sphenomeris chinensis in the original peat-based spring pot, ready to be divided

Cyathea dealbata in coir/perlite/small bark

Cyathea princeps with roots growing out of netted pot in coir/perlite/medium bark.

Submitted by: Dan Yansura



Fern Identification

Ferns can be identified by the shape of their leaves, their spore pattern, rhizome color and texture, scale or hair shape and color, overall size of the plant, and the size and shape of the vascular bundles seen in a cross section of a stem. We need to know the identity of the plant in order to determine its cultural needs: whether it's hardy or tropical or somewhere in-between; how much light and water it needs; and what type of soil or potting mix it needs.

You might also want to know the name of a plant if you're taking pictures or collecting herbarium samples. Keys are an easy way to find the identity if you're fortunate enough to locate one for the area in which you're ferning. All the "Field Guides" and books on the ferns of various states or regions have keys to help with this. Keys take you step by step through the different characteristics of the plant until you have reached the final conclusion. They may even be helpful in getting you to the right family even if you're not in that particular state or region. If you're lucky your fern has a name tag and you can just look it up in one of your books (or the society's library books). If it doesn't have a tag, one of the society members may be able to help if you bring a leaf or the whole plant if it's small, to one of the monthly meetings.

Assuming you have a passing knowledge of ferns and you need to identify the plant from scratch, first look at the overall shape of the leaves. You should be able to at least eliminate some families because of their unique shape. The following are some fern leaf shapes (Figures 1 and 2) taken from an article printed in 'Frontiers in Plant Science' written by Alejandra Vasco, Robbin Moran, and Barbara Ambrose.

<http://journal.frontiersin.org/Journal/10.3389/fpls.2013.00345/full>

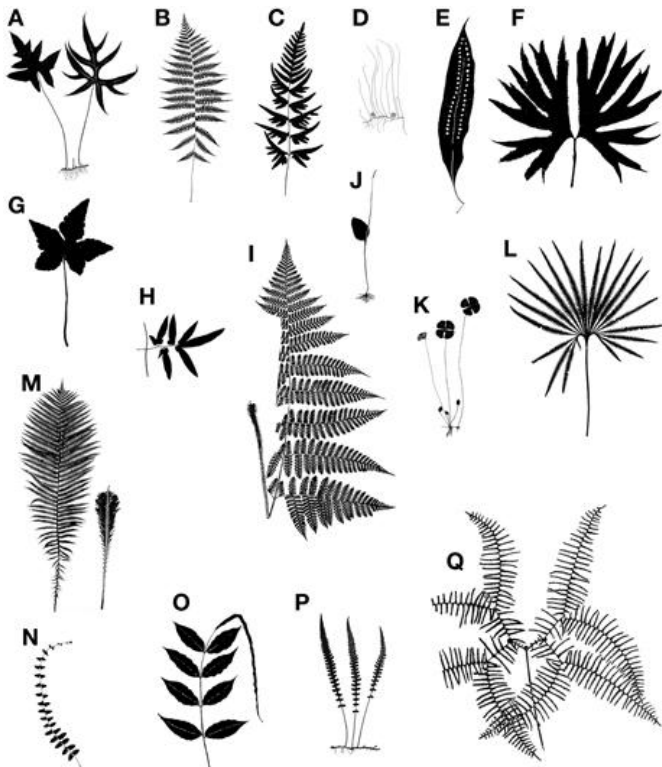


Figure 1 – Example Fern Leaf Shapes



Figure 2 – Example Fern Leaf Shapes

How many can you name? If you're having trouble, follow the link to the 'Frontiers in Plant Science' article or look for the answers later in the newsletter.

If your fern is producing spore you can compare the pattern to ones you can find in books or online. Color and placement are very important. Figure 3 has some examples of placement. A 20 to 30 power loupe or magnifying lens is good to have and can be bought online or from the society's store.

