CURRICULUM VITAE

DATE PREPARED: 2024 June 18

Name: D. Max Snodderly, Jr.

Office Address: Department of Neuroscience –NHB 2.206c
The University of Texas at Austin
100 E. 24th St.-Mail Code C7000
Austin, Texas 78712

Home Address: 915 Wild Basin Ledge, Austin Texas, 78746
Tel (512) 922-8777

Email: max.snodderly@austin.utexas.edu; dmsnodderly@gmail.com

ORCID: https://orcid.org/0000-0002-3428-609X

Fax: (512)-232-3761 **Cell**: (512) 922-8777

Web: http://www.sbs.utexas.edu/SnodderlyLab/

Place of Birth: Greensboro, North Carolina, USA

Education:

1963 S.B.	Massachusetts Institute of Technology, National Merit Scholar
1963 S.M.	Massachusetts Institute of Technology (Electrical Engineering)
1969 Ph.D.	Rockefeller University (Neuroscience and Behavior) (with H. K. Hartline (Nobel laureate) and F. Ratliff)

Postdoctoral Training:

1969-1971	NIMH Individual Postdoctoral Fellowship 6-F02-MH-44,511 Department of Psychology, University of California, Berkeley (with R. L. DeValois)

Professional Appointments:

1971-1976	Assistant Scientist, Eye Research Institute of Retina Foundation
1974-1976	Assistant Professor of Biology, Northeastern University
1976-1980	Associate Scientist, Eye Research Institute of Retina Foundation
1977-1979	Instructor in Ophthalmology (Neurophysiology), Harvard Medical School
1979-2000	Assistant Professor of Ophthalmology (Neuroscience), Harvard Medical School
1980-2003	Senior Scientist, Schepens Eye Research Institute
2000-2003	Associate Professor of Ophthalmology, Harvard Medical School
2003-2006	Adjunct Senior Scientist, Schepens Eye Research Institute
2003-2006	Professor of Ophthalmology, Medical College of Georgia (MCG)
2004-2006	Joint Member, Institute of Molecular Medicine and Genetics, MCG
2004-2006	Professor, School of Graduate Studies, MCG
2006-2023	Professor, Nutritional Sciences and Institute for Neuroscience and Center for Perceptual Systems University of Texas, Austin (UT Austin).
2011-2023	Professor, Neurobiology (now Neuroscience) and Institute for Neuroscience and Center for Perceptual Systems, UT Austin
2019-present	Affiliate, Rapoport Center for Human Rights and Justice, UT Austin
2021-present	Associate Professor and Researcher, Universidad San Francisco de Quito USFQ
2023-present	Professor Emeritus of Neuroscience, UT Austin

Administrative Roles:

Schepens Eye Research Institute:

1985-1988	Head, Neuroscience Unit, Schepens Eye Research Institute. Seven faculty and their staff.
1990-1995	Supervisor, microcomputer applications, NIH Core Grant
1998	Coordinator, Vision and Visual Optics Focus Group

University of Texas, Austin:

2007-2008	Associate Division Head, Division of Nutritional Sciences
2016-2018	Faculty Council Representative from the College of Natural Sciences (Equivalent of Faculty Senate in other universities)
2018-	UT Austin representative to international Scholars at Risk network

Awards and Honors:

1958-1962	National Merit Scholarship
1962	Eta Kappa Nu (electrical engineering honorary)
1962	Tau Beta Pi (general engineering honorary)
1969	Travel Award, Fight for Sight
1975	Teacher Fellowship, Grant Foundation, participation in Earthwatch expedition
1986	Fellow, American Psychological Association, Transferred to Association for Psychological Science
2001	Garland W. Clay Award, American Academy of Optometry Paper 37 in my bibliography was chosen by the Editorial Board of the Academy's journal, *Optometry and Vision Science* as the best of the widely cited articles published in the journal in 1997
2010	NSC Speaker's Award, Natural Sciences Council (UT student organization)

Consulting Relationships:

1967-69	Occupational safety and health for the Oil, Chemical, and Atomic Workers' Union.
~1980	Techniques for studying brain function of awake, behaving monkeys for Dupont NEN.
1997	Formulation of nutritional supplements for Storz Pharmaceuticals
1999	Formulation of nutritional supplements for Whitehall-Robins.
2000	Study design for intervention trial for McNeil Specialty Products Company.
2004-2008	Analysis of effects of eye movements on visual perception for Prof. Michele Rucci, Boston University.
2006-2008	Expert panel for application to FDA for GRAS status of new lutein preparations.
2012-2013	Adviser to Covington and Burling LLP on patent infringement lawsuit.

Professional Societies:

American Association of University Professors (life member)
American Society of Primatologists
Association for Psychological Science
Ecological Society of America
International Primatological Society (Life member)
Association for Tropical Biology and Conservation
Vision Sciences Society

Community Service and Outreach:

1967-1969	Board of Directors, New York Scientists' Committee for Public Information Participated in public education on social problems with scientific content - particularly air pollution. Activities included analysis for local congressman of technical reports on projected health effects of proposed expressway. Also advised Oil, Chemical and Atomic Workers union on environmental health issues in the workplace.
1971-1977	Instigated formation of Committee on Social Issues of the Society for Neuroscience and served as committee member.
1975-1979	Ad hoc Committee on Availability of Non-Human Primates, Society for Neuroscience.
1984-1986	Program Committee, American Society of Primatologists.
1986	Successfully advocated for Class of 1962 Scholarship Fund at MIT as 25th reunion gift. The fund has supported 196 scholars as of 2018.
1997	Established and coordinated Macula and Nutrition Group. Leadership was transferred to John Landrum of Florida International University in 1999. The group continues to meet annually at the Association for Research in Vision and Ophthalmology. Dinner meetings in 2008 and 2009 had more than 100 participants.
2002	Established and chaired Conservation Information Service to endorse projects relevant to conservation of primate habitats. Internet web site http://pin.primate.wisc.edu/infoserv/cis/. Site discontinued due to lack of web support.
2003	Loaned macular densitometer to Epidemiology Branch of National Eye Institute and instructed their staff in its use to help plan studies related to new clinical trials.
2005, 2006	Arranged funding of ~ $36,000 for purchase of 7.2 hectares of Brazilian Atlantic Forest adjacent to parkland in Sao Paolo state as a base for conservation-oriented field studies.
2006, 2007	Assisted in preparation of funding proposals for Pro-Muriqui, a Brazilian NGO dedicated to conservation of the largest neotropical primate, *Brachyteles arachnoides*.
2008	Pro-Muriqui proposal was funded for 42,820 Euros by the National Committee of the Netherlands of the International Union for the Conservation of Nature (IUCN NL) to protect 100 hectares of Brazilian Atlantic Forest in the home range of the monkeys.
2012-	Posted published and unpublished images from our work on our website for teaching and research purposes. http://www.sbs.utexas.edu/SnodderlyLab/gallery.html
2013-	Established the Opportunity Scholars Fund at the University of Texas at Austin with an endowment of $100,000. The fund is designed to help students obtain a degree without going into debt. In return for this opportunity, scholars will be expected to contribute to the fund when they are earning money and benefitting from their education. See http://giving.utexas.edu/opportunity-scholars/ for more information.
2013	Interviewed on PBS NewsHour (national television) about the decision of the government of Ecuador to allow drilling for oil in Yasuni National Park. Available on YouTube at https://www.youtube.com/watch?v=m9dbqrdyzfA.
2013	Contributed to an article on Yasuni National Park for Infinite Ecuador magazine
2014	Presentation to Lakeway Men’s Breakfast Club, Lakeway Texas, about the Opportunity Scholars program and financial aid to students at UT Austin.

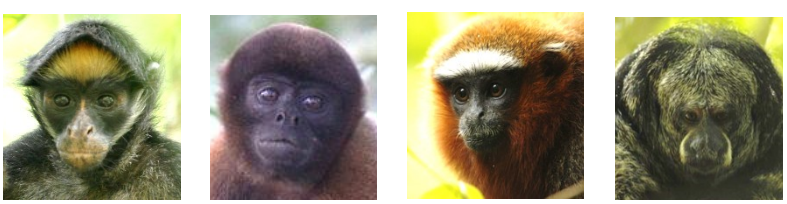
2015- Member, Steering Committee, and Chair, Legal Committee of GunfreeUT, a grass-roots organization working to keep guns out of classrooms and other educational spaces at UT Austin. See gunfreeUT.org for more information.

