MESSAGE FROM THE CHAIRMAN

The Academician’s DNA

Our department is comprised of academic faculty members including neurologists, psychiatrists, and psychologists. Although they have different specialties, subspecialties and personal backgrounds, they all share what I call “the academic DNA”.

The academic DNA codes for various professional and personal attributes drive an individual with advanced medical training to pursue a full-time academic career, instead of choosing various other career paths available in the community.

I have been an academician for over three decades, observing, mentoring, supervising and interacting with dozens of faculty in my own department. I also have close relationships with numerous academician friends at various medical schools around the country. I have also examined my own pattern of professional preferences and behavior. All that prompted me to come to the conclusion that academic faculty share a cluster of features that are probably associated with genes within the academic DNA. I envision us academicians as a unique breed of professionals who possess several innate ingredients that represent the core of academic lifestyle. The following is a description of the personal and professional characteristics shared by the majority of us academic faculty:

**Personal Attributes**

We tend to have some useful OCD traits like organization, perfectionism and punctuality. We are highly motivated self-starters, who are goal-oriented and relentlessly pursue validation of our ideas. We are generally patient, resilient and adaptive to stress. We are conscientious, prosocial, and more altruistic than self-centered (although we may eventually develop a healthy dose of narcissism, especially when we become very successful). We uphold ethical principles socially, scientifically and medically, and we treasure our integrity.

**Sharing Knowledge**

One of the most prominent characteristics of academician is a strong urge to share the knowledge we have acquired or developed. We love to teach others, especially young learners like students or residents. We enjoy mentoring, guiding, and coaching our trainees. We are nurturing and generative towards our younger colleagues and uphold the values of advocacy and support. We like to communicate our ideas and invest time and energy in honing our speaking skills. We are proud to be educators and we take that important mission very seriously, and implement it within the walls of our academic institution but also for the public in society at large.
Creating Knowledge
We, academic faculty in a medical school, are acutely cognizant of how much remains to be discovered about the human condition especially regarding diseases that cause much suffering and premature death. We are always aware that a large proportion of brain disorders, the focus of our Department of Neurology and Psychiatry, have either no treatment or inadequate treatments that do not prevent disability (e.g. ALS, schizophrenia) or untimely death (e.g. stroke, suicide). We are therefore obsessed with investigating the causes and cures of neurological and psychiatric diseases. We tend to be creative and curious, an excellent combination for successful researchers. We are detail-oriented, problem-solvers and equipped with analytic thinking. Even though we are independent thinkers, we value interdisciplinary collaboration to explore and discover together. We also are blessed with the facility of writing about our findings and their implications. We strongly believe that the research of today is the treatment of tomorrow, and that the creation of new knowledge is the essence of the academic mission and medical progress.

Healing
All of us academic faculty in a medical setting are primarily dedicated to healing the sick and preventing disease, disability and death. We are empathic and skilled at giving hope and reassurance to patients devastated by their illnesses. We are committed to providing the most advanced, evidence-based therapies to the complex and difficult cases referred to us by community colleagues who expect us to have new experimental approaches not yet available outside the confines of an academic institution. We derive immense personal satisfaction from watching our patients improve, and it makes the long hours we work in our hospital or clinics very much worth it.

Professionalism
Finally, academic DNA bestows on us several attributes that emphasize our professionalism. We possess optimal self-regard and are respectful of others even if they disagree with us. We exude confidence yet we are cognizant of our limitations. We have mature coping skills and grace under pressure, making us good role models for our students and trainees. We project a professional image at all times in grooming, dress, speech and behavior. We take responsibility for our mistakes and are fair towards others. We adhere to the principles of good academic citizenship, and support not only our peers but also our institution and its leaders. We truly believe in the tripartite academic mission and we disseminate its values to the public at large.

We should be proud of our academic DNA. It shapes who we are and underpins what we do every day in patient care, teaching and research. It is the invisible GPS roadmap for our academic life and academic success.