Top row – left to right:

Adiantum, Thelypteris, Polystichum, Woodwardia, Diplazium

Bottom row – left to right:

Blechnum, Pteris



Figure 3 – Example Fern Spore Patterns

If you cut a stem crosswise you will find a pattern of vascular bundles distinct to a specific family of ferns. Figure 4 was taken from the aforementioned article and is just a sample of the many possible patterns.

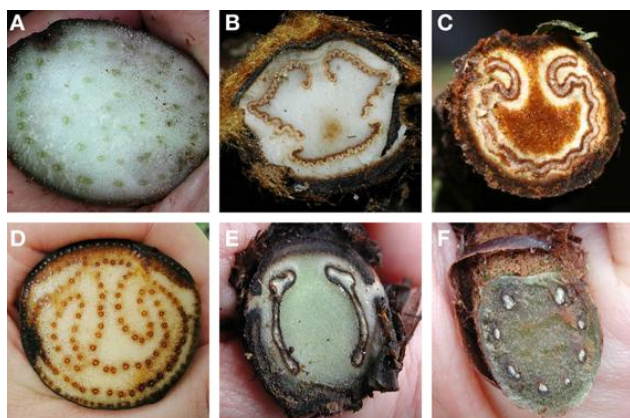


Figure 4 - Examples of petiole vasculature in ferns, as seen in cross section

- (A) *Eupodium laeve* (Marattiaceae).
- (B) *Dicksonia sellowiana* (Dicksoniaceae).
- (C) *Saccoloma chartaceum* (Saccolomataceae).
- (D) *Acrostichum danaeifolium* (Pteridaceae).
- (E) *Diplazium hians* (Eupolypods II, Athyriaceae).
- (F) *Polystichum concinnum* (Eupolypods I, Dryopteridaceae).

Hairs and scales found on rhizomes and petioles can also be useful in fern identification. Figure 5 from the Hardy Fern Foundation shows examples of various hair and scale structures. You will need your loupe to see this level of detail.

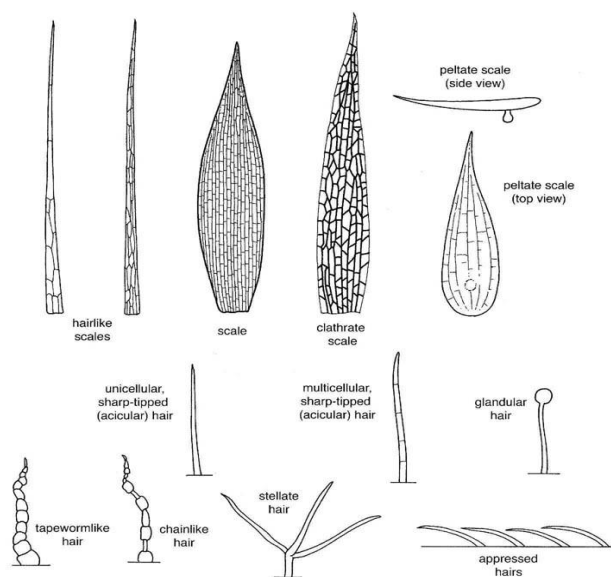


Figure 5 – Examples of hairs and scales

Finally, if you're serious about learning more about this family of plants a good place to start is the 'Peterson Field Guide to Ferns' for hardy ferns and if you're venturing to more tropical climates, don't leave home without doing your homework. The society has an extensive library of books you can borrow and you can find books and articles online for just about every state, country, and region where ferns are found - and that's all over the world.

Submitted by: Donna McGraw



Texas Gulf Coast Fern Society General Meeting – July 20, 2014

The regular monthly meeting was held at the Judson Robinson Jr. Community Center, Houston, Texas. The meeting was called to order by President Darla Harris at 2:08 PM.

General: Darla announced that copies of the book on Texas ferns were available for \$33. We are looking forward to one of the authors presenting a program sometime in the future. Guests were introduced and those bringing refreshments were thanked. Darla stated a Board Meeting will follow this meeting.

