

GRADUATE SCHOOL OF BREATHING SCIENCES

www.breathingsciences.org

CATALOG 2013-2014

Master of Science Degree
in Applied Breathing Sciences



AUTHORIZATION STATEMENT

GRADUATE SCHOOL OF BREATHING SCIENCES is registered by the Wyoming Department of Education (WDE) to operate as an educational institution and award degrees. The Graduate School is currently seeking accreditation with an agency recognized by the US Department of Education.

The School is governed by the provisions of Wyoming Statutes 21-2-401 through 21-2-407 and WDE Rules and Regulations Chapter 30. Any person desiring information about the requirements of the statutes, the regulations, or the applicability of those requirements to the School may contact:

Wyoming Department of Education
Hathaway Building, 2300 Capitol Avenue
Cheyenne, WY 82002-0050

GRADUATE SCHOOL OF BREATHING SCIENCES
109 EAST 17TH STREET
CHEYENNE, WYOMING 82001
Tel: 307.633.9800 Fax: 866.251.4826
email: info@breathingsciences.org

Copyright ©2013 by Graduate School of Breathing Sciences
Published in U.S.A. by Graduate School of Breathing Sciences

GRADUATE SCHOOL OF BREATHING SCIENCES

CATALOG 2013 - 2014

OVERVIEW	1	DEGREE OBJECTIVES.....	11
VISION	1	GRADES.....	12
MISSION	1	TRANSCRIPTS	12
GOALS.....	2	SUMMARY	13
EDUCATIONAL MODEL.....	2	COURSE REQUIREMENTS.....	14
AUTHORIZATION & ACCREDITATION	3	COURSES.....	15
ADMINISTRATION	3	PROSEMINARS	21
SCHOOL HISTORY	3	PRACTICUMS	22
WEBINAR LEARNING PLATFORM.....	4	COURSE SCHEDULING	23
RESOURCES.....	5	FACULTY	25
STUDENTS.....	7	Academic Year 2013 - 2014.....	32
REQUIREMENTS.....	7	Academic Year 2014 - 2015.....	34
TUITION	8		
TUITION REFUNDS.....	8		
SCHOLARSHIPS & FINANCIAL AID.....	8		
FINANCIAL POLICIES	8		
WITHDRAWAL & LEAVES.....	9		
REQUIRED MATERIALS.....	10		
DEGREE REQUIREMENTS	11		

This catalog is certified to be true and correct
in content and policy as of the date of publication.
June 15, 2013

GRADUATE SCHOOL OF BREATHING SCIENCES
109 EAST 17TH STREET
CHEYENNE, WYOMING 82001
Tel: 307.633.9800 Fax: 866.251.4826
email: info@breathingsciences.org

OVERVIEW

The GRADUATE SCHOOL of BREATHING SCIENCES

**offers a webinar-based Master of
Science in Applied Breathing Sciences**

**for practitioners, consultants, and
educators.**

It is estimated that 10 to 25 percent of the US population suffer the debilitating consequences of dysfunctional breathing habits, a serious problem only superficially addressed by the professional community. Until now, there has been nowhere to go for professionals who want comprehensive training in the various sciences relevant to addressing this enormous problem: physiology, biochemistry, neuroscience, psychology, behavioral science, counseling, and instrumentation technology.

Learn about the physiology and the psychology of breathing from a diverse group of 15 top experts in their respective fields. Learn from and interact with them from your own location, as they present “live” from around the United States (and other countries) while sitting in their own offices. Become an interdisciplinary expert, well versed in the relevant sciences. Learn how to integrate breathing services into your practice, from both professional and business perspectives.

Learn to identify dysfunctional breathing habits that disturb physiology and trigger symptoms and deficits that seriously compromise health and performance. Learn how to identify the factors that trigger and sustain these dysfunctional habits. Help clients to unlearn these habits and to learn new ones that are in concert with healthy self-regulation. Students are colleague professionals; their success with clients means realization of the School mission.

The Graduate School offers a 36 unit trimester MS program, 12 units per trimester, designed to be completed within one year (45 weeks),

but may also be taken on a part time basis. The program consists of 28 one-unit courses: 8 Physiology courses, 8 Psychology courses, 8 Intervention courses, 2 Measurement courses, and 2 Business courses. It also includes 3 one-unit proseminars, 4 units of service practicums to be completed at your own location, and 1 unit of business practicum consisting of the execution of a business plan formulated by you while taking the business courses. All courses are conveniently held on weekends only.

VISION

The Graduate School of Breathing Sciences will be a highly regarded, international, web-based learning center where colleagues from a wide range of professions can learn from faculty and from one another how to help people improve health and performance through the application of behavioral learning principles to physiology.

Student-colleagues will philosophically embrace and practically implement a “client-centered” learning paradigm as the complementary component to the traditional “therapist-centered” treatment paradigm for assisting clients in finding comprehensive solutions to their health-related challenges.

MISSION

Few people, lay or professional, realize that (1) breathing directly regulates body chemistry, including pH and electrolyte balance, (2) dysfunctional breathing can rapidly and profoundly disturb fundamental body biochemistry, (3) chronic dysfunctional breathing habits can directly compromise diverse physiological systems, and (4) breathing is a behavior and as such may become dysfunctional based on the same principles of learning as any other behavior.

Our mission is to bring together these considerations in ways that enable colleague

Goals

professionals, from diverse disciplines, to assist the millions who have unwittingly learned breathing habit patterns that compromise physiology and trigger, perpetuate, and cause symptoms and deficits of all kinds, a problem affecting as many as 60 million or more Americans.

Our mission is to train experienced practitioners and established third-party providers how to design, organize, and implement a program to provide breathing learning services based on the integration of biological and behavioral principles relevant to the self-management of dysfunctional breathing habits, i.e., a client-centered learning paradigm for improving individual health and performance.

GOALS

The Graduate School of Breathing Sciences seeks to:

- provide a comprehensive overview of the practical issues involved in dysfunctional breathing;
- teach responsible solutions to dysfunctional breathing through integration of relevant applied sciences;
- train professionals how to teach self-regulation learning skills to clients with dysfunctional breathing;
- teach self-assessment methods for ongoing improvement of the quality and delivery of learning services to clients;
- educate the public, through its student-colleagues, about dysfunctional breathing and its effects;
- guide professionals in establishing sound business economics for the provision of learning services;
- encourage regular use of validation methods for improving business practices that better serve clients, colleagues, and the community

based on client feedback, changing economic conditions, and evolving technologies;

- prevail upon relevant professions to include breathing learning services within the scope of their practices.

EDUCATIONAL MODEL

The Graduate School of Breathing Sciences subscribes to a colleague model of education, in which both students and professors bring knowledge and experience to share. The model is *active-horizontal* with emphasis on partnership and learning, rather than *passive-vertical* with emphasis on expertise and teaching. Education becomes a two-way enterprise, an essential ingredient to a truly interdisciplinary endeavor.

Students become the cutting edge leaders of an emerging synthesis of practical applications that seeks to address large-scale and demanding challenges related to dysfunctional breathing, while at the same time bringing new thinking and methodology to their own professions. Although student-colleagues are experienced professionals within their own disciplines, the practical challenge of making interdisciplinary science real in the applied sense is not just a matter of education, it is also a matter of economics.

Integrating the related sciences in an ultimately productive manner requires mastery of relevant subject matter combined with responsible entrepreneurship, relevant business knowledge, and effective communication with colleagues and the public. The educational model embraced by the School for its student-colleagues parallels the client-centered learning paradigm that students may ultimately bring to their own clients for overcoming dysfunctional habits through self-regulation thinking.

AUTHORIZATION & ACCREDITATION

The Graduate School of Breathing Sciences is authorized by the Wyoming Department of Education to operate as an educational institution and to grant degrees.

An entity offering higher education degree programs must be either authorized or licensed by a State to legally operate as a college, university, or graduate school and to award degrees.

Registration by the Wyoming Department of Education requires that a school present evidence that it has initiated the required preliminary steps toward becoming an accredited institution and that the school be accredited within five years of the date of its initial registration.

Accrediting agencies are private organizations approved by the federal Department of Education to accredit state authorized or licensed schools offering higher education degrees. A state authorized or licensed school, however, may only be eligible for accreditation once it has awarded degrees and can demonstrate operational stability.

The Graduate School of Breathing Sciences is currently seeking accreditation with an agency recognized by the US Department of Education.

ADMINISTRATION

The Graduate School of Breathing Sciences is located in Cheyenne, Wyoming:

GRADUATE SCHOOL of BREATHING SCIENCES

109 East 17th Street

Cheyenne, Wyoming 82001

Tel: 307.633.9800

Fax: 866.251.4826

email: info@breathingsciences.org

Our dedicated servers are located at a secure network operating center in Casper, Wyoming

with direct access to a major fiber optic trunk facility.

The faculty are located where they live and work, from San Francisco, CA to Beer-Sheva, Israel.

All of the administrative services for the Graduate School are provided by Webinar Education, LLC pursuant to a written agreement.

The primary administrative officers are:

Peter M. Litchfield, Ph.D.

President, Chief Executive Officer

pml@breathingsciences.org

Charles R. Kokesh, MBA, JD

Chief Financial and Administrative Officer

crk@breathingsciences.org

SCHOOL HISTORY

People learn dysfunctional breathing habits that seriously compromise respiratory function and that directly and negatively impact multiple physiological systems. Compromised respiration can rapidly and profoundly result in serious and often debilitating symptoms and deficits, usually mistakenly attributed to other causes by clients, patients, and practitioners.

Dysfunctional breathing habits may have profound immediate and long-term effects that trigger, exacerbate, perpetuate, and/or cause a wide variety of emotional (e.g., anxiety, anger), cognitive (e.g., attention, learning), behavioral (e.g., public speaking, test taking), and physical (e.g., pain, asthma) changes that may seriously impact health and performance.

Up to 25% of the US population may suffer from the effects of learned dysfunctional breathing habits. And, surveys show that 60% or more of the ambulance runs in major US cities may be the consequence of acute symptoms brought on by dysfunctional breathing habits. Although the immensity of this problem is staggering, it has been only superficially addressed.

Learning Platform

Professionals are rarely trained to identify dysfunctional breathing habits and their patterns, much less how to help their clients learn new habits consistent with good physical and mental health. Millions of people worldwide study breathing, but little of what is taught or learned is rooted in the textbook sciences of physiology and psychology. As a result, “breathing practices” are often based on pseudoscience prescriptions, misinformation, misconceptions, and lack of knowledge about the relevant sciences.

The Graduate School of Breathing Sciences was formed in 2012 to provide for a synthesis of the relevant applied sciences, which in the right professional hands can result in highly effective, large scale, practical solutions to the problem. This synthesis is the Master of Science degree in Applied Breathing Sciences, which includes physiology, neuroscience, biochemistry, psychology, behavioral science, counseling, and medical technology. The Graduate School is currently seeking accreditation with an agency recognized by the US Department of Education.

The MS degree training provides for a practical integration of biological and behavioral sciences based on the principles of behavioral analysis and behavior modification and their application to dysfunctional breathing, including its physiology, origins, effects, causes, triggers, sustaining factors, and self-regulation learning solutions.

The MS degree program was designed for professionals most likely to succeed in establishing breathing services within their existing businesses or new parallel businesses specifically organized to offer these services. Students are colleagues, and include healthcare practitioners, human service professionals, athletic/fitness coaches, corporate trainers, educators, performance consultants, breath workers, and others. Comprehensive large-scale solutions are necessarily interdisciplinary.

WEBINAR PLATFORM

The Graduate School of Breathing Sciences maintains a high performance **Webinar Platform** as its real-time learning and communications environment, provided and customized by Cisco’s WebEx Collaboration Service. All courses, proseminars, lectures, meetings, colloquia, and events are presented and coordinated on the Graduate School’s Webinar Platform.

