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G r e e t i n g s ! It seems we launch into true fall when the Daylight Savings time is turned off. In keeping with change, here's one for you. This issue is a "college" issue, one that

covers several non-audiology training programs for working in the hearing health care field.

In English speaking Canada, everyone is quite well aware of the big three programs: (1) the Hearing Instrument Specialist (HIS) program at George Brown College in Toronto, (2) the HIS program at Conestoga College in Kitchener, and (3) the Hearing Aid Practitioner program at Grant MacEwan University. We are not so well aware however, of our sister training programs in hearing health care located outside of English speaking Canada; namely, in Quebec and in the USA. The purpose of this issue then is to offer a description of each of these programs. There are now two training programs in Quebec and four in the USA.

As some of us know, the publically funded college system for vocational training in Quebec is also known as CEGEP, a French acronym for College d'Enseignement General et Professionnel. Also, in Quebec the trained professional who fits hearing aids is known as the Audioprothesiste. For years, all such training in Quebec took place at a single location: Rosemont College in Montreal. I recall visiting that program a couple of times when I used to work at Unitron, years before I started the HIS program at Conestoga College. I was quite impressed with their facilities then, and can only imagine what they have evolved into these days. I was also impressed with the rigour of their 3-year program. Those graduates certainly knew their hearing aids, and I strove to imitate that achievement at Conestoga.

Well, a new 2<sup>nd</sup> program in Quebec has now begun at the College Sainte Anne de la Pocatiere. Located much further east, Ste Anne de la Pocatiere is about half way between Quebec City and Rimouski. Google up the college, have a look on a map, and check it out for yourselves. A few years ago, two representatives from this program visited me at Conestoga, so as to get ideas as to how to set up their curriculum. Have a read about what their efforts have evolved into today!

The USA is another different kettle of fish. As we all know, the mainstay of non-audiology education in our neighbouring country is the longstanding distance learning program offered by International Hearing Society located in Livonia Michigan. There do exist some college programs, but it is not State law that these program be completed in order to practice. Here's the rub: although the US has 10 times the population of Canada, they do not have 10 times the number of college training programs in hearing health care. As a matter of fact, there are just 4: Bates Technical College located in Tacoma Washington, Spokane Falls Community College located just outside of Spokane Washington, Rowan College at Burlington County located in New Jersey, and Ozarks Technical Community College located in Springfield Missouri.

Over the past 2 months I contacted representatives from each of the abovementioned 6 college programs, and asked them if they'd write an article about their respective program. They kindly obliged, and I am so glad that they did. Their contributions can only lead to our own learning. As a result of their time and efforts, we now have, under one *CHR* cover, some substantial information about each and every college program in North America located outside of English speaking Canada!

In closing, I wish to point out a mistake in my ADRO article in the last issue. The last two figures should have been shown as below. I wish to apologize for the error and any confusion that may have resulted for our readers.

Ted Venema, PhD, Editor-in-Chief





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# Hearing Report

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# Rosemont College: A Brief History, A Distinctive Position in North America *Audioprothésiste: The Hearing Aid Dispenser Profession in Québec*

By Gilles Cagnone, Audioprothesiste

#### About the Author

Gilles Cagnone received his degree at the Conservatoire des Arts et Métiers in Paris as an audioprothèsiste (diploma D'Etat) in the late seventies, and then decided to cross the pond to the province of Québec. He has been teaching a variety of different courses at the College of Rosemont since 1983. Along with these duties, he has also worked with various government offices as a consultant.

The profession of audioprothésiste in Quebec is an exception in North America as it has a legislated exclusive scope of practice. The audioprothésiste is the only professional in Quebec authorized to sell, replace and adjust hearing aids. This gives the dispenser both a high degree of autonomy but also great responsibility. This work is framed by laws and regulations issued by the Order of Audioprothésistes (OAQ) whose function is to protect the public.

In accordance with the Code of Professions of Québec, a board of directors was elected, a code of ethics was written and several committees were established to ensure compliance with the various articles included in the book of statutes and regulations of the audioprothésistes.