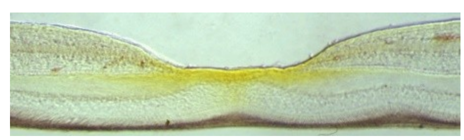
2016- Helped establish a scholarship program at the Tiputini Biodiversity Station in Amazonian Ecuador for Ecuadorian students from the Universidad San Francisco de Quito to participate in research with international mentors.

2017- Initiated a proposal for the University of Texas at Austin to join the Scholars at Risk Network (SAR) (https://www.scholarsatrisk.org/about/) to protect scholars and academic freedom in the global community. Faculty Council endorsed this proposal and President Fenves approved the request. I chair a committee to support the activities of Scholars at Risk and to involve these scholars in the educational process at UT. The goal is to inform our academic community about the situations these scholars encounter and to help the scholars to find a base from which to continue their work. The administrative home for the committee is the Division of Diversity and Community Engagement. The first visiting scholar, Halil Yenigun, from Turkey, visited UT in May 2019 and gave a well-attended lecture and met with faculty and students. The Division of Diversity and Community Engagement, the University Libraries, and the Rapoport Center for Human Rights have committed financial support to continue the Scholars at Risk program.

2019 Invited panel member for program sponsored by UT Austin Undergraduate Research Journal on gun violence and gun control.

Research Contributions: (with references to my publications).





Left to right. *Ateles, Lagothrix, Callicebus, Pithecia*, Retinal macular pigment (*M. mulatta*) From (12).

Current research emphasis: Comparative visual ecology of primates

In addition to their critical importance as models for human biology and behavior, nonhuman primates play essential ecological roles as seed dispersers that maintain the biodiversity of tropical forests. The visual discriminations made during foraging and other critical activities represent evolutionary selection pressures for visual capabilities of primates. Primates rely heavily on vision during many activities determining their survival. Thus, it has been surprising to discover that most male monkeys in the New World have dichromatic color vision that humans would consider "defective". Furthermore, most New World monkey species have polymorphic color vision systems, resulting in multiple vision phenotypes that vary from animal to animal and species to species.

We are studying several groups of New World monkeys at the Tiputini Biodiversity Station in Amazonian Ecuador to understand how their genetic diversity relates to their foraging behavior and overall ecology. This project is a collaboration with Dr. Anthony Di Fiore of the Department of Anthropology at UT

Austin and his students and colleagues. Ten species of monkeys share this megadiverse tropical forest. Their feeding ecology includes ripe fruit specialists that are seed dispersers (*Ateles belzebuth, Lagothrix lagotricha poeppigii*), monkeys with more diverse diets (*Callicebus discolor*) and others that are seed predators (*Pithecia aequatorialis*). The color vision genotypes of individually identified monkeys are being determined by DNA analysis of tissue and fecal samples. A paper describing the vision genotypes of five of the ten species is currently under review.

To characterize visual discriminations that the monkeys are making, environmental light is being measured at locations where the monkeys range and forage. We also measure reflectance properties of food and other objects and their backgrounds. Combining these measurements allows us to determine which monkeys and which genotypes are solving defined visual tasks to obtain food and how their visual behavior integrates into the monkeys' ecological roles.

In the course of this work, we have found that some of the monkeys are very sensitive to environmental variables, such as temperature (77). Given the importance of understanding the impacts of climate change, I have installed data loggers in the forest in Ecuador to measure temperature, relative humidity, and light in representative sites utilized by the monkeys. I also installed the same types of data loggers in Kibale National Park in Uganda, which is one of the most intensively-researched primate field sites in Africa with the aid of Kim Valenta (Duke University) and Colin Chapman (McGill University). It has 13 species of primates, including chimpanzees. We will be able to make intercontinental comparisons.

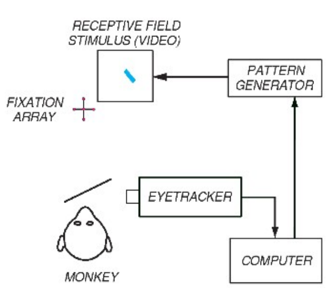
This research represents a return to my early love of naturalistic studies of visual behavior and ecology (9,M2). I was the first to measure optical and geometrical properties of primate food sources in natural habitats as a means of describing discriminations that constitute selection pressures important for the evolution of primate color vision. However, at the time, I was working in a very clinical environment, and it was not practical to develop fully this line of research. Now that I am in a more diverse academic environment, I am enjoying returning to the field. Nevertheless I am proud that my clinically oriented studies have contributed to progress toward reducing the burden of visual disability in our aging population.

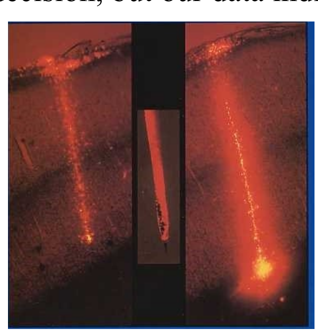
Previous research themes: Monkeys as models for human visual systems

Behavioral and neural studies.

A major long-term project, now concluded, has been the study of neural activity in the visual pathway and its relationship to visual perception. Our results are applicable to humans because we have studied macaque monkeys that have color vision, spatial vision (4), and eye movements--including even the finest tremor (76)--nearly identical to humans. We have recorded neural activity in the lateral geniculate nucleus (LGN 7,57) and the primary visual cortex (V1) of monkeys performing visual and eye movement tasks (16, 24, 30). Some aspects of cortical responses appear to contribute to perception, while others do not (32), so we have studied the visual pathway in behaving monkeys (rather than anesthetized ones) to be sure that perceptual processes are intact.

Doing precise experiments with behaving monkeys required accounting for the effects of eye movements (13, 15, 73, 76) and separating them from the effects of external motions (30). When this was done, cortical neurons were found to give very reliable responses (34, 54), unlike previous reports. Previously, theorists were forced to assume that the variability of cortical neurons would necessitate combining information from many neurons to make a perceptual decision, but our data indicate that V1 neurons are sufficiently reliable that a





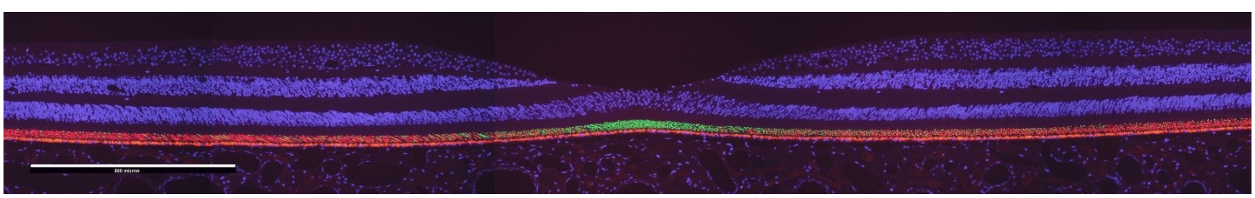
Left: Recording neural activity from a behaving monkey while correcting for eye position. Right: A DiI-coated electrode (center) like those used to mark two electrode penetrations in visual cortex, one to layer 6 (left), and the other to the white matter (right). From (24) and the cover of J Neurophysiol.

modest complement of neurons can do the job. By marking the locations of our recordings, we showed that V1 has alternating layers with low and high spontaneous activity (24). In regions with high spontaneous activity, the sizes of the receptive field activating regions are larger, and the selectivity for spatial features of the stimulus is lower (24, 52). Within the upper cortical layers, smaller neurons have higher spontaneous activity, larger activating regions, and less selectivity for stimulus features (39). These unexpected results suggest that small, spontaneously active neurons may have disproportionately strong influences on brain imaging such as fMRI, overshadowing the contributions of cells with high stimulus selectivity that may be more important for perception.

During inspection of stationary objects, our eyes move in a pattern of slow drifts and rapid saccades that control the direction of gaze and help to maintain the visibility of objects (13, 15, 75). Some V1 neurons selective for high retinal image speeds appear to record only saccadic events while other neurons tuned to slower speeds code spatial features of an object (43, 65). The position of the eye in the orbit also modulates the neuronal response (73). How the spatial features are coded has often been modeled in terms of the responses of quasilinear simple cells, but in alert monkeys, many, if not most, cortical neurons are nonlinear complex cells (47, 67). Our results imply that models of cortical function need to incorporate more nonlinear elements.