Students and faculty attend courses and proseminars while in their own environments, home or office, where stress and disruption is minimized and comfort is maximized. They have the benefit and the convenience of being immediately able to share their own resources in real time with their colleagues, such as:

- computer and cloud-based files, including documents, articles, and data;
- physical materials, e.g., office environment configurations, books, and objects;
- equipment or instrumentation that can be operated in real time for all to see;
- clients or patients who may volunteer to be interviewed or to participate in a demonstration;
- employees or associates, who may be invited to share questions and comments.

Learning on the Webinar Learning Platform offers many advantages to faculty and students, including:

- Slides, data, documents, articles, and photos can be shared at any time, by anyone.
- Demonstrations, interviews, and physiological monitoring sessions are live for all to see.
- Multiple modes of presentation may be utilized, including whiteboard, PowerPoint slides, and videos.
- Live video of the person speaking is immediate and automatic.
- Live video appears alongside the screen being

shared, e.g., slides, or live physiology.

- Video options provide for full screen displays of the speaker, along with other persons.
- Individualized positioning of webinar functions makes it possible to customize the screen layout.
- Icon feedback is easily provided in real time to faculty, without disrupting the class.
- Questions can be asked by clicking on a “raised hand” icon, and can be answered in the order received.
- Written questions can be asked for all to see using the dynamic chat mode.
- Private messages can be privately communicated from one colleague to another.
- Polling by faculty for student input can be done in real-time at any point in the lecture.
- Students can be divided into breakout groups (or pairs) for practice sessions (therapist and client).
- All lecture sessions are recorded and can be reviewed at any time; sessions may also be recorded by students.

There are surprising benefits that emerge for first time webinar participants, which include:

- Participating in a live webinar is like having a front row seat in class, at all times.
- Seeing people and materials being presented is easier than in a classroom and more personal.
- Observing live demonstrations, interviews, and events is a “bird’s eye” center-stage experience.
- Students ask questions more frequently and more readily; they are generally less inhibited.
- Students are much more inclined to participate actively and to share their own resources.
- Faculty seek student feedback much more frequently and directly than in a conventional lecture environment.

- Communication lines among student-colleagues develop more quickly and more comfortably.
- Group cohesiveness and sense of identity form more easily, effectively, and positively.
- Attending webinars is much less fatiguing and disruptive than physically attending classes.

Investing in the right equipment is an important consideration as follows:

- A widescreen monitor of 20 to 23 inches provides much more than just a larger picture; it permits spreading out webinar functions into convenient locations on the screen.
- Wireless USB headsets make it possible to move around comfortably while listening or speaking during sessions. This reduces stress and allows freedom to stretch, stand up, and find things that may be needed during the lecture.
- A computer with a fast processor and with high-end audio and video cards improves the webinar experience.
- Subscribing to business class Internet will reduce or eliminate problems with garbled audio, slow video frame rates, frozen video, or session bump out.

RESOURCES

The Graduate School of Breathing Sciences provides its students and faculty with a cyber-library including:

- **Journal access:** more than 3,000 on line professional journals, including 2100 health & medical journals and 700 behavioral science & psychology journals;
- **Kindle access:** most of the books that the faculty may require for course reading requirements, including various reference books for general use;
- **Cloud access:** PDF copies of articles that faculty may require or recommend as reading

Resources

assignments;

- **Recordings access:** previous course and proseminar sessions for review by students and faculty;

Students have access to a School internal website based on the *Canvas* learning management system which includes:

- **Course sites:** for assignments, announcements, research updates, articles, contact information, bibliographies, recordings, useful professional materials (e.g., forms), and news;
- **Faculty Member sites:** for obtaining contact information, submitting assignments, taking examinations, getting grade reports, reviewing progress reports, requesting assistance, making appointments, and chatting with a faculty member;
- **Bulletin Boards:** for general announcements and leaving messages for other students;
- **Web forum:** for general discussions by email and live chat;

Students have access to faculty as follows:

- **Course consultation:** Each faculty member is available for two one-hour group sessions on WebEx at a time scheduled by the faculty member for questions about course materials preceding each examination.
- **Program consultation:** Each student is assigned a faculty member as advisor, and may arrange by appointment to meet with their advisors on an as needed basis. On occasion, advisors may require a meeting to discuss performance, participation, or degree completion issues.
- **Independent consultation:** Appointments with faculty may be made at any time, at the discretion of the faculty member, by going to the faculty member's portal on the School's website.

Students have access to School administrators and may make appointments with the following School officers:

Peter M. Litchfield, Ph.D.,
President, Dean of Faculty
email: pml@breathingsciences.org
307.633.9800

Charles R. Kokesch, MBA, JD
Chief Financial Officer, Registrar
email: crk@breathingsciences.org
307. 633.9800

STUDENTS

Students are colleagues, who recognize the importance of bringing breathing services both into their professions and into their own work. They come from a wide range of professions, a diversity that provides the interdisciplinary consciousness fundamental to the success of the program.

In general students are healthcare practitioners, human service professionals, performance consultants, and educators. Examples include: psychologists, physicians, physiotherapists, social workers, counselors, occupational therapists, respiratory therapists, athletic coaches, corporate trainers, fitness trainers, teachers, body workers, and breathwork consultants.

We, the School and its faculty, are successful when students “make real” what they have learned. We seek and invite to apply for admission colleagues who are already successful in their own professional work and in their businesses. They are the ones most likely to bring breathing services to their existing clients and to introduce the services to their community, including their colleagues and new clients who may benefit from the services.

REQUIREMENTS

Admission is based on the likelihood that applicants will be successful offering and providing breathing learning services to their own clients, and/or to the clients of organizations they are employed by or contracted with, ***before actually completing their degrees.***

Successful applicants will be able to demonstrate that they can build on their existing or past professional careers. The program has not been designed for people looking for a new profession.

The minimum admission requirements include the following:

- B.A., B.S., or higher degree (e.g., MSW),
- Undergraduate grade point of 3.0 or higher,
 - or already hold a graduate level degree, e.g., an MA or MS degree
 - or have five years full time experience in current profession, e.g., counseling
- Two years of full time experience in a related field, within the past five years, and
- Basic college chemistry, biology, and psychology or equivalent.

Applicants are expected to demonstrate that they have:

- professional background essential to making effective use of the curriculum,
- academic competence to be successful in completing the coursework,
- access to a professional environment for meeting practicum requirements,
- time and motivation required for completing the required courses and assignments,
- realistic likelihood of making breathing services a business success, and
- financial resources adequate to complete the program.

Applicants should be able to answer “yes” to the following two questions:

- Can I integrate applied breathing sciences into my current work as a professional?
- Can I establish a successful business offering breathing learning services to clients?

Admission Application Fee: \$65.00

Go to www.breathingsciences.org/admission/application.pdf for an online application to be submitted electronically.

Financial Policies

TUITION

Students may attend part time or full time. Part time students must register for at least four units per trimester.

- Students attending full time take 12 units per trimester and are expected to complete the degree in one year (three trimesters).
- Students attending half time take six units per trimester and are expected to complete the degree in two years (six trimesters).
- Students attending a minimum of four units per trimester are expected to complete the degree in three years (nine trimesters).

Per unit tuition: \$500.00

Full time: \$6,000.00 per trimester

Half time: \$3,000.00 per trimester

Minimum time: \$2,000.00 per trimester

Total tuition: \$18,000.00 (\$500 X 36 units)

Upon admission, students are expected to make a 20 percent deposit within 15 days of admission. Full tuition payment is due not later than 15 days before the New Student Orientation date for each trimester.

Students enrolled on a full time basis only may apply to the School's Financial Aid Office to pay tuition in four equal installments of \$1,575.00 due at the beginning of each month in the trimester. All part-time students must pay in full prior to the first day of classes for each course.

TUITION REFUNDS

Tuition is fully refunded if registration is canceled at least 15 days in advance of the New Student Orientation date for each trimester. Tuition is 75 percent refunded if cancelation is before the Orientation date, but after the 15 day cutoff date. Tuition is 50 percent refunded if cancelation is before the end the fourth week

of classes. There are no refunds to students who withdraw after the fourth week of classes.

Refund policies are established in accordance with federal and state regulations and are subject to change at any time as such federal and state regulations are changed. Refunds are determined from the date of official withdrawal or approved leave of absence. Students who withdraw unofficially or at the request of the School are not entitled to refunds.

Refunds for withdrawal from the School will be made only after proper withdrawal forms have been submitted. Forms are available from the Registrar's Office. Failure to properly notify the Dean of Faculty renders the student ineligible for any refund. Full tuition is charged unless the student makes a formal withdrawal. A withdrawal is considered effective when the required forms have been submitted to the Dean of Faculty.

Refunds are payable thirty days after the official date of withdrawal. Students dropped or suspended from the School are not eligible for refunds.

TEXTBOOK FEES

Students taking eight units or more pay \$100.00 per trimester for access and use of Kindle textbooks. Students carrying less than eight units pay \$60.00 per trimester.

SCHOLARSHIPS & FINANCIAL AID

The School currently provides a limited number of direct grant scholarships and student loans based on a combination of need, prior work experience, and demonstrated interest in the field of breathing sciences. Once a student has been admitted to the School, application for a scholarship grant or loan is made in the form of a letter directly to the Chief Financial Officer of the School. The

interest rate on student loans is a variable rate established by the Governing Board of the School.

Once accreditation has been received, the School intends to apply to participate in certain federal programs including those that provide funding for veterans and active duty military personnel who meet the admissions requirements.

FINANCIAL POLICIES

- Enrollment acknowledges all conditions, rules, and regulations and shall be deemed as acceptance thereof.
- Students are not entitled to receive recommendations, degrees, honors or transcripts of credit unless all accounts are current (including outstanding loans).
- At the discretion of the Governing Board of the School, all charges and fees are subject to change on a 30-day notice as evidenced by a change of policy on the School's official web site.
- In the event of default in the payment of any amount due, and if the account is placed in the hands of an agency or attorney for collection or legal action, the student agrees to pay an additional charge equal to the cost of collection including agency and attorney fees and court costs.
- A "Previous Term Billing Charge" in the amount of one percent per month will be added to all student accounts that are delinquent from any previous trimester.

This description represents the entire understanding between the School and the student regarding tuition, refunds, and financial policies and that no written or oral agreement, assumption, or other statement will, in any manner, alter the provisions unless mutually agreed upon in a writing signed by the School and the student.

WITHDRAWAL & LEAVES

Withdrawal

A student who desires to withdraw from the School must submit an official notification to the Dean of Faculty and complete an exit interview with the Dean. A grade of "NC" will be assigned to all pending courses, and such courses will not be used in computing a grade point average. See the Tuition section for financial information and for the policy on refunds. Students that are administratively withdrawn or suspended are not eligible for refunds.

Leave of Absence

A student who needs or desires to take a leave of absence from the School must submit a written request to the Dean of Faculty indicating the reason for the leave. Leaves are normally granted for a trimester but in no case for more than one calendar year. Leaves may be granted at any time. See the Tuition section of this Catalog for financial information and for the policy on refunds. During a student's leave of absence, the School maintains all official records on an active basis. Students returning from an approved leave of absence of one year or less are not required to be formally readmitted. Students will be expected to fulfill the degree requirements that were in effect at the date of their original enrollment. Students who do not return from a leave of absence within one year are withdrawn from the School. To return they must be formally readmitted.

Late Withdrawal for Medical Reasons

A student may request and be considered for a Late Medical Withdrawal when extraordinary circumstances, such as serious illness or injury, prevent a student from continuing classes. This policy covers both physical and mental health difficulties. All requests for withdrawal require thorough, credible, and timely documentation, received within a reasonable time, usually no more than 30 days after the end of the trimester for which the withdrawal is being requested.

Required Materials

The Dean of Faculty determines the appropriateness of the Medical Withdrawal request and the nature and extent of any tuition refund. Appropriate documentation must include a letter signed by the student's treating physician describing the particular circumstances and the medical basis for the recommended withdrawal.

A written request for returning to the program after a medical withdrawal must be accompanied by a treating physician's confirmation that the prior condition no longer prevents the student from resuming normal coursework.

Temporary Absence

No refunds will be made for students who remain away for part of a trimester without officially completing the withdrawal or leave of absence process. No refunds will be made in cases of disciplinary suspension.