Thus we find, among others:

- A professional inspection committee that ensures the smooth running of practices, record keeping and compliance with certain operating standards.
- The training committee whose

responsibility is continuing education of hearing care professionals at conferences and symposiums.

• The equivalence committee for professional accreditation for those from abroad or those who haven't graduated from one of two audioprothésiste college programs (editor's note: Rosemont & Ste Anne de la Pocatiere).

To legally practice the profession of audioprothésiste, one must be in good standing with the Order of Audioprothésistes (OAQ) which in turn requires one to have a recognized diploma from an educational institution or a diploma equivalence issued by the Order and pay the annual fee. Audioprothésistes are also represented by the Professional Association of Quebec Audioprothésistes (APAQ) when dealing with public authorities and other organisations. At the present time there are 367 members of the OAQ in good standing.

It was in 1979 that the audioprothésiste department was established in the wake of the introduction of general and vocational colleges (CEGEPs) in 1967 and following a reform of the professional system that created several new official professions including that of audioprothésiste in 1973. The search for a suitable establishment that could accommodate and train future professionals was made and the Rosemont College was chosen for this honor.

# THE FOUNDING FATHERS OF THE PROGRAM

At the time, it was necessary to build a new training program because there was nothing like it in North America. Mr. André Savard, with the help of the OAQ, was commissioned to begin the project which was then taken over by Mr. Guy Martin. It was in September of 1981 that the first cohort was recruited. The challenge of establishing our department was enormous as everything needing to be built from scratch.

The hiring of Gilles Cagnone graduate of Conservatoire Nationale des Arts et Metiers in France, and Yves Tougas who graduated from McGill University in 1983, allowed the creation of a program that made the best of both worlds. Since then, and after many reforms and improvements, the audioprothèse program at Rosemont graduates approximately 20 students per year.

Over the years the department has enlisted the expertise of several audioprothésistes as professors. In 1993, Mrs. Linda Cloutier has joined the ranks and more recently, Jean-Philippe Denis, Ms. Sonia Richard, and Ms. Marie-Christine Lapointe joined the team. At present and after some recent changes, the faculty consists of 7 audioprothésistes who teach courses, laboratories, pre-internship and supervise internships. There are also two instructors who have the role as lab technicians. Additionally, a qualified chiropractor teaches ear pathology.

#### PROGRAM FACULTY

The course charge varies semester to semester as does the availability of professors who have to manage their time between teaching and their practices. Linda Cloutier who graduated from the program in 1990 and who has been a professor since 1997, manages of her practice since 1990 up to today. Her versatility has allowed her to teach various courses, supervise internships and be the department and program for the last 3 years. More recently she has focused on pre-internship courses. Sonia Richard is a 2011 graduate of our program, and she bravely took up the challenge of teaching audiometry courses along with labs that are given in the third semester, as well as internship supervision. Marie-Christine Lapointe graduated in 2006 from the program, after being the lab technician for 5 years. She has been promoted to department and program coordinator in addition to teaching the special tests course, auditory adaptation and communications.

Jean Philippe Denis, from the class of 2001 gives the introduction to the profession course this semester; she had significantly assisted in previous semesters in teaching other courses and supervising internships. Sylvain Lauzon, chiropractor and professor at the University of Quebec at Trois Rivières, teaches ear pathology. Recently Constance Poitras and Manuel Papazian, graduates in 2014 and 2015 respectively, joined the staff as laboratory technicians.

Concerning the author, he has haunted the department since its foundation or almost, teaching courses such as introduction to audiometry, introduction to objective measurements. technical and ergonomic aspects of hearing aids, adaptation to hearing aids with their corresponding labs and internship supervision. After 30 years of service to the department, he longs to pass some time on by a river discussing this world that is in constant flux with Ted Venema, if Ted would accept him for Skype backgammon partners.