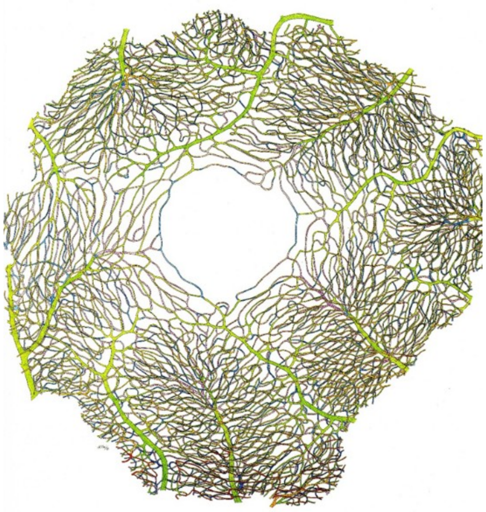
From prior experiments on anesthetized animals, information processing in V1 appeared to be a gradual process, with receptive field size and selectivity for orientation and for direction of movement increasing as information flowed from the input layer 4C to other layers. Our studies of laminar properties with alert monkeys have arrived at a very different picture. A variety of receptive field sizes, as well as refined selectivity for stimulus orientation and for direction of movement all appear abruptly in the cortex, in sublaminae of the main input layer, 4C (24, 52, 58). Furthermore, neurons in multiple layers, including 3, 4B, and 6, send motion information to the dorsal and ventral cortical streams, resulting in a massively parallel system that processes information simultaneously on multiple spatial scales (58). The direction selective neurons in layer 3 have the smallest receptive fields in V1 and are especially suited to supply fine-scale information to the ventral stream for such tasks as perception of changes in facial expressions. Immediately above layer 3, in layer 2, neurons are far less selective for stimulus features (63). Layer 2 may participate in modulatory influences on primary visual cortex from higher cortical areas and other brain regions that mediate perceptual learning, attention, and emotional responses. Our results constitute the most comprehensive physiological picture of the laminar organization of primary visual cortex published to date.

Section through the fovea visualizing cell nuclei (purple), rods (red), LM cones (green), and RPE lipofuscin (orange)



Biology and psychology of the fovea: Influences of aging and nutrition.

My laboratory has made major contributions to knowledge of the fovea, the region of the retina that has most acute vision. We were the first to describe the location and distribution of the macular pigment carotenoids (11,12) that enhance contrast and protect primate foveas from damage by light (69). These pigments, lutein and zeaxanthin, confer the characteristic yellow color that bestows the name, *macula lutea,* on the foveal region (See photo on p. 5 upper right). We have also provided three-dimensional reconstructions of the retinal vasculature of the fovea and the relationships of the vasculature to the neural layers (17,22,23). As far as we know, our reconstructions of the retinal capillary networks are the only complete maps of vascular networks in the scientific literature.



Complete vascular network of the fovea of a monkey (*M. fascicularis*). From (22) and the cover of J. Neurosci.

Because the retina is vulnerable to degenerative changes with age, we have investigated the protective effects of the macular pigment and other nutrients, such as vitamin E (25,26,R6). We have shown that the macular pigment carotenoids and vitamin E have complementary distributions in the retina (21, 25, 26) that are precisely related to the oxygen tension and oxidative metabolism in the retina (R6).

To extend our work to humans we measured macular pigment and visual function in people of different ages with psychophysical techniques. We found that low macular pigment is linked to multiple risk factors for age-related macular degeneration, a major public health problem (27, 28, 29, 45). Conversely, older people with high macular pigment appear to be protected from loss of sensitivity of both cone and rod systems (38). A perceptual benefit is the ability of people with higher amounts of macular pigment to work at higher light levels where acuity is better, without experiencing visual discomfort (72). These results have set the stage for dietary intervention (31, 37, 42) to determine whether enhanced nutrition can prevent or retard visual loss with aging. Interest in this possibility is very high, as evidenced by the fact that our paper published in 1997 showing enhancement of macular pigmentation through dietary manipulation (37) was number 18 in the list of most cited papers in that journal in July 2008.

To facilitate application of our results, we invented a small device (40; see patents) of modest cost that can be used with large populations at multiple study sites. Using it, we have collaborated in measurements of macular pigment density (48) in more than 1700 women whose eye health , lifestyle factors (68), and genetic factors (71) were also analyzed. These human studies represent translational research that has the potential for retarding or preventing many cases of age-related macular degeneration, the most frequent cause of new cases of blindness in industrialized countries. Our results confirm that diet, adiposity, and diabetes are factors that contribute to macular pigment density in the retina (56). However, most of the variance in human macular pigment density remains unexplained, which indicates that other factors still must be identified. Relationships between lutein, zeaxanthin, macular pigment, and disease risk are still difficult to discern (59), but it is important to elucidate them because they offer one of the most benign ways to prevent vision loss, including prevention of cataracts (36, 60).

To clarify the biological effects of the macular pigment, we studied monkeys that were raised with no carotenoids in their diets, and hence had no macular pigment (49). We showed that the macular pigment is important for normal development and maintenance of the retinal pigment epithelium (RPE, 50). S-cones and rods were also affected, but less severely (53). Another important nutritional component is docosahexaenoic acid (DHA), the most unsaturated ω-3 fatty acid in the retina. Animals with low *vs* adequate amounts of DHA showed different profiles of RPE cells along the vertical meridian (50, 53). Because the RPE may be the key tissue whose deterioration leads to macular degeneration, these results increased the motivation for understanding the multiple roles of nutrition.

An unusual feature of the macular pigment is the accumulation of a xanthophyll, *meso*-zeaxanthin, that is not of dietary origin and is found nowhere else in the body. We showed that lutein, which is abundant in the diet, is the source of *meso*-zeaxanthin in the retina (51). The ability to transform lutein to *meso*-zeaxanthin may vary between individuals and account for the extreme variability of macular pigment, which can differ as much as 10-fold among normal people.

With these extensive results, our animal studies were concluded and our research on the fovea focused on human studies, where we have also examined relationships between macular pigment and the neuroprotective lipid DHA (61), as well integration of macular pigment into the foveal anatomy (62). We have shown that the visual system compensates for the presence of macular pigment so that we do not perceive different brightness or color at points on the retina that have very different amounts of macular pigment (55). Nevertheless, we were able to develop straightforward and robust psychophysical protocols for measurement of macular pigment in elderly subjects who had macular degeneration or were at risk for it (66). In addition, our results indicate that DHA, which is high in the brain as well as in the retina, has cognitive benefits (64), so this field of research has multiple potential benefits for human health.

The health effects of lifestyle variables, including diet, lifestyle, and genes, are continuing to be investigated in the CAREDS study (74) that I helped to establish.

Teaching Experience and Approach:

This section provides an overview of my teaching experience and approach. Details of formal instruction are given in the next section. I have taught at undergraduate, graduate, and postdoctoral levels. From 1974 to 1976 I held concurrent appointments at Northeastern University and at the Eye Research Institute in Boston. I lectured and supervised laboratories for hundreds of students. I divided my time between teaching at Northeastern and research at the Eye Research Institute, expecting that Northeastern would provide research facilities after an initial period. However, the facilities did not materialize, and I resigned my appointment at Northeastern to return to full-time status at what is now the Schepens Eye Research Institute. I initiated a post-doctoral training grant at the Schepens Eye Research Institute and was co-director of the training program and co-chair of the committee that monitored training at all levels at the Institute. The training grant was continuously funded for 15 years.

At the Medical College of Georgia, I helped develop an interdisciplinary graduate program in neuroscience and I lectured to the graduate students.

I have a long-standing interest in social policy and the ways that higher education and scientific knowledge should contribute to improved policies. At the University of Texas, I developed an undergraduate course in international nutrition with emphasis on social and environmental policies that drew upon my work related to effects of nutrition on the eye. For two years I also directed the introductory graduate core course in neuroscience.

My recent formal teaching activities were upper division undergraduate lecture and lab courses in visual neuroscience that I developed. The lecture course traces acquisition and transformation of information from the eye through stages of processing in the retina and the brain. It examines factors influencing the most prevalent types of blindness and considers how they might be prevented. The emphasis is on primates as models for human visual systems, but comparisons are made with other animals to determine how they solve visual tasks. The course includes demonstrations and computer-based exercises to encourage active participation. It concludes with study of the diversity of primate visual systems and their relationships to ecological specializations. In the lab course, students participate in demonstrations and conduct experiments on their own visual systems designed to illustrate principles of visual and visuomotor function. Some activities include recording and analyzing environmental parameters that influence neural function and behavior.