REQUIRED MATERIALS

Participation in the MS degree program requires that students have available the proper equipment, instrumentation, supplies, and Internet capability to do their work, as follows:

SERVICES

- High Speed Internet service
 - minimum upload of 1 megabit per second; minimum download of 2 megabits per second
- Skype subscription (free)

COMPUTERS AND ACCESSORIES

- PC running Windows 7 or 8 or Apple Mac (with Windows partition); same computer to be used both for classes and physiological monitoring.
 - laptop or desktop
 - dual core mother board
 - high resolution graphics card
 - high capacity audio card
- Monitor, widescreen for webinar viewing (separate monitor if using laptop)
 - 20 to 23 inches
 - 1024 X 1280 resolution (or better)
- Web Camera
 - 720p or better
 - wide angle
- USB Wireless headset (useable while recharging)
- Standard (wired) headsets (2), non-USB type
- Splitter to be used with the non-USB headsets (for live demonstrations with your clients/volunteers)
- Back-up keyboard and mouse
- Back-up non-USB headset

SOFTWARE

- Microsoft Word, PowerPoint, and Excel
- Adobe Acrobat (version 9.0, or later)

Degree Requirements

- Internet Explorer 9.0, FireFox 18.0, Google Chrome 9.0, Safari 5.0 or higher
- Screen capture software

INSTRUMENTATION*

- Pulse oximeter
- Capnograph
- EMG and HRV
- Disposable incentive spirometers
- Supplies for instrumentation

* The School can obtain substantial discounts on instrumentation for students.

SPECIAL NOTES AND LIMITATIONS

1. The School recommends using a student's own computer for the degree program. If use of an employer's computer and internet access is necessary, prior approval may be required.
2. Since an employer may be running firewall software with restrictions. e.g., on streaming video, your work computer may experience problems accessing the School's webinar courses. The School cannot provide technical support if an employer's firewall is blocking access.

DEGREE REQUIREMENTS

Master of Science Degree in Applied Breathing Sciences

The MS degree in Applied Breathing Sciences is a webinar-based program requiring 36 trimester units that prepares experienced student-colleagues to integrate applied breathing sciences into their existing professions and businesses.

Students may register for four to 12 units per trimester: 12 units per trimester is full time (one year, 3 trimesters), six units per trimester is half time (two years, 6 trimesters), and four units per trimester is minimum time (three years, 9 trimesters).

Students are required to complete the degree requirements in not more than three years. If a student has not completed the requirements within three years, the student will be required to reapply for admission, unless otherwise approved by the Academic Dean. Students do not "flunk out" because of poor grades, but rather "drop out" because of failure to complete requirements within the required time.

The 36 units are broken down as follows: 28 units of coursework, three units of proseminars, and five units of practicums. The coursework includes 28 separate courses (15 hours each), consisting of eight courses in Physiology (Series 100), two courses in Measurement (Series 200), eight courses in Psychology (Series 300), eight courses in Interventions (Series 400), and two courses in Business (Series 500). Courses are held in two one-day sessions, on a Saturday or a Sunday, two weeks apart, to provide time for completing assignments, taking examinations, and reviewing relevant material.

The Proseminars (Series 600) include two units of Case Review and one unit of Business Review. Case Review Proseminars are scheduled six times per trimester (2.5 hours per session), while the Business Review Proseminar is held four times per trimester

Grades / Transcripts

(four hours per session). The Proseminars parallel the Practicums (Series 700), during which time students share their work with faculty and student-colleagues for feedback and guidance.

The Practicums (Series 700) include four units of Service Practicum (200 hours) and one unit of Business Practicum (50 hours); students earn one unit of academic credit for every 50 hours of practicum experience. During their Service Practicums, students provide breathing learning services for their own clients. During the Business Practicum they implement their business and marketing plans, created while taking the required Business courses, in their own professional settings.

DEGREE OBJECTIVES

Upon finishing the MS degree in Applied Breathing Sciences, students are expected to competently deliver breathing learning services to their clients, while at the same time generating a positive cash flow in the breathing business.

Specifically, students are expected to demonstrate their competency by **DOING**...

- behavior analyses
- behavior modification
- behavioral interviewing
- breathing evaluations
- assessment testing
- history taking
- data collection and analysis
- physiological measurement
- dyspnoea assessment
- EMG biofeedback
- capnography biofeedback
- HRV training
- cognitive restructuring
- awareness training
- consciousness exploration

- stress management
- anxiety management
- real-time coaching
- breathing counseling
- client/patient education
- Internet training
- consulting for colleagues
- public education

Students are also expected to demonstrate their competency by **KNOWING** about...

- principles of physiological learning
- organic and behavioral disorders
- acid-base physiology
- external, internal, and cellular respiration
- pulmonary and cardiac anatomy & physiology
- neurophysiology and sleep physiology
- muscle physiology
- stress psychophysiology
- contemporary breathwork

GRADES

Course and test grades will be awarded as follows:

A: Honors, 4 points

B: Pass, 3 points

If a student fails to receive a grade of A or B for a course, for whatever reason (failure to attend, poor test performance, or missing an examination), a “no credit” (NC) indication will appear in the record.

The instructor determines the student’s final grade. If a student receives an NC for non-attendance, the NC is removed once the course requirements (attendance and exams) have been completed during a subsequent trimester. Hours of credit for repeated courses may only be counted once in determining graduation requirements.

If a student receives an NC for an exam, the NC is removed once it has been replaced with an A or a B through makeup work, arranged accordingly with the professor, or is retaken at a subsequent time.

An NC in the record is not used in calculating grade point averages; it simply means “no credit,” regardless of the reason, and is not considered to be a “failing” grade.

Grades for a course are assigned within two weeks of the completion time of a course. Unlike other schools, grades are not assigned only at the end of the trimester.

Official grade reports are sent to students only through their School email account. Only the final grade is recorded on the permanent record. Appeals for grade changes must be filed within 20 calendar days of the issuance of grades and must be done in accordance with the School’s grievance procedures.

TRANSCRIPTS

Requests for transcripts can be made by email with an attached request signed by the student or a fax of a signed request. There is a \$15.00 charge for each transcript. The first official transcript requested after graduation is issued free of charge. Payment for transcripts may be made by check, credit/debit card, PayPal. Checks are to be made payable to the Graduate School of Breathing Sciences.

A written, signed request must be submitted with the following information:

- Full name – including name(s) used when in attendance (if different from current name)
- Current address
- Social security number or student ID number and date of birth (for verification purposes)
- Graduation date or dates of attendance
- Address where the transcript is to be sent
- Contact information (phone and email)
- Physical signature and date of request

SUMMARY

Master of Science Degree in Applied Breathing Sciences

The following is a summary of required Courses, Proseminars, and Practicums:

PHYSIOLOGY

(8 Series 100 courses, for 8 units)

- 101 Pulmonary Anatomy & Physiology
- 102 Cardiac Anatomy & Physiology
- 103 Cellular Respiration
- 104 Muscle Physiology & Breathing
- 105 Acid-Base Regulation
- 106 Cardiac & Pulmonary Diseases
- 107 Neurophysiology & Breathing
- 108 Sleep Physiology & Breathing

MEASUREMENT

(2 Series 200 courses, for 2 units)

- 201 Data Collection & Analysis
- 202 Instrumentation & Measurement

PSYCHOLOGY

(8 Series 300 courses, for 8 units)

- 301 Breathing Science
- 302 Behavioral Physiology
- 303 Behavior Analysis
- 304 Behavioral Counseling
- 305 Stress Psychophysiology
- 306 Behavioral Disorders
- 307 Behavior Therapy
- 308 Cognitive Behavior Modification

INTERVENTIONS

(8 Series 400 courses, for 8 units)

- 401 Biofeedback & Neurofeedback
- 402 Educational Capnography
- 403 EMG, Dyspnea, & Breathing
- 404 Breathing Habit Assessment
- 405 Breathing Habit Modification

Course Requirements

406 Heart Rate Variability & Breathing
407 Survey of Breathing Interventions
408 Consciousness & Breathing

BUSINESS

(2 Series 500 courses, for 2 units)

501 The Business Plan
502 The Marketing Plan

PROSEMINARS

(3 Series 600 proseminars, for 3 units)

601 Case Review: Behavior Analysis
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluations

PRACTICUM

(Series 700 practicums, 5 units, 250 hrs)

701 Practicum: Assessments (100 hours, 2 units)
702 Practicum: Coaching (100 hours, 2 units)
703 Practicum: Business (50 hours, 1 unit)

The following is the required sequencing of Courses, Proseminars, and Practicums:

Trimester ONE

(12 units)

301 Breathing Science
302 Behavioral Physiology
101 Pulmonary Anatomy & Physiology
102 Cardiac Anatomy & Physiology
103 Cellular Respiration
104 Muscle Physiology & Breathing
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography

Trimester TWO

(12 units)

403 EMG, Dysponesis, & Breathing
404 Breathing Habit Evaluation
305 Stress Psychophysiology
107 Neurophysiology & Breathing
306 Behavioral Disorders
307 Behavior Therapy
308 Cognitive Behavior Modification
501 The Business Plan
502 The Marketing Plan
601 Case Review: Behavioral Analysis
701 Practicum: Assessments (2 units, 100 hours)

Trimester THREE

(12 units)

405 Breathing Habit Modification
201 Data Collection & Analysis
202 Instrumentation & Measurement
108 Sleep Physiology & Breathing
406 Heart Rate Variability & Breathing
407 Survey of Breathing Interventions
408 Consciousness & Breathing
602 Case Review: Behavior Modification
702 Practicum: Coaching (2 units, 100 hours)
603 Business Review: Plan Evaluations
703 Practicum: Business (1 unit, 50 hours)

COURSE REQUIREMENTS

Grading for courses is based on two requirements: (1) interactive attendance and active participation, and (2) completion of two examinations.

1. Attendance: Taking courses at the Graduate School of Breathing Sciences is about sharing knowledge and experience with colleagues, including other students and faculty. Attendance provides a fundamental and indispensable context for communication, a kind of experiential education that is difficult to objectively assess.

COURSES

Live attendance of all courses is required. Listening to session recordings for session review purposes will not meet the attendance requirement. Live participation among student-colleagues, as well as among professors and students, is considered to be a key learning component of coursework. In addition to live interaction, there is ongoing live polling of students, including comments, questions, opinions, suggestions, and general feedback from student-colleagues.

If a student misses more than one hour and up to half the hours of a course, the student is required to listen to the course recordings and to obtain a grade of “A” on at least one of the course examinations to receive credit for the course (a grade of “B”), and a grade of “A” on both examinations to receive a grade of “A”. If more than half the hours of a course are missed, the student will not receive credit.

Failure to attend classes will NOT result in students being dropped or withdrawn.

2. Examinations: Each course (one unit, 15 hours of class time) is scheduled as two one-day sessions, two Saturdays or two Sundays, usually two weeks apart. There will be TWO exams given for each course, the first one on the Wednesday or Thursday immediately preceding the second session, and the second one on the Wednesday or Thursday immediately following the final session. Each examination is scheduled for two hours and is not taken during class time.

All examinations are “open book,” and consist of 10 to 20 short answer essay questions that in most cases emphasize concepts, principles, and critical thinking. The examinations are electronically completed PDF or HTML files emailed to each student at the scheduled time, completed online in the spaces provided on the form, and then uploaded to the inbox of the professor within the allotted time. Exam questions are scored 0, 1, 2, 3, or 4 points and are averaged with other questions to give a total score; to receive credit for a course, the score must be at least 3.0 (B) on BOTH examinations.

The coursework includes 28 separate courses (15 hours each), consisting of eight courses in Physiology (Series 100), two courses in Measurement (Series 200), eight courses in Psychology (Series 300), eight courses in Interventions (Series 400), and two courses in Business (Series 500). Courses are held in two one-day sessions, on a Saturday or a Sunday, two weeks apart, to provide time for completing assignments, taking examinations, and reviewing relevant material.