Apart from the author (who, having been around and about for over 20 years of practice, has stopped seeing patients), all other professors and technicians continue to practice in the clinical setting. This allows the department to gain useful field experience and to integrate into a regular practice with patients the principles that they preach. It certainly enables the sharing delicious real world anecdotes. Activities related to the knowledge gained in the program have also been set up by Ms. Melody Desroches and Ms. Melanie Duplin; these have a more practical flavor and are oriented towards the daily clinical life.

Rosemont College has also established a foundation through which the audioprothèse department receives funds enabling it to finance the continued training of its professors by attending conferences and seminars. With these funds it was also possible to create workshops for students animated by practitioners.

#### THE PROGRAM SEQUENCE

The hearing aid program, like most technical programs in Quebec, has a three-year term. We recruit both students leaving high school as well as those coming from different life paths. Our students, numbering 35 in the first year, apply via the Regional Admissions Service of Greater Montreal and come from all regions of Québec with a predisposition for the Greater Montreal Area.

Upon graduation, approximately 25 per year, hearing care professionals often work in the practice that hosted their internship during the sixth semester, or else they find employment elsewhere in the province of Quebec. Some return to their country of origin such as France. The specificity due to the French language provides little incentive for graduates to try their luck in other provinces with few exceptions.

The program brings together the knowledge, expertise and life skills needed to perform all the tasks required in the daily practice of the audioprothésiste, from day one taking charge of the patient's hearing aid fitting to the verification of the equipment's performance when fitted, the follow up through practice management and more.

It is important to note that this table does not reference the additional courses offered by the contributory disciplines

# CAGNONE

	Fall	Subject Material	Winter	Subject Material
First Year	Semester 1	• General view of the profession in its legal frame	Semester 2	• Introduction to audiometry : basic audiometric tests
Second Year	Semester 3	<ul> <li>Audiometry and impedancemetry seeing few patients</li> <li>Introduction to electroacoustic measurements in test chamber and real ear measurements</li> <li>Pathologies of the ear</li> </ul>	Semester 4	<ul><li>Technical review of hearing aids</li><li>Pre-internship audiometry</li><li>Auditory profile</li></ul>
Third Year	Semester 5	<ul> <li>Adaptation to hearing aids</li> <li>Acoustic adaptation and communication</li> <li>Pre-internship fitting</li> <li>Practice management</li> </ul>	Semester 6	• Internship in workplace

of physics biology, psychology and administration. We based our curriculum so that the student is gradually brought into contact with different aspects of the profession, so as to be consistent with the chronology of the patient's journey towards a hearing aid fitting.

- The first semester enables students to examine a general overview of the profession, its legislation and a quick look at hearing aid technologies and a one day internship in clinic to make students sure of their choice. The student also takes courses in Physics and biology / anatomy that allow students to prepare better for the second semester.
- In the second semester, students are introduced to the basic concepts of audiometry and use of audiometric equipment, doing testing with few patients. At the same time students perfect their education in electricity and the biology of hearing.
- In the third semester, the future audioprothésistes are introduced to measurements made using the

electroacoustic analyzer test chamber as well as real ear measurements. Audiometry, impedance measurements, and test practice with few patients from the College are reinforced in this semester. Students are also introduced to various pathologies of the auditory system.

- In the fourth semester, students deepen their understanding of how hearing aids function; for example 'compression' and its applications. In addition, students learn to recognize various types of patient profiles and match the corresponding hearing aid interventions. In the first of a two-part pre-internship during this semester, students come more in contact with a hearing-impaired patient and conduct a non-diagnostic evaluation. Students will then propose several preprogrammed hearing aid solutions.
- During the fifth semester, the focus is on certain special audiometric tests, objective tests such as the auditory brainstem repose (ABR). At the same time students are introduced to prescription methods of programming,

adaptation to hearing aids, verification of performance in free-field as well as stereo-audiometric tests. The second part of the pre-internship also takes place here; a team of two students perform all operations required for fitting a patient from day 1 up to and including the verification of the benefits of hearing aids at the end of three weeks of experimentation.