In addition to formal coursework, a strong emphasis throughout my career has been on training students at all levels with one-on-one instruction in the laboratory. I particularly enjoy involving undergraduates in research and I have teams of undergraduates helping with data organization and data analysis in the lab. I also take undergraduates to the tropical forest as field assistants and they report that it is a life-changing experience.

Teaching during previous appointments

1968-1970	Lectures on science and public policy, New School for Social Research, NY and University of California, Berkeley. Records unavailable
1974	Graduate seminar in Sensory Processes and Behavioral Neurobiology. Department of Psychology, Harvard University, Cambridge.

	Seminar leader jointly with R.J.W. Mansfield. Six graduate students, 44 hours preparation and contact time.
1974-1976	Lectures and laboratories in Human Biology, Anatomy, and Physiology Northeastern University, Boston. Full year, team-taught course, 3hrs lecture/wk. Approximately 700- 1,000 allied health students.
	Freshman seminar in Animal Behavior. Northeastern University, Boston. Quarter course, 2 contact hours/wk, 1/yr.
	Graduate seminars in Neuroscience and Visual Mechanisms. with labs, Northeastern University, Boston. Quarter courses, 6 contact hours/wk., 1/yr.
1974-1989	Co-director, NIH grant for postdoctoral training, Eye Research Institute. In the final five-year period there were about 80 trainees at levels from undergraduate to advanced postdoctoral.
1979	Graduate seminar in Color Vision, Harvard Medical School, Boston. Four graduate students, two post-docs, and one lab technician. 85 hours preparation and contact time.
1980-1981	Graduate seminar in Spatiotemporal Analysis of Visual Mechanisms, Harvard Medical School. Three graduate students and one post-doc. 75 hours preparation and contact time.
1981	Reading course in Color Vision, Harvard Medical School. One graduate student, 24 hours preparation and contact time.
1987	Guest lecture on visual system function in graduate neuroscience course, Northeastern Ohio Universities College of Medicine, Rootstown, Ohio.
1987-1989	Guest lectures on visual system function in graduate and postgraduate courses Harvard Medical School, and Massachusetts Eye and Ear Infirmary
1997-2000	Thesis committee member, Dept. of Neurobiology, Harvard Medical School. One graduate student, Five hours per year.
1998	Guest lecture, graduate course in neural systems, Boston University.
2002	Thesis committee member, Dept. of Psychology, University of New Hampshire One graduate student, Five hours per year.
2004	Lectures on visual neuroscience, SGS 8034, Neuroscience graduate course, Medical College of Georgia, 21 students, 3 hours contact time.
2005	Lectures on systems neuroscience, NSC 8082, Neuroscience graduate course, Medical College of Georgia, 7 students, 6 hours contact time.

Teaching at the University of Texas at Austin

Formal courses:

2006	Fall. Upper level undergraduate course, NTR 360 (57507) International Nutrition: Social and Environmental Policies, 31 students, 3hrs lecture/wk.
2007	Spring. Graduate seminar, NTR 394 (56135), Nutrition and the Eye, 2 students, 3 hr/wk.
2007	Fall. Upper level undergraduate course, NTR 360 (57720). International Nutrition: Social and Environmental Policies. 43 students, 3hrs lecture/wk.
2008	Spring. Graduate course, NTR 390 (56815)/ NEU 385 (66123), Visual Neuroscience, 5 students, 3 hr/wk.
2008	Fall. Coordinator for Principles of Neuroscience, NEU 382T (67695, graduate), BIO 337 (52232, undergraduate) 3 hr/wk & Current Research in Neuroscience,

	NEU 185 (67715, graduate) 1 hr/wk, 17 students total.
2009	Spring. Visual Neuroscience. NTR 390 (55365, graduate), NEU 385L (57595, graduate), BIO 337 (50972, undergraduate), 13 students total, 3 hr/wk.
2009	Fall. Coordinator for Principles of Neuroscience, NEU 482T (58380, graduate), BIO 437 (51830, undergraduate), 27 students total, 4 hr/wk.
2009	Fall. Visual Neuroscience. NTR 365 (55873), BIO 337 (51820) both undergraduate, 27 students total, 3 hr/wk.
2011	Spring. Visual Neuroscience. NTR 365 (54527), BIO 337 (50162), both undergraduate, NEU 380G, graduate, (56762), 29 students total, 3 hr/wk.
2012	Spring. Visual Neuroscience. BIO 337 (49550, undergraduate) 25 students, 3 hr/wk.
2013	Spring. Visual Neuroscience. BIO 366E (50550, undergraduate) 9 students, 3 hr/wk
2014	Fall. Laboratory in Psychophysics, NEU 366P (56895, undergraduate) 18 students, 3 credit hours.
2015	Fall. From the Eye to the Brain, NEU 337 (54368, undergraduate) 22 students, 3 credit hours.
2016	Spring. From the Eye to the Brain, NEU 337 (54489, undergraduate) 12 students. Visual Neuroscience NEUG (54589, graduate) 2 students. 3 credit hours.
2016	Fall. From the Eye to the Brain, NEU 337 (55030, undergraduate) 17 students. Visual Neuroscience NEU366E (55084, undergraduate) 11 students. 3 credit hours.
2017	Fall. From the Eye to the Brain, NEU 337 (55140, undergraduate) 18 students. Visual Neuroscience NEU366E (55084, undergraduate) 12 students. 3 credit hours.
2018	Fall. From the Eye to the Brain, NEU 337 (54990, undergraduate) 18 students. Visual Neuroscience NEU366E (55020, undergraduate) 7 students. 3 credit hours.
2019	Fall. From the Eye to the Brain, NEU 337 (53765, undergraduate) 27 students. Visual Neuroscience NEU366E (53805, undergraduate) 12 students. 3 credit hours.
2021	Spring. From the Eye to the Brain, NEU 365V (55920, undergraduate) 40 students. Visual Neuroscience NEU366E (55935, undergraduate) 10 students. 3 credit hours.

Three visiting professors have spent sabbatical leaves in my laboratory to extend their professional activities. The sabbaticals led to long-term collaborations with Dr. Moshe Gur and Dr. Billy Wooten, and some of their students have received training in my laboratory as well. A listing of faculty, students, and postdocs who completed substantial training periods appears below.

Visiting Professors on Sabbatical Leave

Name	date	Present position
Robert B. Barlow, Ph.D.,	1975	Professor of Ophthalmology (Deceased, 2009) Director, Center for Vision Research SUNY, Syracuse, NY
Moshe Gur, Ph.D.,	1984-85	Associate Professor, and former Chair Biomedical Engineering, Technion, Haifa, Israel
Billy R. Wooten, Ph.D.,	1994	Emeritus Professor of Psychology and former Chair Department of Psychology Brown University, Providence, RI

Predoctoral Trainees

Name date	Position when last contacted
Wai Ping Leung, 4/1/76-11/30/77 Master's Degree Candidate Northeastern University	Private Business Hong Kong
Halyna Lobay Vitagliano, 1980-1981 Medical student, University of Pittsburgh Research Electives	Physician practicing Psychiatry
James D. Auran Senior Honors Thesis Harvard University, 1979 Medical Student Research Electives, 1981-1983 Cornell University Medical School	Professor of Ophthalmology Columbia University Edward S. Harkness Eye Institute Staff Physician Manhattan Eye, Ear, Throat Hospital
Steven T. Joyce, 1980 Undergraduate Research Project Mass. Institute of Technology	Physician Sandia National Laboratories Albuquerque, New Mexico
Laura Sewall, 1984-1985 Undergraduate Research Project Evergreen State College	Bates College, Lewiston ME Conservation Director, Harward Center
Cheryl Jacobs, 1988-1989 Undergraduate Research Electives Tufts University	Medical Student Tufts University School of Medicine
James Broderick, 1989 Summer Research Project Mass. Institute of Technology	Medical Student University of Massachusetts, Medical School, Worcester
John C. Choi, 1989-1990 M.D. Thesis, Magna Cum Laude Harvard Medical School	Fellow in Ophthalmology Boston, MA
John M. Burke, 1992-1993 Undergraduate Research Project Harvard University	Medical student Baylor College of Medicine Houston, TX
Jason Horn Summer Research Project, 1994	Graduate student Boston University
Christian Keysers Summer Research Project, 1994	Professor University Medical Center, Groningen, The Netherlands
Alexander Beylin, 1995-1996 Ph.D. thesis research (co-advisor)	Biomedical engineer in industry
Igor Kagan, 1998-2003 Ph.D. thesis research (co-advisor)	Group Leader, Decision and Awareness Group German Primate Center, Goettingen