PHYSIOLOGY

(8 Series 100 Courses, for 8 units)

101 Pulmonary Anatomy and Physiology

Proper functioning of the respiratory system is essential for bringing oxygen into the body for metabolism and excreting or utilizing the byproducts of cellular respiration, e.g. CO₂. This course includes: **Anatomy of the pulmonary system** - the lungs, airways, pulmonary arteries, veins and bronchial arteries; **Histology of the lungs** - with emphasis alveolar, bronchial network; **Physiology of the pulmonary system** - including **Mechanics of breathing** - how air enters and is expelled from the lungs; **Lung Volumes** and their significance; **Alveolar respiration** - how gas exchange occurs; **Ventilation and perfusion** - ratios and pulmonary circulation; **Cellular respiration** - how cells utilize O₂; **Central control** - neuronal mechanisms; **Blood gases** - how they are derived and what they mean.

102 Cardiac Anatomy and Physiology

The Cardiovascular system is essential for life. **PART 1** of this course includes: **Anatomy of the Heart** - gross and microscopic; **Cardiac conduction system** - the electrical system that controls the heart rhythm; **External nervous system** - influences on the heart; **Peripheral vascular system** - arteries, veins and lymphatic systems; **PART 2** of this course will demonstrate how the anatomy enables function of the heart, including: **Heart as a**

Course Descriptions

pump - the cardiac cycle, cardiac metabolism, electrical conduction, and control of the cardiac cycle; **EKG's** - the electrical signals generated by the heart; **Cardiac output** - the volume of blood pumped, how it is measured, and what influences it; **Arrhythmias** - abnormalities of conduction; and **Cardiac diseases**.

103 Cellular Respiration

Breathing is the basis for cellular respiration, a process that generates ATP, molecules that when broken down provide the energy required for cellular life. Almost all other body functions flow as a result of fulfilling the fundamental directive of oxygenating cells that constitute the structural and functional units of the organism. The following concepts will be presented: (1) The body plan - parenchyma (cellular) vs. stroma (connective tissue), blood vasculature, endothelial cell function; (2) Organelles and cell structure - mitochondria, membranes and associated receptors and molecules; (3) The chemistry of metabolism and production of energy - aerobic (the tricarboxylic acid cycle) vs. anaerobic metabolism (Emden-Meyerhof Pathway); (4) Nutritional supplements - free radicals, antioxidants, anti-inflammatories; and (5) Gas exchange at the membrane level.

104 Muscle Physiology and Breathing

Breathing serves respiration when muscles that regulate inhalation and exhalation are in concert with respiratory reflexes. These muscles must be balanced for normal respiration to occur and can be easily influenced by injury, pain and emotion. This course includes: **Muscle anatomy** - cellular physiology, gross anatomy, myofascial relationships; **Physiology** - aerobic and anaerobic metabolism, response to hypocapnia; **Innervation** - specific muscles used for breathing, situations that impact recruitment and mechanics; **Pathomechanics** - indicators of poor mechanics, effects on breathing when chest wall mechanics are altered through injury, posture, or habit, and when muscle timing and recruitment is negatively affected; **Response to exercise** - how breathing pattern changes to accommodate increased metabolic demands during exercise,

optimizing the aerobic envelope during endurance exercise, impact of overtraining on breathing, relevance of breathing to optimal performance in sport.

105 Acid-Base Regulation

Enzymatic reactions essential to body functioning require pH to be within specific and narrow limits. This course will cover: **pH** - how it is derived; **Acid and Bases** - definitions, the Henderson-Hasselbach equation as it is used to determine extracellular pH; **Buffers** - their definition, their roles; **Buffer systems** - protein, intracellular bone, bicarbonate, hemoglobin, and phosphate buffer systems; **Bicarbonate buffer system** - the conversion of carbonic acid to bicarbonate, the role of CO₂; **Kidney physiology** - how the kidneys and lungs work together to maintain pH; **Respiratory pH regulation** - the role of breathing in causing electrolyte imbalances and in restoring pH balance; **Oxyhemoglobin dissociation curve** - what is it, how is it influenced, and what does it mean about O₂ delivery? **Alkalemia and acidemia** - metabolic and respiratory, how they occur.

106 Cardiac & Pulmonary Diseases

Assisting people with dysfunctional breathing often means working with clients suffering with cardiovascular and/or pulmonary disease. These systems are intimately connected and disease in one system may dramatically affect the other. This course includes: **Cardiovascular disease** - signs, symptoms, causes; **Making referrals** - signs of a cardiovascular emergency; **Heart failure** - pathophysiology, origins, stages; **Cardiac arrhythmias** - symptoms, diagnosis, ventricular, atrial and life threatening arrhythmias; **Hypertension** - systemic and pulmonary; **Coronary Artery Disease** - angina, myocardial infarction; **Other heart diseases** - valvular heart disease, aortic, peripheral vascular disease, pericarditis, pulmonary embolism; **Pulmonary Disease** - pulmonary function testing- patterns; **Pulmonary edema** - origin, diagnosis, treatment; **Airway diseases** - asthma, COPD-peripheral airway disease, emphysema, cystic fibrosis, bronchiectasis,

alveolar disease, lung cancer; **Interstitial lung diseases** - occupational diseases, physical and chemical injury, infectious diseases of the lung, sarcoidosis; **Pulmonary embolism** - manifestations, causes, treatments; **Diseases of the pleura, chest wall, mediastinum, and diaphragm** - origins and effects.

107 Neurophysiology and Breathing

The interaction of “breathing for respiration” with other demands on the respiratory system, both physiological and psychological, involve complex Central Nervous System and Peripheral Nervous System activities, conscious and unconscious. Despite the normally reflexive nature of respiration, neuronal function represents the nexus where learned breathing patterns interact with innate rhythms. This course includes: (1) Nervous system structure and function - the Central, Peripheral, and Autonomic Nervous Systems; (2) Integration of respiratory centers with the autonomic nervous system; (3) Chemoreceptors and other sensory elements sensitive to changes of pH and gases; (4) Neurotransmitters, including nitric oxide; (5) Innervation of respiratory muscles by neurons from the connectome of the ventrolateral medulla (VLM) system for respiratory rhythms - breathing centers and other circuits; and (6) Neuroendocrine interactions - hormonal influences that impact respiratory function.

108 Sleep Physiology and Breathing

What is sleep - sleep stages, sleep cycle by age and gender; **Sleep careers** - sleep doctors, dentists, techs; **Sleep regulators** - homeostasis, circadian, adaptive, sleep wake neurotransmitters; **Why we sleep** - sleep needs, sleep deprivation effects; **What happens during sleep** - physiological changes; **Sleep and breathing** - anatomy of airways and sleep; **Sleep disorders** - ICSD-2 classification; **Insomnia** - types, sleeping pills, alcohol, CBTi; **Sleep related breathing disorders** - snoring, apneas, hypoventilation, sleep study, CPAP, oral appliances; **Hypersomnia** - Fatigue vs. sleepiness, Epworth scale, narcolepsy; **Circadian disorders** - delayed sleep phase, shift work, jet lag; **Parasomnias** - sleep walk,

nightmares, anxiety, panic attacks; **Sleep related movement disorders** - RLS, PLMD, bruxism, catathrenia.

MEASUREMENT

(2 Series 200 Courses, for 2 units)

201 Data Collection & Analysis

Effective communication with clients and colleagues about the outcomes and efficacy of professional work is basic to a successful practice and is good business. It means effective record keeping and useful data collection, while protecting the privacy of clients. What data should a practitioner collect, how should they be collected, how should they be interpreted, and how can they be shared effectively with colleagues and the public? The course includes: **Review** - how data review makes for better services; **Collection** - how to collect data, how to interpret data, how to uncover hidden patterns; **Planning** - defining objectives, minimizing problems, managing conditions to maximize outcomes, avoiding faulty data collection that makes analysis difficult and/or useless; **Collaboration** - how to share and discuss your data with patients and colleagues.

202 Instrumentation & Measurement

Technology for measurement of static and dynamic parameters of both respiratory physiology and breathing behavior; make for objective evaluation of dysfunctional breathing and the outcomes of self-regulation interventions. This course includes: **Principles** - basic hardware physics, measurable physiological parameters, clinical applications, and educational applications; **Measurement** - respired volumes, ventilatory volumes, ventilatory capacity, respiratory muscles, metabolism, PO_2 , SaO_2 , SpO_2 , $PaCO_2$, $HbCO_2$, HHb, $ETCO_2$, pH, and electrolytes; **Instrumentation** - capnometry, pH meters, spirometry, strain gauges, thermistors, thermocouples, CO-oximetry, pulse oximetry, brain oximeters, pneumotachography, polarography, respirometers, impedance pneumography, electromyography

Course Descriptions

(EMG), calorimetry, amplifiers, and electrodes; **Precautions** - measurement misunderstandings, data misinterpretations, instrumentation limitations, and error analysis.

PSYCHOLOGY

(8 Series 300 Courses, for 8 units)

301 Breathing Science

Breathing is behavioral and respiration is reflexive. Breathing behavior is subject to the basic principles of learning that govern self-regulation, including motivation, attention, memory, emotion, and cognition. Applied breathing science is about the role of these principles in the acquisition of breathing habit patterns and their effects on health and performance, that is, the practical integration of respiratory physiology with breathing psychology. This course will provide an overview of the relevant sciences, as follows: **Physiology** - pulmonary anatomy, cellular respiration, internal respiration, external respiration, muscle physiology, neurophysiology, pulmonary diseases; **Psychology** - behavioral analysis, behavior modification, cognitive learning, interviewing, stress psychophysiology, behavioral disorders; **Interventions** - educational capnography, EMG biofeedback, HRV training, behavioral counseling, awareness training, habit assessment, habit modification, measurement instrumentation.

302 Behavioral Physiology

Physiology is smart. It is motivated and reconfigures itself through learning. Included in this course are: the **Anatomy of behavior** - bits and wholes; **Self-regulation learning** - intelligent homeostasis and meaning; **Behavioral genetics** - learning probabilities, epigenetics, natural self-selection; **Perceptual learning** - internal and external "realities;" **Biological learning** - with and without a nervous system; **Learned responses** - autonomic, somatic, and central; **Behavioral triggers** - stimuli, contexts, and states; **Kinds of learning** - classical, operant, cognitive;

Biological reconfiguration - mediated and direct; **Dysfunctional learning** - same principles, different configurations; **Placebo effects** - symptoms and relief; **Cases** - breathing and respiration.

303 Behavior Analysis

Behavior analysis provides the basis for identifying dysfunctional habits, and their histories, triggers, motivations, and reinforcements. It means addressing learning excesses and deficits with the basic principles of the major learning paradigms: **Respondent, or classical conditioning**- understanding the nature of reflexive behavior and the importance of temporal contiguity; **Operant, or instrumental conditioning** - the effects of the application or removal of consequences on learning; and the combination of the two to establish a **functional assessment of behavior** - the ways in which behaviors function to alter the environment of an individual with a particular problem. In addition, the course will focus on **single subject experimental designs** - ABAB reversal/withdrawal designs, and **multiple baseline designs** across participants, settings, and behaviors.

304 Behavioral Counseling

Interviewing is fundamental to self-discovery by clients. This course will cover the basic tenants and techniques in behavioral counseling, including: **Establishing the teaching/learning alliance** - basic listening skills, empathy, clarification, non-judgmental listening; **Behavioral interviewing** - choosing and operationally defining target behaviors, and getting a history of the particular learning deficit(s) or excess(es); **Behavioral assessment** - developing hypotheses about the function of excesses and deficits, and identifying factors that trigger and sustain dysfunctional habits; **Developing a learning plan** - developing the therapeutic contract, enhancing compliance, and choosing the most effective techniques to produce the desired outcome; and **Behavioral evaluation** - devising an appropriate data system to evaluate overall effectiveness of the learning plan.