• The sixth and final semester takes place in a working practice, from 9:00 am to 5:00 pm, five days a week under the internship supervisor.

# WHAT DIFFERENTIATES US FROM OTHER PROGRAMS

When we created the curriculum, we felt it important to establish a harmonious equilibrium of theory and practice. With our laboratory that measures 1600 square feet, we enable our students to apply the concepts seen in class. Students also receive patients in audiometry laboratories as well as in their preinternship. Thus in the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> semesters the students evaluate a patient through audiometry, propose hearing aid solutions, fit the hearing aids and verify the proper adaptation a few weeks later, all under the scrutiny of a professor.

Our facilities, in addition to traditional classrooms, include 3 double audiometric sound rooms with all the equipment required for the assessment and adjustment of the fitting, and 2 single sound rooms that better reflect the daily reality of a practice. A large media room has 10 workstations. Each room includes a computer for the adjustment of hearing aids and an electroacoustic analyzer with a test chamber and for real ear measurements. In addition, this room is equipped with a video projector allowing us to regularly receive representatives of various manufacturers who present new products - as well as international speakers - to our second and third year students. Finally, a space is dedicated to impression taking, hearing aid and earmold modification, cleaning, maintenance and simple repair of hearing aids.

#### CONCLUSION

We always consider changes in the near future that might be required in order to meet new trends and requirements in our field of expertise. We emphasize both the electroacoustic and psychoacoustic measurements of fittings, as well as supporting patients throughout the fitting process.

Having a comprehensive view of the history of our field, I can confirm that we are doing the best job in the world as audioprothésiste with the best years yet to come. In terms of education, the passion that belongs to our team and its quest for excellence are guarantees of a healthy program and ready to face the challenges ahead. Thanks to the *Canadian Hearing Report* for allowing me to complete this overview of our activities. On behalf of the department professors and on my behalf I can assure you that if we had to do this all over again, we would with enthusiasm! Long live (Vive!) the audioprothèse department of the Rosemont College!





# Excellence and Passion to Help the Hearing Impaired Person

By Daniel Bois, Audioprothesist



#### About the Author

Daniel Bois graduated in audiology from l'Université de Montréal at the beginning of the 1990s. His technology savvy side and desire to obtain patients' satisfaction lead him to develop a patient centered approach and evidence-based practice. Over the course of his career he had the opportunity to work in different settings (hospital, private practice, industry) in clinical and managment positions. He has lectured in Canada on different topics related to amplification and taught at the Université de Montréal and also at Université de Moncton. He has also appeared on TV in a few informative programs about hearing loss. Daniel was hired in December 2012 to develop the Hearing Instrument Specialist program in La Pocatière, and has been managing and teaching there since then.

Located on the St-Lawrence River approximately 75 minutes east of Quebec City, the Cégep of La Pocatière is a small college of approximately one thousand students on 2 campuses. In a few months from now (May 2016), the first cohort of students will be graduating from the Audioprothesist program. The following will describe the actual cohort of students, the composition of our faculty, the rationale behind the curriculum, the architecture of the department and some unique features about our program.

The 3-year program started in the Fall Semester of 2013. Currently, 60 Frenchspeaking students coming mainly from Quebec (90%), but also from Europe and Africa are enrolled in the program. Once they've completed their training, most of them hope to work in Quebec or in their native country. The program faculty has grown over the last couple of years and is still evolving as we move forward. Our current team includes a mix of professionals to reflect our interdisciplinary approach. Here is the actual team:

**Daniel Bois**, *Audioprothesist*. Teaching Amplification, Consolidation Seminars and On-site Internship classes. Department Head and full time teacher.

**Patrice Pelletier**, *Audioprothesist* Teaching Amplification and Ethic & Professionalism classes. Part time teacher and working in his private practice 4 days per week;

**Marjorie Noel**, *Audiologist*. Teaching Audiometry, Pathology, Psychoacoustic and Aural Rehab classes. Full time teacher;

**Sébastien Lanthier**, *Audioprothesist*. Teaching the Amplification labs. Part time teacher and working in his private practice 4 days per week.