Adam Wenzel, 1999-2000 Independent research project	Associate Professor, Psychology, Dept Chair St. Anselm College, Manchester, NH.
James Stringham, 1999-2000 Independent research project	Chief Scientific Officer MacuHealth
Bilgin Ersoy, 2004-2005 Doctoral thesis research	Graduate student Boston University
Ya-Mei Tang, 2004-2006 Doctoral thesis research	Professor, Neurology Sun Yat-Sen University, Guangzhou, China
Elsie Wong, 2004-2006 Graduate research project	Graduate student Medical College of Georgia
Ginger Pocock 2010-2013 Doctoral Thesis research	Postdoctoral Fellow University of Wisconsin, Madison
Baoyu Zhou 2013-2015 Doctoral Thesis Research	Graduate student Jilin University, Changchun, Jilin, China
Kelsey M. Ellis 2013-2018 Graduate research project	Visiting Assistant Professor Miami University, Ohio
Sarina R. Lieberman 2015-2017 Undergraduate research project	Health IT, industry Atlanta, GA

Postdoctoral Trainees

Name date	Position when last contacted
Harvey A. Swadlow, 9/9/74-7/31/75	Professor of Psychology University of Connecticut, Storrs, CT
George T. Timberlake, 1975-1977	Professor of Ophthalmology University of Kansas
Daniel Kurtz, 10/3/77-5/31/80	Professor (Deceased) New England College of Optometry
Mary Jo Nissen, 6/27/80-12/31/80	Associate Professor of Psychology University of Minnesota, Twin Cities
Judy Lin, 1988-1989	Physician, practicing ophthalmology
Richard S. Weinhaus, 1985-1986 (Pre-Residency) 1989-1990 (Post-Residency)	Physician practicing ophthalmology
B. R. Hammond, Jr 6/1/94 - 6/30/96 Fight for Sight Fellow	Professor of Psychology University of Georgia, Athens
Michelle L. Bieber, 10/1/98 – 4/30/99	Postdoctoral fellow University of Pennsylvania
Ivan Y-F. Leung, 10/17/2000-8/31/03	Senior Lecturer, Optometry Singapore Polytechnic, Singapore
John M. Nolan, 10/10/2005-6/1/2006 Fulbright Scholar	Howard Chair in Human Nutrition Waterford Institute of Technology, Ireland

James M. Stringham, 2/17/03-9/01/06 Fight for Sight Fellow	Chief Scientific Officer University of Georgia, Athens
Lisa M. Renzi, 8/15/08-8/01/09	Associate Prof, Health Promotion & Behavior Director, Institute of Gerontology College of Public Health Univ of Georgia, Athens
Maka Malania, 3/15/2010-6/30/2011	Lecturer/Researcher Agricultural Univ of Georgia, Tbilisi, Georgia

Undergraduates receiving research experience at University of Texas, Austin

Fall 2008- Spring 2009, Cindy K. Hua, Grace Eunae Yeo
Summer 2009, Proy Phongsawad, Pooja Naik, Paul Tavakolian
Fall 2009-Spring 2010, Proy Phongsawad, Sandip Biswas, Scott Lee
Fall 2011-Spring 2012, Summer 2012, Scott Lee, Benjamin Ho, Henna Kim, Sishira Mannuru, Dan Dietemann, Michelle Dye, Yafei Ouyang, Natalie Craik
Fall 2012-Spring 2013, Summer 2013, Scott Lee, Yafei Ouyang, Natalie Craik, Priya Chacko
Fall 2013-Spring 2014, Priya Chacko
Fall 2014-Spring 2015, Angela Horton, Arti Machchhar, Farzam Farahani, Alice Thai, Sarina Lieberman.
Fall 2015-Spring 2016, Sarina Lieberman, Frank Wang, Paul Viola, Ritwick Mynam, Chelsea Ogan, Raven Cortright, Pranav Kavikondala
Fall 2016-Spring 2017, Sarina Lieberman, Frank Wang, Chelsea Ogan, Pranav Kavikondala, Miranda Jankovic, Iannellee Garza, Ritwick Mynam, Laura Moreno-Vasquez.
Fall 2017-Spring 2018, Cassidy Malone, Karim Omar, Mindy He
Fall 2018-Spring 2019, Hannah Danks, Raquel Kosted, Judy McNeill, Jennifer Molis, Delisa Ramos, Liyan Tang, Khue Tran,
Fall 2019-Spring 2020, Anoushka Dasgupta, Yuhang Deng, Judy McNeill, Jennifer Molis, Ngoc Han Nguyen, Marie Pierce, Delisa Ramos, Avery Shepherd, Sarah Shu, Khue Tran.
Fall 2020-Spring 2021, Grace Andres, Joel Pereira, Aliya Boiselle, Delisa Ramos (post-bac)
Fall 2021-Spring 2022, Delisa Ramos (post-bac), Aliya Boisselle, Daniel Jilek, Thomas Jensen, Filina Nurcahya-Tjoa, Enya Liu, Yuanyuan Ding, Grace Zhang.
Fall 2022-Spring 2023, Aaron Hardman, Anne Fu, Mahek Jani, Arshia Verma, Claudia Singarayakumar Anshu Kondala
Fall 2023-Spring 2024, Anshu Kondala, Claire Guzman, Lalithaa Subramanian, Rida Shehzad, Aaron Hardman, Anne Fu, Mahek Jani, Claudia Singarayakumar.

Students participating in field research

2013 Kelsey Ellis, UT Austin graduate student; Sam Hibdige, undergraduate at Durham University, UK.
2015 Sarina Lieberman, UT Austin undergraduate student.
2016 Erika Troya, Universidad San Francisco de Quito undergraduate student.
2017 Laura Moreno-Vasquez, UT Austin post-bac special student.
2018 Joseph Castillo, Texas A&M, 2018 graduate.
2019 Hannah Danks, UT Austin undergraduate.

Bibliography:

Citation indices: 13,424 total citations. 41 papers have been cited more than 100 times each

h-index 56, Data from Google Scholar, June 19, 2024.

Papers in refereed journals.

1. Snodderly DM. Reversible and irreversible bleaching of rhodopsin in detergent solutions. Proc Natl Acad Sci USA. 1967; 57:1356-1362.
2. Snodderly DM, Barlow RB. Projection of the lateral eye of Limulus to the brain. Nature. 1970; 227:284-286.
3. Snodderly DM. Processing of visual inputs by brain of Limulus. J Neurophysiol. 1971; 34:588-611.
4. DeValois RL, Morgan H, Snodderly DM. Psychophysical studies of monkey vision. III. Spatial luminance contrast sensitivity tests of macaque and human observers. Vision Res. 1974; 14:75-81. https://doi.org/10.1016/j.visres.2014.07.009.
5. DeValois RL, Snodderly DM, Yund EW, Hepler NK. Responses of macaque lateral geniculate cells to luminance and color figures. Sensory Processes. 1977; 1:244-259.
6. Yund EW, Snodderly DM, Hepler NK, DeValois RL. Brightness contrast effects in monkey lateral geniculate nucleus. Sensory Processes. 1977; 1:260-271.
7. Barlow RB, Snodderly DM, Swadlow HA. Intensity coding in primate visual system. Exp Brain Res. 1978; 31:163-177.
8. Snodderly DM, Swadlow HA, Barlow RB. Evaluation of a surgical method for immobilizing the eye of an alert monkey. Exp Brain Res. 1978; 31:179-191.
9. Snodderly DM. Eggshell removal by the laughing gull, *Larus atricilla*: Normative data and visual preference behavior. Anim Behav. 1978; 26:487-506.
10. Stromeyer CF, Snodderly DM. Questions about spatial adaptation of short-wavelength pathways in humans. Science. 1981; 214:471-472.
11. Snodderly DM, Brown PK, Delori FC, Auran JD. The macular pigment. I. Absorbance spectra, localization, and discrimination from other pigments. Invest Ophthalmol Vis Sci. 1984; 25:660-673.
12. Snodderly DM, Auran JD, Delori FC. The macular pigment. II. Spatial distribution in primate retinas. Invest Ophthalmol Vis Sci. 1984; 25:674-685.
13. Snodderly DM, Kurtz D. Eye position during fixation tasks: comparison of macaque and human. Vision Res. 1985; 25:83-98.
14. Kurtz D, Snodderly DM. Primate head and body restraint without chronic skin openings or attachments to the animal. Behav Res Methods Instr Comput. 1985; 17:391-396.
15. Snodderly DM. Effects of light and dark environments on macaque and human fixational eye movements. Vision Res. 1987; 27:401-415.
16. Gur M, Snodderly DM. Studying striate cortex neurons in behaving monkeys: benefits of image stabilization. Vision Res. 1987; 27:2081-2087.
17. Snodderly DM, Weinhaus RS. Retinal vasculature of the fovea of the squirrel monkey, *Saimiri sciureus*: three-dimensional architecture, visual screening, and relationships to the neuronal layers. J Comp Neurol. 1990; 297:145-163.