305 Stress Psychophysiology

In emergencies, physical or psychological, our dependence on optimal cardiopulmonary function can be vital to short term survival. In the long term, our learned physiological and psychological responses to stress, such as breathing, may have profound effects on health and performance. This course includes: (1) The CNS as the neural substrate for stress - Papez circuit, limbic system, amygdala; (2) Features and functions of the sympathetic and parasympathetic divisions of the ANS; (3) Emotions - physiological correlates and respiratory concomitants; (4) Drugs of abuse and breathing; (5) Biometric ANS relationships, e.g., GSR and HRV and autonomic balancing processes that involve breathing, e.g., meditation, yogic pranayama, tai chi, and qigong; (6) Endocrine considerations - behavioral and hormonal factors; and (7) Consequences of stressful conditions, e.g., chronic fatigue, chronic stress, fibromyalgia, depression, learned helplessness, and PTSD.

306 Behavioral Disorders

Recognizing signs of compromised psychological health is fundamental to effectively assisting clients learn new breathing habits. This course will present a contemporary behavioral model, based on **Rational Frame Theory**, of conceptualizing, assessing, and treating psychological disorders. Special attention will be paid to emotional and somatic disorders commonly seen among people suffering with dysfunctional breathing habits, e.g., anxiety, panic, phobia, anger, chronic pain, chronic stress, depression, dissociation, trauma, attention (ADD, ADHD), learning disabilities, and performance deficits. These disorders will be conceptualized from a learning analysis perspective and its implications for therapy and behavior change explained. Other disorders will be briefly reviewed from the same perspective, including: addictions, obsessive-compulsive disorder, personality disorders, psychotic disorders, sexual disorders, eating disorders, and attachment disorders.

307 Behavior Therapy

Learning self-management strategies is fundamental to overcoming dysfunctional breathing habits. Behavior modification is about the implementation of operant and respondent conditioning techniques for the extinction of dysfunctional habits and the acquisition of new more functional ones. Techniques to be covered include systematic desensitization, shaping and reinforcement, generalized conditioned reinforcers, punishment, extinction, time out, response cost, fading and leaning, procedures to enhance generalization, and ways to address cognitive distortions. Combinations of these techniques will also be covered, including assertion training, social skills training, and relapse prevention. A survey of many of the classic studies in behavior modification with children and adults will be reviewed, such as: learning disabilities, ADHD, anxiety, schizophrenia, problem solving, depression, aggression, and academic/learning deficiencies.

308 Cognitive Behavior Modification

Thinking habits, belief systems, and personal interpretations play a major role in triggering and perpetuating dysfunctional breathing. This course addresses the relationship of behavior with automatic thoughts. It provides an overview of the structure of the assessment session and the fundamental elements of formulating a learning plan. It includes: **Cognitive and behavioral triggers** - identifying specific places, times, tasks, people, and emotional states that engage dysfunctional habits; **Motivation and reinforcement** - emotions, self-esteem, sense of control, primary and secondary gain; **Mediated effects** - associated physiological & psychological symptoms/deficits; **Cognition** - thinking styles, belief systems and personal interpretations of circumstances and behaviors; **Techniques** - assertiveness skills, relaxation skills, thought monitoring, comprehensive cognitive restructuring, behavioral activation.

Course Descriptions

INTERVENTIONS

(8 Series 400 Courses, for 8 units)

401 Biofeedback and Neurofeedback

Feedback is a fundamental learning principle. Biofeedback is about identifying habits and learning new ones that regulate basic physiology, habits that may compromise or enhance human health and performance.

Feedback modalities - brain waves (EEG), muscles (EMG), temperature, skin response (GSR), blood pressure (BP), heart rate (HR), heart rate variability (HRV), respiration (RESP), carbon dioxide (PCO₂); **Electronics & software** - hardware, feedback displays, feedback controls, data acquisition; **Applications** - psychotherapy, physiotherapy, medicine, education, sports; **Autonomic regulation** - fight & flight, vascular, cardiovascular, pulmonary, gastric, systemic; **Somatic regulation** - dysponesis, muscle pain, muscle dysfunction, headache; **Central regulation** - attention, anxiety, anger, stress, mood, consciousness; **Protocols** - learning vs. treatment, mediated vs. direct regulation, autonomic regulation, generalization of learning, case studies.

402 Educational Capnography

Capnography, measurement of partial pressure carbon dioxide (PCO₂) in the lungs and in the blood, uniquely provides a real-time window for identifying dysfunctional breathing and then assisting clients overcome self-defeating habits. Are learned breathing patterns in concert with optimal respiration, e.g., pH regulation and oxygen transport? This course includes: **Measurement** - blood gases, capnographic measurement parameters, artifacts, data misinterpretation, ventilation/perfusion mismatch, instrumentation (ETCO₂, PACO₂, PaCO₂); **Medical capnography** - anesthesia, mechanical ventilation, sleep, acid-base assessment, CO₂ pathophysiology; **Physiology** - gas exchange, transport of CO₂, effects of CO₂ on physiology; CO₂ regulation at altitude; **Oxygen** - PaO₂, SaO₂, O₂ content, hemoglobin; **Educational capnography** - parameters of interest (e.g., aborted breaths), behavioral assessment (e.g., overbreathing),

CO₂ biofeedback (e.g., negative practice, desensitization), self-regulation learning, trigger testing (e.g., deliberate hypocapnia), group work, real-time coaching, data interpretation.

403 EMG, Dysponesis, & Breathing

Dysfunctional breathing habits not only compromise respiratory physiology, but they frequently have direct, immediate, and profound effects on other physiological systems, especially the musculoskeletal system:

Dysponesis - misplaced muscle effort, e.g., bracing with the jaw while inhaling; **Functional disorders** - identifying dysponesis with symptoms like headaches, visual disturbances, dizziness, nausea, unstable gait, coughing, intestinal upset; **Origins** - understanding how repetitive patterns of misplaced effort become dysponetic habits; **Conditioning** - approaching dysponesis as a conditioned flexor-withdrawal response to painful stimuli; **Trigger points** - development of painful knots of muscle in muscle groups that “splint” the injured area; **EMG biofeedback** - the role of relaxing unrelated muscle groups; **Chronic dysfunctional breathing habit retraining** - reversing abnormal EMG patterns in breathing accessory muscles, due to dysponetic postural adaption; **Integrated approaches**.

404 Breathing Habit Assessment

Dysfunctional behaviors - identifying specific behaviors that compromise physiology; **Learning history** - pinpointing the evolution of vicious circle learning patterns; **Behavioral Triggers** - identifying specific places, times, tasks, people, & states that engage dysfunctional habits; **Motivation & reinforcement** - emotions, self-esteem, sense of control, dissociation, secondary gain; **Mediated effects** - associated physiological & psychological symptoms/deficits; **Cognition** - belief systems, personal interpretation of symptoms; **Information gathering** - history taking, behavioral checklists, symptom checklists, breathing interview, phenomenological exploration, psychophysiological testing, breathing mechanics analysis; **Guided exploration** - intentional manipulation,

memory & imagery challenges, en vivo testing, breathing mechanics challenges, negative practice, overbreathing, anaerobic testing; **Types of evaluation** - short form, long form, guidelines for referrals by colleagues.

405 Breathing Habit Modification

Habit modification is client-centered, not treatment oriented. **Objective** - learning new unconscious breathing habits vs. imposing conscious breathing exercises; **Crisis interventions** - breathing techniques, cognition, band aids devices; **Cognitive learning** - new thoughts, new interpretations of symptoms, new understandings; **Desensitization** - of conditioned emotional & motivational responses associated with breathing mechanics & breathing mediated symptoms; **Extinction** - removal of reinforcements for dysfunctional habits, reinforcement for adaptive competing responses, deactivating behavioral triggers; **Negative practice** - intentional engagement of dysfunctional habits, e.g., chest breathing; **Reinforcements** - establishing new reinforcements, changing behavioral preferences; **New Habits** - allowing for respiratory reflexes (trust), diaphragmatic breathing, quiet breathing; **Biofeedback** - EMG and CO₂ feedback; **Generalization** - learning in the field.

406 Heart Rate Variability and Breathing

Heart rate and breathing are inextricably related. The variability of heart rate (HRV) and its patterns reflect states of emotion, arousal, and health. Included in this course are: **HRV physiology** - cardiac inputs and outputs, myths about heart rate, HRV as a measure of health and conditioning, effects of stress, and demographic differences; **HRV measurement** - specific frequencies and spectral analysis of multiple frequencies; **HRV and emotions** - coherence, resonant frequency, and breathing; **HRV assessment** - research findings; breathing (capnography) and HRV monitoring; **HRV flexibility training** - optimizing autonomic balance for emotional self-regulation, health risk reduction, and performance enhancement.

407 Survey of Breathing Interventions

This course will describe a number of programs, techniques, and approaches to changing breathing patterns. Instructing individuals to modify their breathing in order to improve some mental or physical condition is popular among those engaged in human services, but there is some lack of agreement among the myriad methods, and the basic science underlying breathing regulation is often neglected. Breathing is probably the biologic function most alterable by conscious intent and this leverage over deeper body processes offers access to change of many kinds. Techniques such as yoga, bioenergetics, holotropic breathing, Gindler, biofeedback, Buteyko, Reichian, respiratory therapy, diaphragmatic breathing, and rebirthing will be described as to their methods, goals, and (where available) supportive research.

408 Consciousness & Breathing

Conscious breathing, also known as breath awareness, provides an intimate pathway into ourselves. Breath awareness will be practiced as an overall work in meditative, somatic and therapeutic disciplines' for health, self-discovery and self-transformation. Self-awareness and conscious breathing are the keys to integral change for health, well-being and living a life that is authentic. In this class students will learn to identify their own habits of mind that shape the lens through which they view themselves and the world. The course will provide students with a key element for successful partnering with clients to overcome dysfunctional breathing habits: opportunities to expand understandings of their own relationships with colleagues, clients, and themselves.

BUSINESS

(2 Series 500 Courses, for 2 units)

501 Business Plan

Students will develop a working business plan tailored to the services offered to their clients. Each of the major components of creative business planning will be reviewed

Practicums

and discussed, including goals and objectives, legal structure, tax and regulatory issues, a description of services and their evolution over time, pricing, an initial marketing plan supported by market research and competitive analysis, financial requirements, and a financial plan complete with operating budget, cash flow, and income projections. Students will learn which aspects of their business plans are most important to specific audiences, and how then to continuously update their plans based on changing circumstances. The feedback and contributions from student colleagues will be an invaluable part of the learning process.

502 Marketing Plan

Traditional marketing concepts will be explored in the context of working with clients who have dysfunctional breathing and developing an understanding of a service / market fit and how well services offered match market needs. Using clinical examples, we will study the key differences between educating vs. treating clients. The role of marketing materials including brochures and promotional materials will be covered as well as the role of cross-selling. Students will experience the importance of launching a Minimum Viable Service (MVS) and conducting ongoing testing to validate both the services offered and the methods for reaching prospective clients. Validation techniques will include client interviews, A/B testing, feedback forms, surveys, and other methods. The end result will be both a marketing plan and a business model for continuous service improvement based on client satisfaction.

PROSEMINARS

The Proseminars (Series 600) include two units of Case Review and one unit of Business Review. Case Review Proseminars are scheduled six times per trimester (2.5 hours per session), while the Business Review Proseminar is held four times per trimester (four hours per session). The Proseminars parallel the Practicums (Series 700), during

which time students share their work with faculty and colleague-students for feedback and guidance.

601 Case Review: Behavioral Analysis

This Behavioral Analysis proseminar parallels the 701 Practicum, to be completed by students in their own professional environments. Students meet in groups of ten, for six 2.5 hour sessions, to present their challenging cases. Each student is expected to record four behavioral analyses with clients during the first half of the second trimester and to present them during the proseminar to be conducted during the second half of the trimester. Students send their recording files to the other students and to the proseminar leader for their review, in advance of the next scheduled proseminar session.

602 Case Review: Behavior Modification

This Behavior Modification proseminar parallels the 703 Practicum, to be completed by students in their own professional environments. Students meet in groups of ten, for six 2.5 hour sessions, to present their challenging cases. Each student is expected to record four behavioral learning sessions with clients during the first half of the second trimester and to present them during the proseminar to be conducted during the second half of the trimester. Students send their recording files to the other students and to the proseminar leader for their review, in advance of the next scheduled proseminar session.