Henry A. Nasrallah, MD
Professor and Chairman
The Sydney W. Souers Endowed Chair
# DNP GRAND ROUNDS

## MAY

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>May 7, 2015</td>
<td>Fred D. Lublin (Joint Grand Rounds)</td>
<td>“Treatment of Multiple Sclerosis: Early and Aggressive Intervention to Improve Outcomes”</td>
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<tr>
<td>May 14, 2015</td>
<td>Alex Abou-Chebl, MD (Joint Grand Rounds)</td>
<td>“Carotid Stenosis: Current Practices and Future Opportunities”</td>
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<td>May 21, 2015</td>
<td>Aws Alawi, MD (Neurology)</td>
<td>“Non-Motor Symptoms of Parkinson’s Disease”</td>
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<tr>
<td>May 21, 2015</td>
<td>Marissa Jennings, MD (Psychiatry)</td>
<td>“Promoting Resilience in Difficult Patients”</td>
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<td>May 28, 2015</td>
<td>David B Clifford, MD (Joint Grand Rounds)</td>
<td>“HIV Neuro Complications”</td>
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## JUNE

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<tr>
<th>Date</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>June 4, 2015</td>
<td>Mazen Dimachkie, MD (Neurology)</td>
<td>“Inclusion Body Myositis: Past, Present &amp; Future”</td>
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<tr>
<td>June 4, 2015</td>
<td>Sarthak Misra, MD (Psychiatry)</td>
<td>“Mental Illness in the Incarcerated”</td>
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<tr>
<td>June 11, 2015</td>
<td>Vincent Gibbons, MD (Neurology)</td>
<td>“Population Health Strategies for the Academic Neurosciences”</td>
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<td>June 11, 2015</td>
<td>Michael Jibson, MD (Psychiatry)</td>
<td>“Of Boundaries and Borderlines: Making and Disclosing the Diagnosis”</td>
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<tr>
<td>June 18, 2015</td>
<td>John C. Morris, MD (Joint Grand Rounds)</td>
<td>“Changing the Paradigm in Alzheimer’s Disease: From Treatment to Prevention”</td>
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<td>June 25, 2015</td>
<td>Joshua Hentzelman, MD (Joint Rounds)</td>
<td>“Migraines and Vestibular Migraines – An ENT Perspective”</td>
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## JULY

**GRAND ROUNDS ON SUMMER BREAK**

## AUGUST

**GRAND ROUNDS ON SUMMER BREAK**
As the author of the Departmental Spotlight column in our newsletter, I thought it only fair that I put myself through the interrogation to which I subject other members of the department. So here goes…a glimpse into my role in the department and university. Hopefully not TMI!

**What is your role in the DNP?**
I am a Board Certified Clinical Neuropsychologist and director of the Neuropsychology Program. I am very much involved in education at several levels within the department and university. I am the co-director of the Psychiatry and Neurology Clerkship. I teach resident and medical student courses and have taught as a part of the doctoral program in clinical psychology. We are very happy to have a growing neuropsychology training program. With my partners in crime, Dr. Phil Ruppert and Jennifer Niehoff, we have five graduate level students (including some from SIUE) in an externship program with us. In addition to clinical services and teaching, I am also involved in research endeavors not only with colleagues here within the department, but also others across the medical school and university.

**Are you active in other roles for the university outside the DNP?**
I very much enjoy working with colleagues from other parts of Saint Louis University. I served 1.5 terms as a Faculty Senator until I was recently elected to the Executive Committee of the senate. In this role, I hope to learn more about the operations of the university, but more importantly serve as a voice for our faculty. I am also active in the IRB. I have been a member for some time now, but recently was appointed as a Deputy Chair. Serving on the IRB has really helped me to better understand the importance of such a regulatory entity in the protection of human and animal subjects.

**How do you like to spend your time outside of work?**
I am an outdoors person. I very much enjoy running, hiking, biking, and rock climbing. Currently, I am training for another triathlon so that takes up a lot of my free time. My family and friends are very important to me, so I spend a lot of time with them. I also enjoy movies and reading.

**If you had another career, what would it be?**
Park ranger because my job would basically be doing what I love...tree hugging!

**What is a misconception you think people have about you?**
That I am sub-clinically manic – this misconception is likely true :)

**What is your favorite book or movie?**
I really enjoy the works of Oscar Wilde – The Picture of Dorian Gray. The romantic in me is a huge Jane Austen fan – Emma is a great one.

**If you could meet anyone in the world, who would it be and why?**
I would like to meet Harry Houdini – what a creative and brave performer. I really want to know how he made all the amazing escapes that he did. Interestingly, he also devoted his efforts to “debunking” numerous psychics who were taking advantage of the public.

**If your life were a motion picture what would the title be?**
The Hippie Wears Prada...

Well, that’s all folks! I look forward to our next installment…I might be knocking on your door for an interview next!
Please Welcome DNP’s Newest Staff Members!