18. Krinsky NI, Russett MD, Handelman GJ, Snodderly DM. Structural and geometrical isomers of carotenoids in human plasma. J Nutr. 1990; 120:1654-1661.
19. Snodderly DM, Russett MD, Land RI, Krinsky NI. Plasma carotenoids of monkeys (*Macaca fascicularis* and *Saimiri sciureus*) fed a nonpurified diet. J Nutr. 1990; 120:1663-1671.
20. Handelman GJ, Snodderly DM, Krinsky NI, Russett MD, Adler AJ. Biological control of primate macular pigment: Biochemical and densitometric studies. Invest Ophthalmol Vis Sci. 1991; 32:257-267.
21. Snodderly DM, Handelman GJ, Adler AJ. Distribution of individual macular pigment carotenoids in central retina of macaque and squirrel monkeys. Invest Ophthalmol Vis Sci. 1991; 32:268-279.
22. Snodderly DM, Weinhaus RS, Choi JC. Neural-vascular relationships in central retina of macaque monkeys (*Macaca fascicularis*). J Neurosci. 1992; 12:1169-1193. Cover illustration for the April issue.
23. Weinhaus RS, Burke JM, Delori FC, Snodderly DM. Comparison of fluorescein angiography with microvascular anatomy of macaque retinas. Exp Eye Res. 1995; 61:1-16.
24. Snodderly DM, Gur M. Organization of striate cortex (V1) of alert, trained monkeys (*Macaca fascicularis*): Ongoing activity, stimulus selectivity, and widths of receptive field activating regions. J Neurophysiol. 1995; 74:2100-2125. Cover illustration for November and December issues.
25. Crabtree DV, Adler AJ, Snodderly DM. Vitamin E, retinyl palmitate, and protein in rhesus monkey retina and retinal pigment epithelium-choroid. Invest Ophthalmol Vis Sci. 1996; 37:47-60.
26. Crabtree DV, Adler AJ, Snodderly DM. Radial distribution of tocopherols in rhesus monkey retina and retinal pigment epithelium-choroid. Invest Ophthalmol Vis Sci. 1996; 37:61-76.
27. Hammond BR, Fuld K, Snodderly DM. Iris color and macular pigment optical density. Due to a publisher's error, an uncorrected draft was published in Exp Eye Res. 1996; 62:293-297. The correct version is in Exp Eye Res. 1996; 62:715-720.
28. Hammond BR, Curran-Celentano J, Judd S, Fuld K, Krinsky NI, Wooten BR, Snodderly DM. Sex differences in macular pigment optical density: Relation to plasma carotenoid concentrations and dietary patterns. Vision Res. 1996; 36:2001-2012.
29. Hammond BR, Wooten BR, Snodderly DM. Cigarette smoking and retinal carotenoids: Implications for age-related macular degeneration. Vision Res. 1996; 36:3003-3009.
30. Gur M, Snodderly DM. Visual receptive fields of neurons in primary visual cortex (V1) move in space with the eye movements of fixation. Vision Res. 1997; 37:257-265.
31. Snodderly DM, Shen B, Land RI, Krinsky NI. Dietary manipulation of plasma carotenoid concentrations of squirrel monkeys (*Saimiri sciureus*). J Nutr. 1997; 127:122-129.
32. Gur M, Snodderly DM. A dissociation between brain activity and perception: Chromatically opponent cortical neurons signal chromatic flicker that is not perceived. Vision Res. 1997; 37:377-382.
33. Crabtree DV, Snodderly DM, Adler AJ. Retinyl palmitate in macaque retina-retinal pigment epithelium-choroid: Distribution and correlation with age and vitamin E. Exp Eye Res. 1997; 64: 455-463.
34. Gur M, Beylin A, Snodderly DM. Response variability of neurons in primary visual cortex (V1) of alert monkeys. J Neurosci. 1997; 17: 2914-2920.
35. Hammond BR, Wooten BR, Snodderly DM. Individual variations in the spatial profile of human macular pigment. J Opt Soc Am A. 1997; 14: 1187-1196.

36. Hammond BR, Wooten BR, Snodderly DM. Density of the human crystalline lens is related to the macular pigment carotenoids, lutein and zeaxanthin. Optometry and Vision Sci. 1997; 74: 499-504.

37. Hammond BR, Johnson EJ, Russell RM, Krinsky NI, Yeum K-J, Edwards RB, Snodderly DM. Dietary modification of human macular pigment density. Invest Ophthalmol Vis Sci. 1997; 38: 1795-1801.

38. Hammond BR, Wooten BR, Snodderly DM. Preservation of visual sensitivity of older individuals: Association with macular pigment density. Invest Ophthalmol Vis Sci. 1998; 39: 397-406.

39. Gur M, Beylin A, Snodderly DM. Physiological properties of macaque V1 neurons are correlated with extracellular spike amplitude, duration, and polarity. J Neurophysiol. 1999; 82: 1451-1464.

40. Wooten BR, Hammond BR, Land RI, Snodderly DM. A practical method for measuring macular pigment optical density. Invest Ophthalmol Vis Sci. 1999; 40: 2481-2489.

41. Hammond BR, Nanez JE, Fair C, Snodderly, DM. Iris color and age-related changes in lens optical density. Ophthalmic Physiol Opt. 2000; 20: 381-386.

42. Johnson EJ, Hammond BR, Yeum K-J, Qin J, Wang XD, Castaneda C, Snodderly DM, Russell RM. Relationship among serum and tissue concentrations of lutein and zeaxanthin and macular pigment density. Am J Clin Nutr. 2000; 71: 1555-1562.

43. Snodderly DM, Kagan I, Gur M. Selective activation of visual cortex neurons by fixational eye movements: Implications for neural coding. Vis Neurosci. 2001; 18: 259-277.

44. Delori FC, Goger DG, Hammond BR, Snodderly DM, Burns SA. Macular pigment density measured by autofluorescence spectrometry; comparison with reflectometry and heterochromatic flicker photometry. J Opt Soc Am A. 2001; 18: 1212-1230.

45. Hammond BR, Ciulla TA, Snodderly, DM. Macular pigment density is reduced in obese subjects. Invest Ophthalmol Vis Sci. 2002; 43: 47-50.

46. Snodderly DM, Sandstrom MM, Leung IY-F, Zucker CL, Neuringer M. Retinal pigment epithelial cell distribution in central retina of rhesus monkeys (*Macaca mulatta*). Invest Ophthalmol Vis Sci. 2002; 43: 2815-2818.

47. Kagan I, Gur M, Snodderly DM. Spatial organization of receptive fields of V1 neurons of alert monkeys: comparison with responses to gratings. J Neurophysiol. 2002; 88: 2557-2574.

48. Snodderly DM, Mares JA, Wooten BR, Oxton L, Gruber M, Ficek T. Macular pigment measurement by heterochromatic flicker photometry in older subjects: the Carotenoids and Age-Related Eye Disease Study. Invest Ophthalmol Vis Sci. 2004; 45: 531-538.

49. Neuringer M, Sandstrom, MM, Johnson EJ, Snodderly DM. Nutritional manipulation of primate retinas, I. Effects of lutein or zeaxanthin supplements on serum and macular pigment in xanthophyll-free monkeys. Invest Ophthalmol Vis Sci. 2004; 45: 3234-3243. https://doi.org/10.1167/iovs.02-1243.