603 Business Review: Plan Evaluations

The business plans, marketing plans, and any marketing materials previously prepared by students while taking the business courses, along with any interim results concerning the implementation of their plans, will be circulated among eight to ten colleague students. Over the course of four three-hour sessions, each student will have the opportunity to present the details of their plan, to answer questions from the seminar participants, and to obtain feedback from the seminar leader and colleague students. In subsequent sessions, students will discuss the

ongoing results of the implementation of their plans, along with proposed revisions based on peer feedback, client feedback, and economic outcomes.

PRACTICUMS

The Practicums (Series 700) include four units of Service Practicum (200 hours) and one unit of Business Practicum (50 hours); students earn one unit of academic credit for every 50 hours of practicum experience. During their Service Practicums, students provide breathing learning services for their own clients, while during the Business Practicum they implement their business and marketing plans, created while taking the required Business courses, in their own professional settings.

701 Practicum: Assessments (2 units, 100 hours)

The Assessment Practicum includes completion of 25 behavioral analyses, each case to be written in the standardized format to be provided by the School. Four sessions are recorded and then presented for review during the Case Review Proseminar. Assessments should include the Personal History Questionnaire, the Breathing Interview Checklist, the Behavioral Observations Checklist, and the Breathing Interview Report. Required instrumentation for recording during these sessions includes capnography, electromyography, and heart rate variability; data should be recorded for presentation with each case report. The work is expected to require about four hours per case, for a total of 100 hours. At the end of the trimester, students are required to complete an online pdf document which interviews them regarding their practicum experience.

702 Practicum: Coaching (2 units, 100 hours)

The Coaching Practicum includes completion of 50 learning sessions, each case to be written in the standardized format to be provided by the School. Four client sessions are recorded

and then presented for review during the Case Review Proseminar. Learning sessions should each include the Breathing Coaching Report. Required instrumentation for recording during these sessions includes capnography, electromyography, and heart rate variability; data should be recorded for presentation with each case report. The work is expected to require about two hours per case, for a total of 100 hours. At the end of the trimester, students are required to complete an online pdf document which interviews them regarding their practicum experience.

703 Practicum: Business (1 unit, 50 hours)

During the 50-hour Business Practicum students are required to prepare for review (1) a market survey of prospective clients using traditional market research methods, (2) a client feedback survey to be administered to at least ten breathing service clients, (3) an initial draft of marketing materials directed to the student's already existing customer base, and (4) an updated set of cash flow projections, near the end of the trimester, for the student's business plan. Students will also complete an online interview form regarding their practicum experience and its business and marketing implications. Are they effectively providing valuable services to their existing client base? And, are they effectively communicating to colleagues and to the public regarding their new services? Progress is reviewed by faculty and colleague-students during the Business Review Proseminar.

Course Prerequisites

COURSE SCHEDULING

All courses and proseminars are held on weekends, Saturdays and Sundays. All courses are one-unit courses with 15 class-time hours. Each course is divided into two 1-day sessions, and each session is scheduled two weeks apart on two Saturdays OR on two Sundays. Each of the two 1-day sessions is 7.5 hours, with a scheduled one-hour break: 09:00-12:30, 13:30-17:30. Other breaks are at the discretion of faculty.

Scheduling coursework is flexible. Students may take any number of units, ranging from four to 12 per trimester. We recommend that courses be taken in the suggested sequence, although part time students make take courses in a sequence convenient to their own busy work schedules; some courses, however, require prerequisites, as shown below. This flexibility means that part time students can:

- (1) spread out their course schedule and arrange it in a more evenly distributed manner, rather than taking courses in concentrated clumps as would be required if following the recommended sequence,
- (2) free up specific Saturdays or Sundays for other important commitments, and
- (3) take a variable number of courses per trimester based on professional workload or other considerations, e.g., switch from six units in a trimester to nine in the next.

Note that students may miss up to a full day of attendance in each course, which is then made up by listening to the recording of the course time missed; see “Grades” for a full description of attendance requirements.

Course Prerequisites:

All students are required to take Breathing Science 301 and Behavioral Physiology 302 before taking other courses. Part time students who are NOT taking courses in the recommended sequence, need to take special note that the following courses have additional prerequisites as indicated:

Physiology

106 Cardiac and Pulmonary Diseases: 101, 102

108 Sleep Physiology and Breathing: 107

Measurement

201 Data Collection & Analysis: 303, 401

202 Instrumentation and Measurement: 101

Psychology

305 Stress Psychophysiology: 107

307 Behavior Therapy: 303

Interventions

402 Educational Capnography: 105

403 EMG, Dyspnea, & Breathing: 104, 401

404 Breathing Habit Assessment: 303

405 Breathing Habit Modification: 307, 401

406 Heart Rate Variability and Breathing: 102, 401

Business

502 The Marketing Plan: 501

Proseminars and Practicums

601 in parallel with 701: 404

602 in parallel with 702: 405

603 in parallel with 703: 501, 502

FACULTY

PROFESSORS

Naras Bhat, M.D., physician, cardiologist
Alex Gersten, Ph.D., physicist, mathematician
Chris Gilbert, Ph.D., clinical psychologist
Robert Grove, Ph.D., medical psychologist
Maria Katsamani, Psy.D., clinical psychologist
Charles Kokesh, MBA, J.D., business consultant
Marla Kokesh, M.D., physician, psychiatrist
Gerald P. Kozlowski, Ph.D., physiologist
Peter M. Litchfield, Ph.D., behavioral physiologist
Laurie McLaughlin, D.Sc., physiotherapist
Jan Newman, M.D., physician, surgeon
Sandra Reamer, MFA, breathing consultant
George vonBozzay, Ph.D. psychophysiologist
Robert P. Whitehouse, Ed.D., clinical psychologist
Steven Zlutnick, Ph.D., professor of psychology

Naras Bhat, M.D.

Dr. Bhat earned his M.D. degree from the Institute of Medical Sciences at Banaras Hindu University (India) in 1969. He completed his Internship at Loyola University at St. Joseph Hospital (Chicago) in 1971, and his Residency in Internal Medicine at Charity Hospital at Louisiana State University in 1973. He completed a fellowship in allergy and immunology (1973-1975) and served as a medical researcher associate (1974-1975) in immunology, at Scripps Clinic and Research Foundation (La Jolla CA). He received advanced training in Bariatric Medicine during 2006-2009, and in Sleep Medicine during 2008-2010. His Board certifications include: Internal Medicine, Allergy and Immunology, Sleep Medicine, Stress Management Education, Advanced Metabolic Cardiology, and Bariatric Medicine (weight control).

Dr. Bhat has won many professional honor awards, has published numerous articles and books in his areas of expertise, has appeared on numerous media shows (e.g., CBS TV), and has made hundreds of presentations, including

lectures, workshops, courses, and seminars for healthcare practitioners worldwide. He is widely recognized for his work in behavioral medicine, which includes his expertise on the subjects of sleep disorders, weight control, stress & burnout management, anger & anxiety self-regulation, and the psychophysiology of heart disease. Dr. Bhat is the founder of the Allergy and Weight Clinic (1976) and the Concord Sleep Clinic (2007) in Concord CA. He serves as Medical Director of both clinics and has been practicing and teaching integrative medicine since 1976.

Alexander Gersten, Ph.D.

Dr. Gersten earned his Ph.D in theoretical physics from the Weizmann Institute of Science (Rehovot, Israel) in 1967 and his M.Sc. degree in experimental physics from the Hebrew University (Jerusalem, Israel) in 1962. His expertise is in the fields of quantum and relativistic physics where he is widely published. Since 1993, one of his areas of special interest has been the applications of physics in medicine, specifically (1) the effects of respiration on cerebral blood flow and oxygenation, and (2) signal analysis theory, its relationship to quantum physics, and its applications to the measurement of ECG, HRV, and EEG. Since 2006, he has been Professor Emeritus of Physics.

Dr. Gersten served as Assistant Professor (1971-1977), Associate Professor (1977-1984), Department Chairman (1990-1994), and Professor (1984-2006) in the Department of Physics at Ben-Gurion University of the Negev (Israel). He was a research associate at Texas A M University (1969-1970), the University of Nijmegen (1970-1971), and CERN in Geneva, Switzerland (1975-1976). He has also served as a visiting professor for the University of Geneva (1976), the University of Paris (1976-1977), the University of British Columbia (1979-1981), Rutherford Laboratory in Chilton UK (1984), University of Melbourne (1987), Tata Institute for Fundamental Research in Mumbai (1997), and City University of New York (1996, 2004-2006). He was a Member of the Zlotowski Center for Neuroscience and

of the Unit of Biomedical Engineering (1993-2004) at Ben-Gurion University.

Christopher Gilbert, Ph.D.

Dr. Gilbert earned his Ph.D. (1973) and M.A. (1971) degrees in experimental psychology from Michigan State University, and his B.A. degree in anthropology from the University of California, Los Angeles in 1966. Following completion of his Ph.D., he continued his studies at Columbia University, 1974-1975, where he received training in clinical psychology and became licensed in New Jersey. His areas of expertise include behavioral medicine, biofeedback, pain management, and respiratory psychophysiology. He has published numerous articles in these fields, and is a co-author of one of the leading textbooks in breathing pattern disorders. He is currently employed by Kaiser Permanente (San Francisco) as a clinical psychologist in their Chronic Pain Management Program.

Dr. Gilbert developed a biofeedback services program (1973-1975) and served as a staff psychologist (1975-1977) providing psychotherapy for patients suffering with psychosomatic disorders, for Central Bergen CMHC in Paramus NJ. He served as an instructor teaching courses in biological psychology and research methodology during 1978-1980, and then again as Assistant Professor of Psychology during 1997-1999, for Ramapo College in NJ. He served as a research and clinical consultant to Pascack Mental Health Center in Park Ridge NJ during 1980-1983. Dr. Gilbert is now a licensed clinical psychologist in California and is a BCIA-certified biofeedback practitioner. He is widely known for his expertise on the subject of breathing.

Robert N. Grove, Ph.D.

Dr. Grove earned his Ph.D. (1971) and M.A. (1968) degrees in medical psychology and behavioral pharmacology from the University of Minnesota, and his B.A. degree in psychology from California Lutheran University in 1965. He completed postdoctoral training in substance abuse and applied

neuropsychophysiology at the University of Chicago, 1972-1974. He is a California licensed medical psychologist, a diplomat of the National Registry of Neurofeedback Providers, a Certified Medical Examiner of the California Worker's Compensation system, a diplomat of the American Pain Association, and a certified biofeedback practitioner. He is a member of numerous professional societies.

Dr Grove has provided professional education in the field of behavioral medicine for healthcare practitioners worldwide for more than 40 years. He has authored numerous journal articles as well as having served for many years as an editor for various professional journals. He has been involved in the development of psychophysiological monitoring instrumentation, both hardware and software, for more than 30 years. During this time he has specialized in the development of software applications for psychophysiological assessment and behavioral management of dysfunctional learning embedded in physiology, e.g., muscle pattern learning and its role in a wide variety of physical and psychological complaints. These applications have provided a foundational platform for conducting research and clinical studies in fields stretching from orthodontics to psychology. He is currently Vice President of Science and Technology for J & J Engineering, a physiological monitoring instrumentation manufacturing company.

Maria Katsamanis, Psy.D.

Dr. Katsamanis earned her Psy.D. (2003) and M.S. (2000) degrees in clinical psychology from the Carlos Albizu University (Miami Campus), her M.A. degree in psychology from Adelphi University in 2001, and her B.A. degree in International Relations from American University in 1996. She served as Clinical Instructor (2005-2008), and serves as Clinical Assistant Professor (2008-present) and as Associate Clerkship Director for the University of Medicine and Dentistry of the New Jersey Robert Wood Johnson Medical School, in Piscataway NJ. She is the co-founder of Spring Reins of Hope, LLC and

serves as their Executive Director of Mental Health Services.