**Corinne Marois**, *Speech-Language Pathologist*. Teaching Human Development and Hearing Loss and Counselling classes. Part time teacher and working in her private practice (SLP), 3 days per week.

**Ghislaine Duval**, *Biologist*. Teaching Anatomy and Physiology classes. Full time teacher.

Sébastien Pelletier, *Electronic Engineer*. Teaching the Electronics for Hearing Aids class. Full time teacher. Simon Fissette, Physicist. Teaching the Applied Acoustics for Hearing Instrument Specialists class. Full time teacher. **Julie Levesque**, *Accountant*. Teaching Management class. Full time teacher.

The curriculum of the program was built around 4 core values:

**Patient centered approach**... to focus on helping people with hearing problems... not defective ears;

**Evidence based practice**... to insure high standards in the daily practice and keep these standards high as time evolve;

**Technological proficiency**... to make sure the technology advances are mastered in order to fulfill the patients' unique needs; **Interdisciplinary approach**... to work in cooperation with audiologists, ear, nose and throat specialists or any other professional to better serve the hearing impaired patient;

Table 1 provides the details, semester by semester, of the actual courses taught during the 3 years of the program.

Table I. Program Grid

YEAR 1 Semester 1 (Fall)						
Course	Hours \ week					
Course	Т	L				
Anatomy and Physiology of the Auditory System	2	2				
Hearing aids I : Introduction	3	2				
Applied Acoustics for Hearing Instrument Specialists	2	2				
Electronics for Hearing Aids	2	1				
Physical Activity and Health	1	1				
Literature and Composition	2	2				
English Second Language	Z	1				
Semester 2 (Winter)						
Course	Hours	\ week				
Course		L				
Physiology of the Auditory System	2	2				
Audiometry I	2	2				
Psychoacoustic	3	0				
Hearing aids II: Verification & Repair	3	3				
Physical Activity and Effectiveness	0	2				
Philosophy and Reasoning	3					
World Literary Genres	3	1				
YEAR 2 Semester 3 (Fall)						
Course	Hours \ week					
Course		L				
Pathology of the Auditory System	3	0				
Audiometry II	2	3				
Hearing aids III: Selection	2	2				
Human Development and Hearing Loss I	2	1				
Quebec Literature	3	1				
English Second Language Program Specific	2	1				
Complementary Course	3	0				



Students at work



Audiometer and test suite

Semester 4 (Winter)							
Cauma	Hours \ week						
Course		L					
Hearing Aids IV: Fitting and Programming	3	3					
Consolidation Seminars	2	3					
Audiometry III	1	3					
Human Development and Hearing Loss II	2	1					
The Human Being	3	0					
Public Communication	2	2					
Complementary Course	3	0					
YEAR 3							
Semester 5 (Fall)							
Course	Hours	\ week					
Course	Hours T	\ week L					
Course Aural Rehabilitation	Hours T 4	\week L 1					
Course Aural Rehabilitation On-Campus Internship	Hours T 4 0	\week L 1 4					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism	Hours T 4 0 3	Vweek L 1 4 0					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism Counselling	Hours <sup>7</sup> T 4 0 3 2	Vweek L 1 4 0 1					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism Counselling Management and Entreprenership	Hours 7 T 4 0 3 2 3	Vweek L 1 4 0 1 2					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism Counselling Management and Entreprenership Semester 6 (Winter)	Hours 7 T 4 0 3 2 3	Vweek L 1 4 0 1 2					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism Counselling Management and Entreprenership Semester 6 (Winter)	Hours T T 4 0 3 2 3 3 Hours T	Vweek L 1 4 0 1 2 Vweek					
Course Aural Rehabilitation On-Campus Internship Ethic and Professionalism Counselling Management and Entreprenership Semester 6 (Winter) Course	Hours <sup>2</sup> T 4 0 3 2 3 3 Hours <sup>2</sup> T	Vweek L 1 4 0 1 2 2 Vweek L					



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T: hours of theory classes per week L: hours of labs per week

A patient-centered approach being one of our core values, the reader will notice that 3 classes in psychologycounselling are part of our program. This was done in order to try to optimize the 'partnership' that the hearing health care professional must establish with his patient.