Rachel Stout, RN
Clinical Nurse, Neurology DOB Clinic

I started my nursing career on the neurology unit and stroke center at Christian Hospital Northeast. After working at Christian Hospital, I spent 4 years working for a non-profit organization that serves adults with developmental disabilities. Most recently, I have worked as a nurse providing telephone triage services. Prior to becoming a nurse, I worked for 7 years as a case manager for adults and children with developmental disabilities.

Elizabeth Sout, ANP
Neurology DOB Clinic

I had been a RN for 23 years of my career before obtaining my NP in 2003 from Maryville University. Most of my experience has been in surgery as a registered nurse first assistant. The last four years was spent in pain management. I am very excited to be working at SLU Care and in particular with Dr. Chand caring for movement disorder patients.
“I’M JUST SAYING”

Just a reminder, here is your chance to share your thoughts on issues that you see within the department, but you also have to include your thoughts on what possible solutions are. The comments box is located by the mail boxes in room 113. Please feel free to include your name on the comments, but it is not required.

DNP CALENDAR OF EVENTS

September, 2015

Bike MS: Express Scripts Gateway Getaway Ride 2015
Lewis and Clark Community College - Godfrey, IL
September 12-13th

2015 Walk to End Alzheimer’s
Scottrade Center - St. Louis, MO
September 12th
Alan Felthous
Felthous, A.R.: The Appropriateness of Treating Psychopathic Disorders. CNS Spectrums 20(3); 182-189, April, 2015. Doi: 10.1017/S1092852915000243


Thomas Geller


George Grossberg

Deardorff,WJ, Feen E, Grossberg GT - The Use of Cholinesterase Inhibitors Across All Stages of Alzheimer's Disease - Drugs Aging 2015 June 2 Responder Analysis of a randomized comparison of the 13.3 mg/24 h and 9.5 mg/24 hour Rivastigmine patch: Molinuevo, Frolich, Grossberg, et al, March 8, 2015.

Raman Malhotra


Ted Malmstrom

ARTICLES cont.

Florian Thomas

Henry Nasrallah
Nasrallah HA: Elevated cholesterol and triglycerides are associated with better cognitive functioning in schizophrenia: Data from the CATIE study. Abstracts of the 168th Annual Meeting of the American Psychiatric Associations, Toronto, Canada, May 16-20, 2015.


RESEARCH

Ghazala Hayat
LRP4/Agrin Study funded by NIH, collaborating with Medical College of Georgia. 7/2015

Two IRBs approved:
1- A promising marker to detect chronic pain syndrome.
2- The factors responsible or predicting increase morbidity and mortality in ALS patients in SLU clinic.
ADVISORY BOARDS

Ghazala Hayat
Selected as "International Advisory Board of Annals of Punjab Medical College (APMC)".

EDITOR

Ghazala Hayat
Lead Guest Editor, for the Special Issue theme “Diabetic sensory neuropathy”. International Journal of Diabetology & Vascular Disease Research (IJDVR).

Florian Thomas
Dr. Thomas has been appointed editor-in-chief of the Journal of Spinal Cord Medicine.

EDITORIALS

Henry Nasrallah


BOOK CHAPTER

George Grossberg
"Biomarkers in Subjective Cognitive Impairment" - Amyloid and Tau Biomarkers in Subjective Cognitive Impairment

Ghazala Hayat
Book Chapter: Small Fiber Neuropathy Associated with Vaccination.

PRESENTATIONS

LOCAL

Pratap Chand

George Grossberg
Neuro-Inflammation Symposium - Presentation on 5/2/2015.

Senior Day Ceremony - Chaifetz Arena - Invited to seat on Podium.

Presented at the Summit of Neurology and Psychiatry - Washington, DC Neuroanatomic and Neurochemical Substrates of Behavioral Symptoms in Dementia - Implications for Treatment on June 25, 2015.

Summer Geriatric Institute - Nonpharmacologic Approaches in Moderate to Severe AD, June 9, 2015.

Cognitive rehabilitation techniques in mild cognitive impairment and dementia, June 9, 2015.

Ghazala Hayat
Gave talk to the Department of Theology, St. Louis University. Diversity, Islam In USA.
PRESENTATIONS

LOCAL CONT.
Ghazala Hayat cont.
“A promising biomarker for painful small fiber neuropathy” presented at AAN meeting Washington DC, April, 2015.

“An unusual suspect” presented at AAN meeting Washington DC, April 2015.