Program: Our project was making a fern ball. Darla said there was material for 30 balls. Cost was \$10 for members and \$15 for non-members. We were provided a Styrofoam ball, moss, fishing line, hanger, and fern, *Microgramma heterophylla*, or vine fern. Darla said any fern with rhizomes could be used. The ball should be kept in the shade, kept moist, and with humidity. It was a fun project and everyone was pleased with their outcome.

Plant Raffle: Larry Rucker ran the plant raffle and collected \$104.

Attendance: 22 members and 5 guests were present. Meeting adjourned at 3:30 PM.

Submitted by: Secretary Anna Belle Hicks



August Book Review

"The Ferns and Lycopytes of Texas"
by George M Diggs, Jr. and Barney L. Lipscomb

This is a new addition to our library. The book includes a general discussion of the structure and reproduction of ferns, the growing conditions including adaptations to dryness and other special conditions, and their locations in Texas. It also includes a complete description of each of the 127 ferns in Texas including location and photographs / illustrations of fronds and sori pattern. This book is very information and a nice addition for ferning in Texas.

Submitted by: Frank Lee



**Texas Gulf Coast Fern Society
Board of Directors Meeting
July 20, 2014**

Meeting held at the Judson Robinson, Jr. Community Center, Houston, Texas, with President Darla Harris presiding and calling the meeting to order at 3:45 PM.

Members Present:

Darla Harris – President
Cherie Lee - Vice President
Anna Belle Hicks - Secretary
Mary McConnell - Treasurer
Larry Rucker – Board
Patrick Hudnall - Board

Darla said purpose of meeting was to consider making some changes to our by-laws, one being timing of membership dues. A motion was made by Larry Rucker that for a member to remain on the membership roll and be included in the annual membership directory, dues must be paid by March instead of June. Motion was seconded by Mary McConnell and carried.

At present, the society is not responsible for any expenditure exceeding \$25 without approval by the Board. Darla said that at today's high prices, this amount is too limited. A motion was made by Patrick Hudnall to increase the \$25 limit to \$60 for Board Members and Chairpersons. Motion was seconded by Mary McConnell and carried.

The meeting adjourned at 4:00 PM.

Submitted by: Secretary Anna Belle Hicks



Library

We encourage you to take advantage of the great resource of information available in our library. At each meeting there are take-home sheets that contain a brief review of available books. Also at each meeting, there is a wide variety of books and videos available for immediate checkout. Don't forget to visit our web site (see link in header, page 1) and click on **Library** to see the current list of books available. There you will see some pictures of the books we have and links to reviews at Amazon and elsewhere. If there is a particular book you would like to check out at the meeting, please contact Frank Lee at f.a.lee@sbcglobal.net or 832-566-5788 prior to the meeting to make sure it will be available.



Editor's Comments:

**Deadline for the September Newsletter is August 31, 2014.
Thanks.**

Cherie Lee, Editor, *TGCFS Newsletter*



Fern Leaf Shapes Keys for 'Fern Identification' Article by Donna McGraw

Figure 1 - Fern Leaf Shapes:

(A) *Doryopteris nobilis*, pedate laminae. (B) *Deparia acrostichoides*, lamina 1-pinnate-pinnatifid. (C) *Pteris semipinnata*, dimidiate pinnae. (D) *Pilularia globulifera*, filiform, terete leaves attached to rhizome; globular structures are sporocarps. (E) *Microgramma megalophylla*, simple and entire lamina. (F) *Dipteris conjugata*, lamina divided into two halves from top of petiole. (G) *Hemionitis palmata*, palmate lamina. (H) *Lygodium flexuosum*, rachis (at right) with lamina of pinnule (other half of pinna not shown). (I) *Megalastrum subincisum* (right side of the leaf partially cutoff). (J) *Ophioglossum vulgatum*, ovate blade represents a phyllode (expanded rachis). (K) *Marsilea drummondii*, lamina consists of two pairs of opposite pinnae, these resembling a four-leaved clover. (L) *Matonia pectinata*, lamina. (M) *Matteuccia struthiopteris*, sterile-fertile leaf dimorphism (fertile leaf at right). (N) *Thelypteris reptans*, flagellate apex proliferous at tip. (O) *Bolbitis heteroclita*, 1-pinnate lamina with elongate apical segment proliferous at tip. (P) *Diplazium tomitaroanum*, pinnatifid leaf. (Q) *Gleichenia microphylla*, pair of opposite pinnae.