We also have the students practicing the different techniques involved in our field as soon as possible in the curriculum. That way, they can refine their skills prior to starting the internship taken in the last semester. For example, they start practicing otoscopy in the first semester as part of the Anatomy labs, and start taking ear impressions in the second semester.

Finally, the students have a 24-hour access (7 days a week) to the department (using a magnetic key). We believe that technical proficiency requires practice in order to be obtained.

As far as our physical layout, we are located on 2 floors. Our department

recording capabilities... this (among other thing) allows us to record students while practicing their interviews with patients;

- 1 repair-modification room;
- 1 central Noah database system allowing the students to get the information (video-otoscopy, audiometry, Verifit) saved under one server and easily accessible when they have to present case-studies.
- 1 Assistive Listening Devices room;

One of our unique features of our program is the involvement of our students outside of the classroom. We facilitate the achievement of other activities for students who want to volunteer in the community or for 'scientific' projects. For example,



Grinding and buffing

last year, we put together a series of information sessions to a local group of hearing impaired individuals. This was not only very informative for the hearing impaired in the community but it was a great experience for the students. We also had an information booth set up in the College lunch room to increase awareness about high level exposure to music (MP3, concerts, etc). Finally, a small group of students presented the results of their research projects in a poster session during the Quebec Audioprothesist's Convention. We believe these were great opportunities for students to learn 'stuff about the real world outside of the classroom'.

To conclude, although we are the youngest program in the country, our faculty includes people from different backgrounds all aiming to create among the students a culture of excellence and passion to improve the quality of life of the hearing impaired.



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## FEATURE



# Bates Technical College's Hearing Instrument Technology program: A Hands-on Education Foundation

By Chelsea Lindquist, with input from Marci Leong



About the Authors

Chelsea Lindquist is a Communications Specialist at Bates Technical College.

Dr. Marci Leong, Hearing Instrument Technician instructor at Bates Technical College in Tacoma, Wash., has taught at the college since 2005. Previous to teaching, she spent 18 years in medical audiology, specializing in cognitively-challenged adults. She holds a bachelor's degree in speech and hearing services from the University of Washington, a master's degree in audiology from the University of Washington, and a clinical doctorate from the University of Florida, Gainesville.

When Taner Johnson enrolled in Bates Technical College in Tacoma, Washington, he first thought he'd pursue a degree in practical nurse. But when he discovered the Hearing Instrument Technology (HIT) program, he switched gears. Through his research, Johnson found that a career in this field meant set hours and a greater earning potential while also providing a necessary service to those who need assistance.

Johnson enrolled in the hearing instrument program in 2014 and earned his Associate in Applied Science in a shorter time than others in the program, since he had taken prerequisites that overlapped with HIT courses. "It was a great atmosphere to learn in – especially with a working clinic on-site," he says, adding that he is a hands-on learner. The open-to-the-public, full-service hearing clinic is what HIT program instructor Marci Leong, AuD, says makes the program unique. "With a hands-on approach to learning through operating a full-service hearing aid clinic, we strive to achieve the best in education," says Dr. Leong. "We hope to challenge each student to work to their potential, step outside their comfort zones, and better their lives and those of individuals who are hard-of-hearing."

Bates Technical College is one of two hearing instrument technician programs in Washington State, and one of just four in the United States. As part of the program, students provide services to patients through a state-of-the-art clinic. The unique program teaches students how to conduct hearing tests, asses each individual's hearing problems, and provides solutions for those problems.