Raman Malhotra
"Update on Insomnia" at Family Medicine Grand Rounds at SSM St. Mary's Hospital, June 24, 2015.

Ted Malmstrom


Florian Thomas
Florian Thomas and Cosima Thomas served as neurologist-in-residence and photographer-in-residence, respectively, at the Multiple Sclerosis Wellness Village in conjunction with Metro Walk MS on 4/19/2015.

Henry Nasrallah


Nasrallah HA: Schizophrenia: Clinical and Genetic aspects: Presented to the STARS program, University of Missouri, St. Louis, June 24, 2015.

STATE
Ghazala Hayat
Gave Grand Rounds Presentation on 4/15/2015 at SIU on "ALS An Orphan Disorder with Hope".

NATIONAL
Pratap Chand
Diagnosis and Treatment of Movement Disorders in Primary Care. CME - Neurology for Non Neurologists. Texas Tech University School of Medicine El Paso TX, 29 May 2015.


Gait dysfunction in Parkinsonian disorders. CME, Grand Rounds, Indiana University, Indianapolis 18 February 2015.
PRESENTATIONS

NATIONAL
Pratap Chand Cont.
Movement Disorders in the older adult. AMDA 2015 Annual Conference. Louisville KY, 21 March 2015.

Movement Disorders for the primary care physician. 2nd Annual Neurology for the Non Neurologist Conference. Texas Tech University School of Medicine El Paso, USA 29 May 2015.

Alan Felthous


Raman Malhotra


Henry Nasrallah

INTERNATIONAL
George Grossberg
Presentation at APA - Toronto Canada, May 18, 2015.

Henry Nasrallah


FACULTY ACHIEVEMENTS

MEDIA

Florian Thomas

St. Louis Post Dispatch - VA hospital makes his multiple sclerosis a little easier to handle/Honorable Mention Dr. Thomas and Patient on 6/11/2015.

St. Louis Post Dispatch High-tech equipment, good attitude help after spinal cord injury/Honorable Mention Dr. Thomas and Patient on 7/2/2015.

Henry Nasrallah
Medscape published a article about my data showing that high cholesterol and triglycerides is associated with better cognition in schizophrenia. I presented these data at the APA meeting in Toronto.


HONORS/AWARDS

Georges Grossberg


Henry Nasrallah
Invited to deliver the Ellen and Irving Rothchild Endowed Lecture at Case Western University in September 2015.

OTHER ACHIEVEMENTS

Thomas Geller
Dr. Thomas Geller accepted a position as the Pediatric Neurology lecturer for the Osler Institute Board review Course in Chicago, IL . July 1, 2015.

Henry Nasrallah
Nasrallah HA: Organizer and Chair of the National CME Symposium: Summit of Neurology and Psychiatry, June 26-27th, 2015, Washington, DC.

Florian Thomas
Dr. Thomas has been appointed chair of the University of Missouri Spinal Injury/Disease Research Board on 5/11/2015.
What If?: Serious Scientific Answers to Absurd Hypothetical Questions by Randall Munroe

Millions of people visit xkcd.com each week to read Randall Munroe’s iconic webcomic. His stick-figure drawings about science, technology, language, and love have a large and passionate following.

Fans of xkcd ask Munroe a lot of strange questions. What if you tried to hit a baseball pitched at 90 percent the speed of light? How fast can you hit a speed bump while driving and live? If there was a robot apocalypse, how long would humanity last?

In pursuit of answers, Munroe runs computer simulations, pores over stacks of declassified military research memos, solves differential equations, and consults with nuclear reactor operators. His responses are masterpieces of clarity and hilarity, complemented by signature xkcd comics. They often predict the complete annihilation of humankind, or at least a really big explosion.

The book features new and never-before-answered questions, along with updated and expanded versions of the most popular answers from the xkcd website. What If? will be required reading for xkcd fans and anyone who loves to ponder the hypothetical.

All the Light We Cannot See by Anthony Doerr

Marie-Laure lives with her father in Paris near the Museum of Natural History, where he works as the master of its thousands of locks. When she is six, Marie-Laure goes blind and her father builds a perfect miniature of their neighborhood so she can memorize it by touch and navigate her way home. When Marie-Laure is twelve, the Nazis occupy Paris, and father and daughter flee to the walled citadel of Saint-Malo, where Marie-Laure’s reclusive great-uncle lives in a tall house by the sea. With them they carry what might be the museum’s most valuable and dangerous jewel.