50. Leung IY-F, Sandstrom MM, Zucker CL, Neuringer M, Snodderly DM. Nutritional manipulation of primate retinas, II. Effects of age, n-3 fatty acids, lutein, and zeaxanthin on retinal pigment epithelium. Invest Ophthalmol Vis Sci. 2004; 45: 3244-3256. https://doi.org/10.1167/iovs.02-1233.

51. Johnson EJ, Neuringer M, Russell, RM, Schalch W, Snodderly DM. Nutritional manipulation of primate retinas. III. Effects of lutein or zeaxanthin supplementation on adipose and retina of xanthophyll-free monkeys. Invest Ophthalmol Vis Sci. 2005; 46: 692-702. https://doi.org/10.1167/iovs.02-1192.

52. Gur M, Kagan I, Snodderly DM. Orientation and direction selectivity of neurons in V1 of alert monkeys: functional relationships and laminar distributions. Cereb Cortex. 2005; 15: 1207-1221. doi:10.1093/cercor/bhi003, Advance Access publication December 22, 2004.

53. Leung IY-F, Sandstrom MM, Zucker CL, Neuringer M, Snodderly DM. Nutritional manipulation of primate retinas. IV. Effects of n-3 fatty acids, lutein, and zeaxanthin on S-cones and rods in the foveal region. Exp Eye Res. 2005; 81: 513-529. https://doi.org/10.1016/j.exer.2005.03.009.

54. Gur M, Snodderly DM. High response reliability of neurons in primary visual cortex (V1) of alert, trained monkeys. Cereb Cortex. 2006; 16: 888-895. doi:10.1093/cercor/bhj032, Advance Access publication September 8, 2005.

55. Stringham JM, Hammond BR, Wooten BR, Snodderly DM. Compensation for light loss due to filtering by macular pigment: Relation to the S-Cone pathway. Optom.Vis.Sci. 2006; 83: 887-894.

56. Mares JA, LaRowe TL, Snodderly DM, Moeller SM, Gruber MJ, Klein ML, Wooten BR, Johnson EJ, Chappell RJ. Predictors of optical density of lutein and zeaxanthin in retinas of older women in the Carotenoids in Age-Related Eye Disease Study, an ancillary study of the Women's Health Initiative. Am J Clin.Nutr. 2006; 84: 1107-1122.

57. Tang Y, Saul A, Gur M, Goei S, Wong E, Ersoy B, Snodderly DM. Eye position compensation improves estimates of response magnitude and receptive field geometry in alert monkeys. J Neurophysiol. 2007; 97: 3439-48.

58. Gur M, Snodderly DM. Direction selectivity in V1 of alert monkeys: Evidence for parallel pathways for motion processing. J Physiol (Lond) 2007; 585: 383-400.

59. LaRowe TL, Mares JA, Snodderly DM, Klein ML, Wooten BR, Chappell R. CAREDS Macular Pigment Study Group. Macular pigment density and age-related maculopathy in the Carotenoids in Age-Related Eye Disease Study. An ancillary study of the Women's Health Initiative. Ophthalmology 2008; 115: 876-883.

60. Moeller SM, Voland R, Tinker L, Blodi BA, Klein ML, Gehrs KM, Johnson EJ, Snodderly DM, Wallace RB, Chappell RJ, Parekh N, Ritenbaugh C, Mares JA: CAREDS Study Group: Women's Health Initiative. Associations between age-related nuclear cataract and lutein and zeaxanthin in the diet and serum in the Carotenoids in Age-Related Eye Disease Study (CAREDS), an Ancillary Study of the Women's Health Initiative. Arch Ophthalmol. 2008; 126: 354-364. PMC2562026

61. Johnson EJ, Chung H, Caldarella S, Snodderly DM. The influence of supplemental lutein and docosahexaenoic acid on serum, lipoproteins, and macular pigmentation. Am J Clin Nutr. 2008; 87:1521-1529. https://doi.org/10.1093/ajcn/87.5.1521.

62. Nolan JM, Stringham JM, Beatty S, Snodderly DM. Spatial profile of macular pigment and its relationship to foveal architecture. Invest Ophthalmol Vis Sci. 2008; 49: 2134-2142.

63. Gur M, Snodderly DM. Physiological differences between neurons in layer 2 and layer 3 of primary visual cortex (V1) of alert macaque monkeys. J Physiol (Lond), 2008; 586: 2293-2306.

64. Johnson EJ, McDonald K, Caldarella SM, Chung HY, Troen AM, Snodderly DM. Cognitive findings of an exploratory trial of docosahexaenoic acid and lutein supplementation in older women. Nutr Neurosci. 2008; 11: 75-83. https://doi.org/10.1179/147683008x301450.

65. Kagan I, Gur M, Snodderly DM. Saccades and drifts differentially modulate neuronal activity in V1: effects of retinal image motion, position, and extraretinal influences. J Vision. 2008; 8(14):19, 1-25. http://journalofvision.org/8/14/19.

66. Stringham JM, Hammond BR, Nolan JM, Wooten BR, Mammen A, Smollon W, Snodderly DM. The utility of using customized heterochromatic flicker photometry (cHFP) to measure macular pigment in patients with age-related macular degeneration. Exp Eye Res. 2008; 87: 445-453.

67. Snodderly DM, Kagan I, Gur M. Linearity and selectivity of neuronal responses in awake visual cortex. Importance of the cell sample. eLetter to J. Vision. 2010 http://www.journalofvision.org/content/9/9/12.short/reply#jov_el_84

68. Mares JA, Voland R, Sondel SA, Millen AE, LaRowe T, Moeller SM, Klein ML, Blodi BA, Chappell R, Tinker L, Ritenbaugh C, Gehrs K, Sarto G, Johnson EJ, Snodderly DM, Wallace RB. Healthy lifestyles related to subsequent prevalence of age-related macular degeneration. Arch Ophthalmol. 2011; 129: 470-480

69. Barker FM II, Snodderly DM, Johnson EJ, Schalch W, Koepcke W, Gerss J, Neuringer M. Nutritional manipulation of primate retinas. V: effects of lutein, zeaxanthin and n–3 fatty acids on retinal sensitivity to blue light damage. Invest Ophthalmol Vis Sci. 2011; 52:3934-3942. https://doi.org/10.1167/iovs.10-5898.

70. Vishwanathan R, Neuringer M, Snodderly DM, Schalch W, Johnson EJ. Macular lutein and zeaxanthin are related to brain lutein and zeaxanthin in primates. Nutr Neurosci 2012; 16: 21-29. DOI:10.1179/1476830512Y.0000000024

71. Meyers KJ, Johnson EJ, Bernstein PS, Iyengar SK, Engelman CD, Karki CK, Liu Z, Igo RP, Jr., Truitt B, Klein ML, Snodderly DM, Blodi BA, Gehrs KM, Sarto GE, Wallace RB, Robinson J, Leblanc ES, Hageman G, Tinker L, Mares JA Genetic determinants of macular pigments in women of the carotenoids in age-related eye disease study. Invest Ophthalmol Vis Sci. 2013; 54:2333-2345.

72. Stringham JM, Snodderly DM. Enhancing performance while avoiding damage: a contribution of macular pigment. Invest Ophthalmol Vis Sci. 2013; 54:6298-6306.

73. Przybyszewski AW, Kagan I, Snodderly DM. Primate area V1: largest response gain for receptive fields in the straight-ahead direction. Neuroreport 2014; 25:1109-1115. doi:10.1097/WNR.0000000000000235

74. Meyers KJ, Liu Z, Millen AE, Iyengar SK, Blodi BA, Johnson, EJ, Snodderly, DM, Klein, KL, Gehrs, KM, Tinker, L, Sarto, GE, Robinson, J, Wallace, RB, Mares JA. Joint Associations of Diet, Lifestyle, and Genes with Age-Related Macular Degeneration, Ophthalmology. 2015; 122(11):2286-94. doi: 10.1016/j.ophtha.2015.07.029. Epub 2015 Sep 6. PMID: 26354764

75. Snodderly DM. A physiological perspective on fixational eye movements. Vision Res. 2016; 118:31-47. doi:10.1016/j.visres.2014.12.006; available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4475509.

76. Ko HK, Snodderly DM, Poletti M. Eye movements between saccades: Measuring ocular drift and tremor. Vision Res. 2016; 122: 93-104. doi: 10.1016/j.visres.2016.03.006.