Dr. Katsamanis has served as Principal Investigator, Co-Principal Investigator, Co-investigator, Postdoctoral Fellow, and Research Assistant for twelve major research grant awards. She has won many professional honors, served as associate editor and as reviewer for various peer-reviewed professional journals, and has authored or coauthored more than 30 publications in the field of psychophysiology. Dr. Katsamanis provides cognitive-behavioral group supervision as a Clinical Supervisor (2008-present) for Rutgers University, the Graduate School of Applied and Professional Psychology. She also serves as Group Instructor and as Examiner for medical students, residents, and interns for UMDNY/RWJ Medical School (2002-present). She is a licensed Clinical Psychologist in New Jersey and New York State, a licensed Professional Counselor in the State of New Jersey, a BCIA-certified biofeedback practitioner, and a hypnotherapist certified by the American Board of Hypnotherapy.

Charles R. Kokesh, MBA, J.D.

Mr. Kokesh earned his J.D. degree from Boalt Hall School of Law at the University of California-Berkeley in 1978, his MBA degree from Harvard Business School in 1971, and his B.A. degree in psychology from Harvard College in 1969. As a businessman with 40 years of experience, he is an expert in entrepreneurship and business planning.

Mr. Kokesh worked for Citibank in their Middle East Division as a Foreign Exchange Trader, Lending Officer, Operations Officer, and Branch Manager (1971-1973), for Arthur Young & Co. as a tax consultant (1973-1974), for Levi Strauss & Co. as their International Finance Manager (1974-1975), and for Bank of America as Vice President and Director of Global Treasury Management (1977-1978). He founded and was Managing Partner for Technology Funding (1979-2007), served as President of Dakota Arms, LLC (2007-2009), and provided services as an independent business consultant (2009-2012).

Faculty

Technology Funding managed 10 private funds and 11 publicly registered funds, helped 69 companies go public, and assisted a large number of portfolio companies be acquired by much larger firms. During his tenure, Technology Funding invested \$315 million in approximately 250 private companies. Mr. Kokesh also served on the board of directors or the management committee of more than 40 start-up companies. Technology Funding focused on investments in medical technologies, information systems, and advanced manufacturing technologies.

Marla Gokee Kokesh, M.D.

Dr. Kokesh earned her M.D. degree from Stanford Medical School in 1985, and her B.A. degree in psychology and chemistry from the University of Minnesota in 1980. She completed an internship in general surgery at Case Western University Hospital in 1986 and a second year in 1987 before she transferred to general psychiatry at Case Western University Hospital (1987-1988) and completed at Stanford Medical Center (1989-1991). She became board certified in psychiatry in 1993. Her areas of expertise include psychopharmacology, psychotherapy, group process, and interpersonal neurobiology, currently her specialty. She is both a Certified Enneagram Consultant and a Birkman Certified Consultant. Dr. Kokesh has also been trained in Acupuncture for Physicians, at the University of California, Los Angeles (1995).

Dr. Kokesh is currently founder and Director of Complete Health, LLC, an integrative functional medicine clinic in Santa Fe, NM that offers educational and consulting services to individuals and organizations based on the latest developments in interpersonal neurobiology, wellness, and the enneagram. She has extensive consulting and teaching experience working with Native American organizations, such as the Nakwatsvewat Institute, that works with Native communities to develop and enhance their governance, justice, and educational systems. She provides consulting services for businesses, including pre-employment evaluation, team building, vocational guidance, and self-assessment and

development. She also offers personal and professional growth workshops for physicians, lawyers, artists, and other professional groups.

Gerald P. Kozlowski, Ph.D.

Dr. Kozlowski earned his Ph.D. in Anatomy and Physiology at the University of Illinois (Urbana-Champaign) in 1971, his M.S. in Anatomy and Physiology from Michigan State University in 1966, and his B.S. degree in Biology and Chemistry in 1964. He served as a Postdoctoral Teaching Fellow at the University of Rochester, 1971-1973. His areas of specialty expertise include nutritional supplements and their physiological and psychological effects, including their role in neuroendocrinology, neuroimmunology, neurochemistry, and psychophysiology (e.g., heart rate variability). He is a Certified Fellow in EEG Biofeedback. Currently he is Director of the Research Program for Terra-Biotech, LLC in Dallas (2011-present) and is a faculty member of the University of Natural Medicine, Department of Psychophysiology in Santa Fe NM.

Dr. Kozlowski served as an Assistant Professor (1976) and as Associate Professor (1976-1978) of Anatomy in the Department of Physiology and Biophysics at Colorado State University. He served as Associate Professor in the Department of Neurobiology and Anatomy (1978-1980) and then as Associate Professor in the Department of Physiology (1980-1997, 2000-2005), at the Graduate School of Biomedical Sciences at the University of Texas Health Science Center, Southwestern Medical School, in Dallas. He also served as a Senior Lecturer in Psychology and Applied Cognition & Neuroscience Program at the University of Texas at Dallas (1999-2000), and as a neurotherapy practitioner for the Neurotherapy Center of Dallas (2005-2008). He has taught a wide variety of courses ranging from cellular biology to neurotherapy, and has authored or coauthored one hundred journal articles and book chapters.

Peter M. Litchfield, Ph.D.

Dr. Litchfield earned his Ph.D. in experimental psychology from the University of Portland

in 1972, his M.A. degree in psychology from San Diego State University in 1970, and his B.A. degree in psychology from the University of Michigan in 1964. He completed a one year sabbatical leave from California Polytechnic State University in behavioral medicine with T. X. Barber at Medfield Hospital, in Massachusetts 1975-1976. His areas of expertise include: behavioral medicine, behavioral physiology, applied psychophysiology, research design, behavioral pharmacology, placebo effects, biological learning and motivation, physiological monitoring instrumentation, and business planning. Respiratory psychophysiology and educational capnography have been his exclusive focus since 2000. He currently serves as President, CEO, and Dean of Faculty of the Graduate School of Breathing Sciences.

Dr. Litchfield served as Assistant Professor of Psychology 1970-1974, was tenured in 1974, and served as Associate Professor of Psychology 1974-1981 at California Polytechnic State University in San Luis Obispo, CA. He founded and directed: Proseminar Institute in San Francisco, 1976-1981; the Applied Psychophysiology Institute in San Francisco CA and Bainbridge Island WA, 1981-1997; Behavioral Physiology Institutes (a graduate school in behavioral medicine) in Bainbridge Island WA, 1997-1999; and Better Physiology, Ltd. (manufacturer of capnography instrumentation and provider of educational programs), 2000-2012. He has lectured for more than 40 years in person and by webinar on behavioral physiology, respiratory psychophysiology, self-regulation science, and business planning throughout North America and in Asia, Australia, Europe, and Latin America to diverse audiences, ranging from medical schools to corporate groups.

Laurie McLaughlin, D.Sc.

Dr. McLaughlin earned her D.Sc. degree in physiotherapy from Andrews University in 2007 and her B.S. degree in physiotherapy from McMaster University in 1983. She earned a Diploma in Physiotherapy from Mohawk College of McMaster University

in 1982, an Advanced Diploma of Manual and Manipulative Physiotherapy from the Canadian Physiotherapy Association in 1988, a Certification in Contemporary Medical Acupuncture from McMaster University in 2000, and Certification in Capnometry from Behavioral Physiology Institute in 2005. Her areas of specialty expertise include orthopedics, capnography, spinal manipulation, fascial systems, advanced practice physiotherapy, and dysfunctional breathing. She is currently the founder and Director of the M+D ProHealth physiotherapy clinic in Oakville and Hamilton (Ontario) where she works as an Advanced Practice Physiotherapist doing surgical screening and treating patients with orthopedic complaints.

Dr. McLaughlin is also Assistant Clinical Professor at the School of Rehabilitation Science at McMaster University in Hamilton, on the faculty and Examiner for the Canadian Physiotherapy Association (Orthopedic Division), and is on the faculty and Examiner for the North American Institute of Manual Therapy. She served as Chief Examiner for Canada, Canadian Physiotherapy Association, Orthopedic Division, 1999-2005. She has numerous publications in the field of physiotherapy, including many articles and book chapters on the subject of dysfunctional breathing. She has been lecturing and providing workshops since 1988 for healthcare practitioner audiences throughout North America, Europe, and Australia, on advances in orthopedic physiotherapy and since 2005 on the importance of identifying and managing dysfunctional breathing.

Jan B. Newman, M.D.

Dr. Newman earned her MD degree (1980) and her B.H.Sc. degree (1974) in nursing from the State University of New York (Downstate Medical Center), and her AAS degree at Westchester Community College in 1972. She performed surgical training at the University of Texas Medical Branch at Galveston (1980-1984), which included a year of research in gastrointestinal physiology. She completed her surgical residency at the Medical Center

Hospital of Vermont (1985-1988). She is a Diplomat of the National Board of Medical Examiners, a Diplomat of the American Board of Surgery, and a Fellow of the American College of Surgeons and of the International College of Surgeons.

Early in her career, Dr. Newman worked as an intensive care nurse in neurological and cardiothoracic surgery, and in emergency room care (1974-1980). On completion of her surgical residency, she entered private practice in Butte and Missoula MT (1988-1993). In 1993 she suffered a career ending injury. She subsequently evolved her career into the field of behavioral medicine (1993-present) and became a Diplomat of the American Board of Holistic and Integrative Medicine in 2002 (2009). Her study included Yoga and Tibetan Buddhism with multiple spiritual masters, including the Dalai Lama. Realizing the health benefits and the need to put these teachings into a nonsectarian format, she completed her M.A. degree in Integrated Arts and Education at the University of Montana (2005). She teaches workshops nationwide on spirituality and health and the physiology of stress and the treatment of stress-related diseases, which is the cornerstone of her current professional work.

Sandra L. Reamer, MFA

Ms. Reamer earned her MFA degree from Pratt Institute in Brooklyn NY in 1997 and her BFA degree and Teaching Credential from the University of Denver in 1990. She also studied at: the Parsons School of Design in New York (New School of Social Research), 1979-1980; the American Academy of Sports Medicine, 1982 (Personal Trainer Certification); the Vienna Academy of Fine Art in Vienna Austria, 1982-1983; University of Northern Colorado in Greeley, 1990-1991 (Impact Counselor Certification); the University of Colorado in Boulder, 1999-2001 (Graphics Art Certification); and Full Circle of Alternative Therapies, 2001-2003 (Craniosacral Therapist certification).

Ms. Reamer has served as Executive Director of Behavioral Physiology Institute in Boulder

CO and Santa Fe NM since 2002, where she serves as administrator, practicum supervisor, tutorial instructor, seminar presenter, webinar leader, personal trainer, workshop leader, and consultant. During her tenure at the Institute, she co-authored "CapnoLearning[®]" with Dr. Peter Litchfield, a curriculum offered worldwide by webinar for professionals interested in helping people with dysfunctional breathing habits. Her specialties include biological learning as applied to breathing behavior, somatic awareness and phenomenological exploration, educational capnography, breathing for stress reduction and optimal performance, embracement physiology, and customizing breathing education to the needs of professionals and clients.

George Fuller von Bozzay, Ph.D.

Dr. von Bozzay earned his Ph.D. (1967) and M.A. (1965) in clinical psychology from the University of Massachusetts (as a NIMH fellow), and his B.A. degree from Washington State University in 1964. He completed postdoctoral training at Langley Porter Psychiatric Institute at the University of California Medical Center in San Francisco, 1967-1968. He is the author of many books in the fields of behavioral medicine and biofeedback as well as numerous articles. He is the founder (1971) and the Director of the Biofeedback Institute of San Francisco, one of the first clinics to offer biofeedback services and to train practitioners to do so in America, where he continues to practice.