Figure 2 – Fern Leaf Shapes:

(A) *Pteris aspercaulis*, enlarged basal pinnules on basiscopic side of basal pinnae. (B) *Adiantum lunatum*, 1-pinnate. (C) *Adiantum pedatum*, pedate. (D) *Adiantopsis radiata*, digitate pinnae. (E) *Pyrrosia polydactyla*, palmately lobed. (F) *Actiniopteris semiflabellata*, incised leaf. (G) *Trachypteris pinnata*, holodimorphic, with rosette of sterile leaves and erect fertile ones. (H) *Salvinia molesta*, root-like (lower) leaf is submerged and bears sori, the two round ones are floating. (I) *Pteris ensiformis*, holodimorphic, fertile leaf at left. (J) *Lemmaphyllum microphyllum*, holodimorphic, longer leaf is fertile. (K) *Davallia heterophylla*, holodimorphic, fertile leaf at left. (L) *Olfersia cervina*, holodimorphic, fertile leaf at right. (M) *Belvisia mucronata*, hemidimorphic, with caudate fertile apex. (N) *Anemia adiantifolia*, hemidimorphic, with two basal pinnae fertile and long-stalked. (O) *Osmunda regalis*, hemidimorphic, with fertile pinnae at apex. (P) *Pellaea cordifolia*, decomposed. (Q) *Gymnocarpium robertianum*, ternate. (R) *Adiantum raddianum*, decomposed. (S) *Astrolepis sinuata*, 1-pinnate-pinnatifid. (T) *Polystichum tripterum*, enlarged basal pinnae. (U) *Hemionitis ariifolia*, hastate at left, deltate at right (from same plant). (V) *Vittaria lineata*, linear leaves (shoe-string fern). (W) *Cystopteris bulbifera*, long-attenuate apex. (X) *Drynaria quercifolia*, debris-collecting leaf at right. (Y) *Aglaomorpha meyeniana*, hemidimorphic, with narrow distal pinnae fertile and base expanded for collecting fallen organic debris. (Z) *Cyrtomium macrophyllum*, 1-pinnate. (ZZ) *Elaphoglossum crinitum*, simple, entire.



Upcoming Events in the Houston Area:

If you have the time and would like to expand your horticultural activities, take note of the following announcements.

The Houston Orchid Society, Inc.

[_www.houstonorchidsociety.org](http://www.houstonorchidsociety.org)

Regular meetings are held the first Thursday of every month at 7:30 PM at the First Christian Church, 1601 Sunset Blvd., Houston, TX 77005

Next regular meeting is: September 4, 2014

Bromeliad Society/Houston Inc.

[_www.bromeliadsocietyhouston.org](http://www.bromeliadsocietyhouston.org)

Regular meetings are held the third Tuesday of every month at 7:30 PM at the West Gray Multi-Service Center, 1475 W. Gray St., Houston, TX 77019

Next regular meeting is August 19, 2014

“Making Fern Covered Moss Balls”

presented by Darla Harris and Cherie Lee



The Goal



Working Hard



Success!