77. Snodderly DM, Ellis KM, Lieberman SR, Link A, Fernandez-Duque E, Di Fiore A. Initiation of feeding by four sympatric Neotropical primates (*Ateles belzebuth, Lagothrix lagotricha poeppigii*, *Plecturocebus (Callicebus) discolor,* and *Pithecia aequatorialis*) in Amazonian Ecuador: Relationships to photic and ecological factors. PLoS ONE. 2019; 14(1): e0210494. https://doi.org/10.1371/journal.pone.0210494. Accepted 2018, published 2019. A file with Table 1 reformatted for clarity can be downloaded at:

http://www.sbs.utexas.edu/SnodderlyLab/downloads/Snodderly-et-al-2019-Initiation-of-Feeding-clear-Table-1.pdf

78. Veilleux, Carrie; Kawamura, Shoji; Montague, Michael; Hiwatashi, Tomohide; Matsushita, Yuka; Fernandez-Duque, Eduardo; Link, Andres; Di Fiore, Anthony; Snodderly, D. Max. Color vision and niche

partitioning in a diverse neotropical primate community in lowland Amazonian Ecuador. Ecol Evol. 2021;11:5742-5758. https://doi.org/10.1002/ece3.7479.

Proceedings of Meetings:

M1. Snodderly DM, Leung WP, Timberlake GT, Smith DPB. Mapping retinal features in a freely moving eye with precise control of retinal stimulus position. In: Cool SJ, Smith EL III, eds. Frontiers in Visual Science. New York: Springer, 1978: 79-92.

M2. Snodderly DM. Visual discriminations encountered in food foraging by a neotropical primate: Implications for the evolution of color vision. In: Burtt EH Jr., ed. The Behavioral Significance of Color. New York: Garland Press, 1979: 238-285. https://doi.org/10.4324/9781351270441-7.

Reviews and Chapters (*Starred items are peer reviewed):

R1. Snodderly DM. Extracellular single unit recording. In: Thompson RF, Patterson MM, eds. Bioelectric Recording Techniques, Part A. Cellular Processes and Brain Potentials. New York: Academic Press, 1973: 137-163.

R2. *Snodderly DM. Biomedical and social aspects of air pollution. In: Pitts JN, Metcalf RL, eds. Advances in Environmental Sciences and Technology, Vol. III. New York: Wiley-Interscience, 1974: 157-281.

R3. Snodderly DM. Visual processing in the primate geniculocortical system: A brief review. In: Pruett RC, Regan DJ, eds. Retina Congress. New York: Appleton-Century-Crofts, 1974: 19-40.

R4. Snodderly DM. Outline of a primate visual system. In: Chiarelli AB, ed. Perspectives in Primate Biology. New York: Plenum Press, 1974: 93-149.

R5. Handelman GJ, Snodderly DM, Adler AJ, Russett MD, Dratz EA. Measurement of carotenoids in human and monkey retinas. Methods in Enzymology. 1992; 213: 220-230.

R6. *Snodderly DM. Evidence for protection against age-related macular degeneration (AMD) by carotenoids and antioxidant vitamins. Am J Clin Nutr. 1995; 62 (Suppl): 1448S-1461S.

R7. Snodderly DM, Hammond BR. *In vivo* psychophysical assessment of nutritional and environmental influences on human ocular tissues: Lens and macular pigment. In: Taylor, A, ed. Nutritional and Environmental Influences on Vision. Boca Raton: CRC Press, 1999.

Dissemination of our work by other authors:

Illustrations from our papers have been used by many colleagues. Since 1992, at least 10 different figures from seven different papers have been republished by other authors, and multiple copies of my lecture slides have been incorporated into the presentations of colleagues around the world. Two of the illustrations that have most often been reprinted are from papers co-authored with students who did thesis research in my lab. Some of the colleagues requesting lecture slides or permission to publish illustrations are listed below.

Requester, Department, Date

1) J.S. Werner, Psychology, University of Colorado, 1992-3.
2) S.S. Park, Ophthalmology, Massachusetts Eye and Ear Infirmary, 1993.
3) R. Zeimer, Wilmer Ophthalmological Institute, Johns Hopkins University, 1994.
4) J. Panico and P. Sterling, Neuroscience, University of Pennsylvania, 1994.
5) G. Moore, Biomedical Engineering, University of Southern California, 1994.

6) W. Schalch, Vitamins and Fine Chemicals, Hoffmann-La Roche, 1997.
7) W. Schalch, (two figures) Vitamins and Fine Chemicals, Hoffmann-La Roche, 1997.
8) Figure used without permission, in Duane's Clinical Ophthalmology, 1998.
9) P.S. Bernstein, Ophthalmology, University of Utah, 1998.
10) J.A. Mares-Perlman, Ophthalmology and Visual Sciences, University of Wisconsin, 1998.
11) R.W. Rodieck, University of Washington, for textbook, "The First Steps in Seeing" 1998.
12) S. Beatty, Ophthalmology, Manchester, UK, 1999.
13) C.W. Oyster, University of Alabama, for textbook, "The Human Eye:Structure and Function" 1999.
14) J.T. Landrum and R. A. Bone, (two figures), Chemistry, Florida International University, 2000.
15) B.S. Winkler, Biomedical Sciences, Oakland University, 2001.
16) W. Makous, Psychology, University of Rochester, 2002.
17) L. Yannuzzi, Ophthalmology, Columbia University, 2002.
18) W.B. Saunders Co., (two figures) for Adler's Physiology of the Eye, 2002.
19) N.I. Krinsky, Biochemistry, Tufts Medical School, 2002.
20) The World and I Magazine, for lay press article, 2003.
21) G. Westheimer, Fig 16-9 in Adler's Physiology of the Eye.
22) J. Conrad, Ophthalmology, Marseille, France, 2004.
23) T. Hida, Kyourin University, Japan, for textbook on macular disease, 2005.
24) C.E. Riva, Oftalmologia, Università di Bologna, Italy, for Oxford Handbook of Physiology, 2005.
25) Hannah Bartlett, Aston University, UK, for review in Survey of Ophthalmology, 2007.
26) Elizabeth Johnson, Tufts University, for Swiss food museum exhibit, www.alimentarium.ch, 2008.
27) B. Randy Hammond, University of Georgia, for article in Nutr. Reviews.
28) Paul Bernstein, University of Utah, for web site of International Carotenoid Society.
29) Michael W. Mauser, Arizona Science Museum, for cover of book on the senses, 2009.
30) Tim O'Hare, Gatton Research Station, Queensland, Australia, 2010.
31) Paul Bernstein, University of Utah, for review article, 2010.
32) Satoru Kawamura, Osaka University, for textbook in Japanese, 2010.
33) Greg Horwitz, University of Washington, for poster, Society for Neuroscience meeting, 2011.
34) Anna Shi, LSU, Susanna Park, UC Davis, for an article submitted to Journal of Cystic Fibrosis, 2012.
35) J.T. Landrum, FL International Univ., B.Randy Hammond, Univ. of GA., for 2 book chapters, 2013.
36) Antonio Caimi, Milano, Italy, for use in "Practical Handbook of Fundus Autofluorescence", 2013.
37) Thanasis Panorgias, New England College of Optometry, for lectures and notes, 2013.
38) John Everett, Aston Univ, Birmingham, England, for doctoral thesis, 2014.
39) Lydia Sauer, University of Jena, Germany, for medical thesis, 2014.
40) Matthew Helton and Julian Nussbaum, Georgia Regents University, for poster, Retina Society, 2015.
41) Tom Cornsweet, for a book, "Seeing. How light tells us about the world." Univ of Calif Press, 2017.

42) Natasha Sefcovic, Vision Center of Excellence, Walter Reed National Military Medical Center, for a white paper, 2018.

Licenses

Our photo of the macular pigment *in situ* has been licensed for a modest fee by for-profit entities: Kemin Foods, 2008; Kalsec, Inc., 2010; Abbot Labs, 2011; Science and Medicine, 2011; Jump Corporation (Japanese television producer), 2015.

Patents

1967	US Patent 3,326,792, Snodderly, DM, Ehrenbeck R, inventors, US Government, assignee. "Differential etching apparatus."
2001	US Patent 6,315,412 B1, Snodderly DM, Land RI, Wooten BR, inventors. "Method and apparatus for measuring visual sensitivity and optical components of the eye."