In a mining town in Germany, the orphan Werner grows up with his younger sister, enchanted by a crude radio they find. Werner becomes an expert at building and fixing these crucial new instruments, a talent that wins him a place at a brutal academy for Hitler Youth, then a special assignment to track the resistance. More and more aware of the human cost of his intelligence, Werner travels through the heart of the war and, finally, into Saint-Malo, where his story and Marie-Laure’s converge.

Big Little Lies by Liane Moriarty

Madeline is a force to be reckoned with. She’s funny and biting, passionate, she remembers everything and forgives no one. Her ex-husband and his yogi new wife have moved into her beloved beachside community, and their daughter is in the same kindergarten class as Madeline’s youngest (how is this possible?). And to top it all off, Madeline’s teenage daughter seems to be choosing Madeline’s ex-husband over her. (How. Is. This. Possible?).

Celeste is the kind of beautiful woman who makes the world stop and stare. While she may seem a bit flustered at times, who wouldn’t be, with those rambunctious twin boys? Now that the boys are starting school, Celeste and her husband look set to become the king and queen of the school parent body. But royalty often comes at a price, and Celeste is grappling with how much more she is willing to pay.

New to town, single mom Jane is so young that another mother mistakes her for the nanny. Jane is sad beyond her years and harbors secret doubts about her son. But why? While Madeline and Celeste soon take Jane under their wing, none of them realizes how the arrival of Jane and her inscrutable little boy will affect them all.

Big Little Lies is a brilliant take on ex-husbands and second wives, mothers and daughters, schoolyard scandal, and the dangerous little lies we tell ourselves just to survive.
A Note from Dr. Anjan Bhattacharyya:

I wanted to recognize and thank all those individuals who made our recently concluded Combined Resident Retreat a possibility. This includes:

1. The chief residents, both current and incoming, who helped brainstorm the ideas and bring them to fruition
2. The Program Directors and Associate Program Directors in both divisions
3. The faculty who helped cover the inpatient services on their own- Dr. Marcu, Dr. Greenberg and Dr. Redden for Psychiatry, and Dr. Chand, Dr. Kumar and the Peds Neuro fellow
4. The staff who helped us figure out the logistics- Stacie, Connie and Pamela.
5. Dr. Victoria Cornelius who gave freely of her time to provide us an experience in group yoga to get our bodies and minds fully in tune.

Thanks to all of these and the residents who attended on a Saturday, we had what I thought was a great kick off to what will hopefully become an annual tradition.

We will be circulating a survey for evaluation of the retreat and for suggestions for next year. We will also be disseminating the results of the breakout groups in which residents and faculty deliberated on ways to improve the experience of our residencies.

Finally, I would like to give a special recognition to Dr. Aws Alawi, who helped organize the event and graciously volunteered to provide coverage to allow the scheduled on-call resident to attend. The very model of a modern Chief Resident!
DNP Events

RESIDENT POSTER AWARDS
April 1, 2015

Saint Louis University
School of Medicine Commencement
May 15, 2015

Psychiatry Resident PGY-4 Seminar
given by Henry Nasrallah, MD
June 2, 2015
DNP Events - Resident Graduation

**Resident Graduation:** Our department celebrated the graduation of our residents and fellows on June 14, 2015. It was held in the Allied Health Building on the south campus of Saint Louis University. We congratulate all the graduates and wish them the best in their future endeavors.

**NEUROLOGY RESIDENCY GRADUATES**

- Aws Alawi, MD
- Zafar Kaleem, MD
- Sowmya Katragadda, MD
- Amanda Michael, MD
- Katelyn Smith, DO

**CHILD NEUROLOGY RESIDENCY GRADUATE**

- Vikram Prakash, MD

**CLINICAL NEUROPHYSIOLOGY FELLOWSHIP GRADUATE**

- Christopher Laohathai, MD

**SLEEP FELLOWSHIP GRADUATE**

- Aman Gill, MD

**PSYCHIATRY RESIDENCY GRADUATES**

- Ernest Graypel, MD
- Marisa Jennings, MD
- Jose Jove, MD
PSYCHIATRY RESIDENCY GRADUATES...continued

Rajesh Mehta, MD
Sarthak Misra, MD
Samuel Temesgen, MD

GERIATRIC FELLOWSHIP GRADUATES

Adeel Ansari, MD
Alexander Graypel, MD

NEUROLOGY FACULTY TEACHING AWARDS

Roula al-Dahhak, MD
Pratap Chand, MD

PSYCHIATRY FACULTY TEACHING AWARDS

Catalina Belean, MD
Suma Chand, PhD
Fouad Reda, MD
J. Douglas Pettinelli, PhD
DNP Events...Resident Graduation cont.