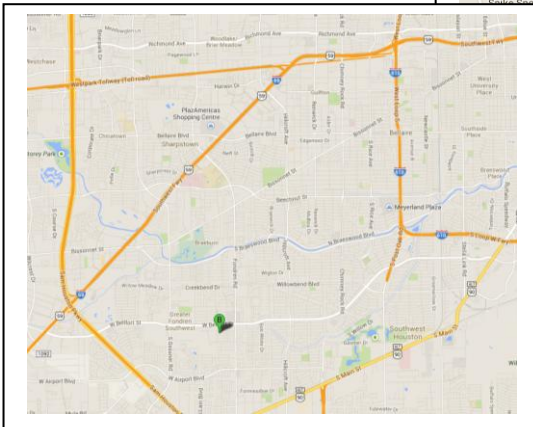
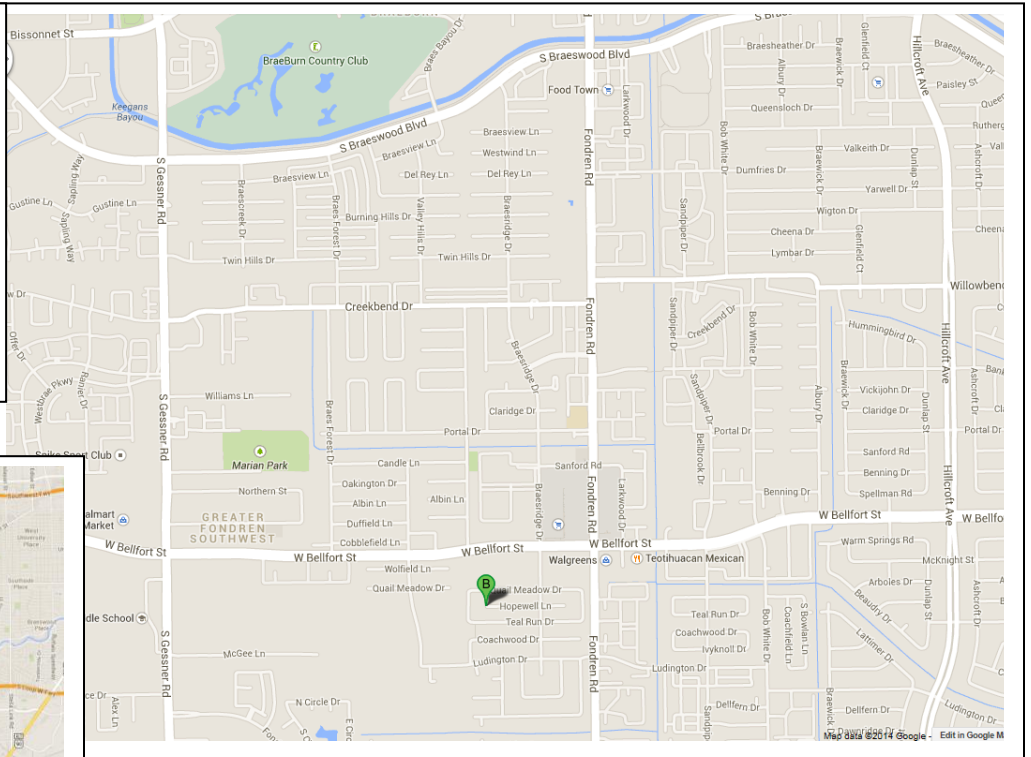
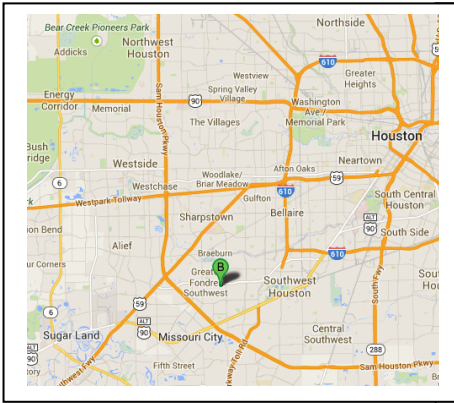


Another exceptional raffle!

The Summer Party at Lucy Melara's Home

7722 Hopewell Lane, Houston, TX 77071

713-728-1626 (home) 713-899-0882 (cell)



Southwest Houston

Off of W. Bellfort St.:

Turn south on Braesridge Dr. (just west of Fondren Rd.)
Turn right (west) on Hopewell Lane.
House at end of street.

Off of Frondren Rd.:

Turn west on Ludington Dr. (just south of W. Bellfort St.)
Turn right (north) on Braesridge Dr.
Turn left (west) on Hopewell Lane.
House at end of street.