Dr. von Bozzay served as Associate Clinical Professor in the Department of Biological Dysfunction at the University of California Medical Center, Clinical Instructor in Psychiatry and Behavioral Sciences at Stanford School of Medicine, Clinical Psychologist at Children's Hospital in San Francisco, Psychology Instructor in the Behavioral Science Department of the City College of San Francisco, and Psychology Instructor at California School of Professional Psychology. He has served as a consultant to numerous organizations, including, corporations,

schools, government agencies, hospitals, and clinics. During the past 40 years, he has given many hundreds of lectures, conference presentations, and workshops worldwide. Dr. von Bozzay is well recognized as one of the original pioneers in the fields of biofeedback and neurofeedback.

Robert P. Whitehouse, Ed.D.

Dr. Whitehouse earned his Ed.D. degree in counseling and guidance (psychology) in 1981 and his M.A. degree in rehabilitation counseling in 1971 from the University of Northern Colorado, and his B.A. degree in psychology from the University of Colorado (at Boulder) in 1969. He holds certifications in Biofeedback (BCIA), Breathing Education (Behavioral Physiology Institute), formerly in Pain Management (diplomat of the American Academy of Pain Management) and EEG Biofeedback (neurofeedback). His areas of expertise include biofeedback, stress management, pain management, trauma psychophysiology, psychotherapy, breathing psychophysiology, and heart rate variability (HRV), the central focus of his work.

Dr. Whitehouse served as Professor of Psychology at the Colorado Mountain College (1971-1984) and as Director of the Biofeedback and Stress Management Center in Glenwood Springs CO (1983-1988). He also served as Senior Biofeedback Therapist and Instructor for the Boulder Medical Center (1987-1989), as an Associate of Behavioral Medicine Associates in Denver (1988-1989), and as the Director of Biofeedback Services for two pain management centers in Ft. Collins and Loveland CO (1988-1995). Since 1995, as a licensed psychologist in Colorado, he has been in private practice offering biofeedback, psychotherapy, consulting, and educational services nationwide, to both individuals and organizations, including courses in psychophysiology and biofeedback for the Sport & Performance Psychology M.A. degree program at the University of Denver (2008-2011). He is widely known for his contributions to the field of biofeedback, especially heart rate variability (HRV)

psychophysiology, a subject on which he is currently organizing a certification program and writing a comprehensive book.

Steven Zlutnick, Ph.D.

Dr. Zlutnick earned his Ph.D. in clinical psychology from the University of Utah in 1972, his M.A. degree in clinical psychology from Western Michigan University in 1968, and his B.A. degree in psychology from the University of Missouri in 1966. He currently serves as Professor of Counseling Psychology at the University of San Francisco and is a California licensed clinical psychologist. His areas of expertise include behavioral medicine, pain management, clinical behavior analysis, experimental analysis of behavior, iatrogenic issues in health care, behavioral self-control, child & parent therapy, and integrating behavior therapy with other modalities. He is the author of numerous articles, book chapters, and books.

Dr. Zlutnick served as Instructor of Psychiatry 1972-1975, as Assistant Professor of Psychiatry 1975-1978, and as Associate Professor of Psychiatry with tenure 1979-1980 at the College of Medicine of the University of Utah. He was also Director of Training and Evaluation 1975-1979, Director of the Division of Behavioral Medicine and Pain Clinic 1975-1979, and Director of the Division of Psychology 1977-1979 for the College of Medicine of the University of Utah. He served as Director of the Behavioral Medicine Pain and Stress Clinic for the California Pacific Medical Center 1979-1982, where he continues as a member of their Allied Clinical Staff. He served as Associate Professor of Counseling Psychology 1979-1982, as Professor of Counseling Psychology with tenure 1982-present, and as Chairman of the Department 1988-1994 and 2001-2006. He also served as Director of the Behavioral Medicine & Therapy Institute of San Francisco 1980-2006, as Director of the Behavior Therapy Center 2006-present, and as President of the Children's Learning Center 1998-present.

Academic Calendar

FALL 2013

Sep-14	Sep-28
Sep-15	Sep-29
Sep-21	Oct-5
Sep-22	Oct-6
Oct-12	Oct-26
Oct-13	Oct-27
Oct-19	Nov-2
Oct-20	Nov-3
Nov-9	Nov-23
Nov-10	Nov-24
Nov-16	Dec-7
Nov-17	Dec-8

SEQUENCE-1

301 Breathing Science
302 Behavioral Physiology
101 Pulmonary Anatomy & Physiology
102 Cardiac Anatomy & Physiology
103 Cellular Respiration
104 Muscle Physiology & Breathing
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography

Scheduling explanation

All courses are one-unit courses (15 class-time hours). Each course is divided into two 1-day sessions, scheduled two weeks apart on two Saturdays or on two Sundays. Each 1-day session is 7.5 Hours, with a scheduled one-hour break: 09:00-12:30, 13:30-17:30.

Listings in RED are case review proseminars that are held on six occasions throughout the trimester in 2.5 Hour blocks. **Listings in BLUE** are business proseminars held on four occasions in 3.5 Hour blocks. **Listings in GREEN** are practicums that students are responsible for throughout the trimester.

WINTER 2014

Jan-11	Jan-18
Jan-12	Feb-1
Jan-19	Feb-2
Jan-25	Feb-8
Jan-26	Feb-9
Feb-15	Mar-1
Feb-16	Mar-2
Feb-22	Mar-8
Feb-23	Mar-9
Mar-15	Mar-29
Mar-16	Mar-30
Mar-22	Apr-5
Mar-23	Apr-6
during trimester	

SEQUENCE-2

403 EMG, Dysponesis, & Breathing
305 Stress Psychophysiology
404 Breathing Habit Evaluation
601 Case Review: Behavior Analysis
107 Neurophysiology & Breathing
306 Behavioral Disorders
501 The Business Plan
601 Case Review: Behavior Analysis
308 Cognitive Behavior Modification
502 The Marketing Plan
307 Behavior Therapy
601 Case Review: Behavior Analysis
701 Practicum: Assessments (2 units)

SEQUENCE-1

302 Behavioral Physiology
301 Breathing Science
103 Cellular Respiration
104 Muscle Physiology & Breathing
402 Educational Capnography

SUMMER 2014

May-3	May-4
May-10	May-24
May-11	May-25
May-17	May-31
May-18	Jun-1
Jun-7	Jun-21
Jun-8	Jun-22
Jun-14	Jun-28
Jun-15	Jun-29
Jul-12	Jul-26
Jul-13	Jul-27
Jul-19	Aug-2
Jul-20	Aug-3
during trimester	
during trimester	

SEQUENCE-3

405 Breathing Habit Modification
201 Data Collection & Analysis
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
202 Instrumentation & Measurement
108 Sleep Physiology & Breathing
406 HRV & Breathing
602 Case Review: Behavior Modification
407 Survey Breathing Interventions
408 Consciousness & Breathing
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
702 Practicum: Coaching (2 units)
703 Practicum: Business (1 unit)

SEQUENCE-2

403 EMG, Dysponesis, & Breathing
305 Stress Psychophysiology
404 Breathing Habit Evaluation
601 Case Review: Behavior Analysis
601 Case Review: Behavior Analysis
501 The Business Plan
502 The Marketing Plan
601 Case Review: Behavior Analysis
701 Practicum: Assessments (2 units)

SEQUENCE-1

302 Behavioral Physiology
101 Pulmonary Anatomy & Physiology
301 Breathing Science
102 Cardiac Anatomy & Physiology
103 Cellular Respiration
104 Muscle Physiology & Breathing
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography

Academic Calendar

FALL 2014

Sep-6	Sep-7
Sep-13	Sep-27
Sep-14	Sep-28
Sep-20	Oct-4
Sep-21	Oct-5
Oct-11	Oct-25
Oct-12	Oct-26
Oct-18	Nov-1
Oct-19	Nov-2
Nov-8	Nov-22
Nov-9	Nov-23
Nov-15	Dec-6
Nov-16	Dec-7
during trimester	
during trimester	

SEQUENCE-1

302 Behavioral Physiology
301 Breathing Science
101 Pulmonary Anatomy & Physiology
104 Muscle Physiology & Breathing
103 Cellular Respiration
102 Cardiac Anatomy & Physiology
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography

SEQUENCE-3

405 Breathing Habit Modification
201 Data Collection & Analysis
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
202 Instrumentation & Measurement
108 Sleep Physiology & Breathing
406 HRV & Breathing
602 Case Review: Behavior Modification
407 Survey Breathing Interventions
408 Consciousness & Breathing
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
702 Practicum: Coaching (2 units)
703 Practicum: Business (1 unit)

SEQUENCE-2

403 EMG, Dyspnea, & Breathing
305 Stress Psychophysiology
404 Breathing Habit Evaluation
601 Case Review: Behavior Analysis
107 Neurophysiology & Breathing
306 Behavioral Disorders
307 Behavior Therapy
601 Case Review: Behavior Analysis
308 Cognitive Behavior Modification
501 The Business Plan
502 The Marketing Plan
601 Case Review: Behavior Analysis
701 Practicum: Assessments (2 units)

WINTER 2015

Jan-17	Jan-31
Jan-18	Feb-1
Jan-24	Feb-7
Jan-25	Feb-8
Feb-14	Feb-28
Feb-15	Mar-1
Feb-21	Mar-7
Feb-22	Mar-8
Mar-14	Mar-28
Mar-15	Mar-29
Mar-21	Apr-11
Mar-22	Apr-12
during trimester	
during trimester	

SEQUENCE-2

403 EMG, Dyspnea, & Breathing
305 Stress Psychophysiology
404 Breathing Habit Evaluation
601 Case Review: Behavior Analysis
107 Neurophysiology & Breathing
306 Behavioral Disorders
307 Behavior Therapy
601 Case Review: Behavior Analysis
308 Cognitive Behavior Modification
501 The Business Plan
502 The Marketing Plan
601 Case Review: Behavior Analysis
701 Practicum: Assessments (2 units)

SEQUENCE-1

301 Breathing Science
302 Behavioral Physiology
101 Pulmonary Anatomy & Physiology
102 Cardiac Anatomy & Physiology
103 Cellular Respiration
104 Muscle Physiology & Breathing
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography

SEQUENCE-3

405 Breathing Habit Modification
201 Data Collection & Analysis
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
202 Instrumentation & Measurement
108 Sleep Physiology & Breathing
406 HRV & Breathing
602 Case Review: Behavior Modification
407 Survey Breathing Interventions
408 Consciousness & Breathing
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
702 Practicum: Coaching (2 units)
703 Practicum: Business (1 unit)

SUMMER 2015

May-16	May-30
May-17	May-31
Jun-6	Jun-20
Jun-7	Jun-21
Jun-13	Jun-27
Jun-14	Jun-28
Jul-11	Jul-25
Jul-12	Jul-26
Jul-18	Aug-1
Jul-19	Aug-2
Aug-8	Aug-22
Aug-9	Aug-23
during trimester	
during trimester	

SEQUENCE-3

405 Breathing Habit Modification
201 Data Collection & Analysis
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
202 Instrumentation & Measurement
108 Sleep Physiology & Breathing
406 HRV & Breathing
602 Case Review: Behavior Modification
407 Survey Breathing Interventions
408 Consciousness & Breathing
602 Case Review: Behavior Modification
603 Business Review: Plan Evaluation
702 Practicum: Coaching (2 units)
703 Practicum: Business (1 unit)

SEQUENCE-2

403 EMG, Dyspnea, & Breathing
305 Stress Psychophysiology
404 Breathing Habit Evaluation
601 Case Review: Behavior Analysis
107 Neurophysiology & Breathing
306 Behavioral Disorders
307 Behavior Therapy
601 Case Review: Behavior Analysis
308 Cognitive Behavior Modification
501 The Business Plan
502 The Marketing Plan
601 Case Review: Behavior Analysis
701 Practicum: Assessments (2 units)

SEQUENCE-1

301 Breathing Science
302 Behavioral Physiology
101 Pulmonary Anatomy & Physiology
102 Cardiac Anatomy & Physiology
103 Cellular Respiration
104 Muscle Physiology & Breathing
105 Acid-Base Regulation
106 Cardiac & Pulmonary Disease
303 Behavior Analysis
304 Behavioral Counseling
401 Biofeedback & Neurofeedback
402 Educational Capnography