NEUROLOGY RESIDENCY TEACHING AWARDS

Christopher Laohathai, MD
Katelyn Smith, DO
Katelyn Smith, DO
(Second Award)

PSYCHIATRY RESIDENCY TEACHING AWARDS

Hripsime Kalendarian, MD
Syed Zaidi, MD

THE HENRY & AMEILIA NASRALLAH AWARDS
FOR EXCELLENT FACULTY, RESIDENTS AND MEDICAL STUDENT

Sean Goretzke, MD
Jose Jovel, MD and Aws Alawi, MD
Lauren Schwarz, MD
Alex Chen, BS
with Dr. & Mrs. Nasrallah
GRADUATION CONGRATULATIONS:
Dr. Vince Gibbons oldest son graduated from Santa Clara University, magna cum laude in History. He will spend the summer in Mumbai on a Jesuit-sponsored service mission. Their second son graduated with honors from Clayton High school and will attend University of South Dakota. Their third son graduated from Wydown Middle School and will pass into high school to pursue Chinese immersion studies as well as cinematography.

Congratulations:
Congratulations to John Chibnall, PhD for celebrating 20 years of service at Saint Louis University. Thank you for your dedication and enthusiasm to our department and this University. He is like a fine wine….only better with age!! Congrats :)

HAPPY 40TH BIRTHDAY TO ALLISON HAMTIL!!!
WORD SEARCH

Word Search 16 - Science Words/Living Things

AMPHIBIAN
CABBIUM
COTYLEDON
EPIDERMIS
PHLOEM
HYBRID
PARASITISM
PROTIST
SPORE
TROPISM
XYLEM

ANGIOSPERM
CAMOUFLAGE
DICOT
FUNGUS
NONVASCULAR
PHOTOSYNTHESIS
RHIZOID
TISSUE
VASCULAR

BACTERIA
CHLOROPHYLL
ECOSYSTEM
HERBIVORE
ORGANISM
POLLINATION
RHIZOME
TRANSPIRATION
VERTEBRATE

Word Search 16 - www.ThinkablePuzzles.com
JUST FOR FUN - ANSWERS

M + E + R D + B + N + M P N M + S + S R
+ E + C I A A + A + + U O + S + U + I H
+ + O R O C L I + A + I L + I + G + S I
+ + B L T S B U N + T B L + T H N + E Z
N Y E E H I Y G C A + M I + I E U + H O
H O R T H P I S R S + A N + S R F + T M
R I N P A O S I T T A C A + A B + + N E
A H M V S R P I S E + V T D R I + + Y +
M A I P A S B I M M + I I A V + + S +
+ E E Z N S T E T R S + O C P O + + O +
+ R L A O O C + T I E I N O + R + S T +
M + R Y R I + U + R S D P T + E P + O +
+ T + P X + D + L + E S I O + O + + H +
+ E G A L F U O M A C V U P R + + + P +
C O T Y L E D O N + R + + E E T + + + +
C H L O R O P H Y L L M S I N A G R O +

Over,Down,Direction)
AMPHIBIAN(2,9,NE)
ANGIOSPERM(10,3,SW)
BACTERIA(8,1,SW)
CAMBIUM(12,7,N)
CAMOUFLAG(11,14,W)
CHLOROPHYLL(1,16,E)
COTYLEDON(1,15,E)
DICOT(14,8,S)
ECOSYSTEM(3,1,SE)
EPIDERMISPHLOEM(15,15,NW)
FUNGUS(17,6,N)
HERBIVORE(16,4,S)
HYBRID(1,6,NE)
NONVASCULAR(1,5,SE)
ORGANISM(19,16,W)
PARASITISM(15,10,N)
PHOTOSYNTHESIS(19,14,N)
POLLINATION(13,1,S)
PROTIST(4,13,NE)
RHIZOID(1,7,SE)
RHIZOME(20,1,S)
SPORE(18,11,SW)
TISSUE(9,10,SE)
TRANSPIRATION(2,13,NE)
TROPISM(16,15,NW)
VASCULAR(12,8,NW)
VERTEBRATE(12,14,NW)
XYLEM(5,13,NW)
JUST FOR FUN

You should get a standing desk. It's much healthier.

The truth is there is no "Youth Formula" worth millions. This is Mountain Dew.