Dr. Leong has taught at the college for 10 years, and has been in the field since the 1980s. Her career in the industry was focused in medical audiology, working specifically with adults with special needs. She holds a bachelor's degree in speech and hearing services from the University of Washington, a master's degree in audiology, and a clinical doctorate (AuD) from the University of Florida, Gainesville.

"What I like most about teaching is sharing the students' energy as they learn and strive to better the profession," says Dr. Leong. "Being able to spend time with each patient and watch them interact with the students as they learn is fulfilling." The mission of the program, she says, is to inspire students to be their best in providing services to the hard-of-hearing community, and improve the quality and reputation of the profession. "I challenge each student to find their own unique traits that will make them successful in the hearing aid field," she adds. "By demanding excellence in two-year programs, my hope is to have specialists working alongside other hearing professionals and in non-traditional settings. My goal is to meld the clinical side of hearingaid fitting with the retail side, and bring more harmony to the profession," she explains.

With new students accepted in fall and spring each year, the program has a capacity of 15 students. Upon successful completion of the six-quarter program, students are equipped with a set of program outcomes, listed below:

Graduates are able to:

- Describe theoretical/conceptual and practical factors that impact the fitting of hearing aids.
- Perform accurate assessment for the purposes of hearing aid fitting.
- Explain various strategies and the rationale for use when recommending and selecting hearing aids for clients.

- Integrate family and other professionals in the management and care of clients with hearing loss.
- Identify hearing disorders and diseases for referral purposes.
- Describe the acoustical characteristics of a variety of hearing aids.
- Fit and adjust hearing aids.
- Follow established clinical verification protocols.

Dr. Leong notes that in addition to the program's learning outcomes, students are introduced to the business aspects of the industry, which helps them if they wish to open their own practice, she says. "Students come far and wide to learn the profession of hearing aid dispensing. We have had international students who have returned to their home countries to open their own practices," she adds. Dr. Leong notes her program is in high demand because of its positive reputation, and the hands-on learning experience her students receive working in the clinic.

Graduate Taner Johnson knows the value of learning in a setting that mirrors the workplace. "The hands-on aspect of this program really helped me prepare for my career," he says. "From the first week of class, we were working on students performing ear impressions, testing, and learning the equipment on the property. Then, we progressed to working in the clinic, when patients came in to see us. We learned from the students who were a few quarters ahead of us, and it was nice to see their progress, learn from their experiences, and apply it to our own education." Now working as a hearing aid specialist at Costco Wholesale, Johnson hopes to rise to manager level as a senior hearing aid specialist within the next few years.

To learn more about Bates Technical College, celebrating its 75<sup>th</sup> anniversary this year, and the Hearing Instrument Technician program, go to www.bates.ctc.edu/Hearing.

# ABOUT BATES TECHNICAL COLLEGE

Founded in 1940, Bates Technical College offers certificate and degree opportunities in nearly 50 career education programs, and serves approximately 3,000 career training students and 10,000 more community members annually in extended learning, distance learning, high school, and other programs. For more information, go to www.bates.ctc.edu, or call 253.680.7000.



# Ozarks Technical Community College (OTC) Hearing Instrument Sciences Program

By Tyler Reuthebuck, AAS



#### About the Author

Tyler Reuthebuck is a graduate of Ozarks Technical Community College Hearing Instrument Science Program graduating Summa Cum Laude. He is a Gulf War veteran having served in the USAF as Communication and Navigation systems specialist. Tyler brings nearly 20 years experience in business management, development and consulting including operations management of a retail hearing clinic owned by William Demont, the parent company of Oticon. Tyler assists with teaching students at labs, but focuses his efforts on recruiting, retention and job placement of students. He also is active in business development, networking and community involvement for the HIS program through presentations, to promote hearing health awareness. Tyler has a passionate, energetic and creative approach to promote the HIS program, industry and HIS profession.

The Hearing Instrument Science (HIS) program at Ozarks Technical Community College (OTC) has 33 students currently enrolled. The program has over 70 graduates placed throughout Missouri, Arkansas, Illinois, Kansas, California, and Pennsylvania. The program was founded in 2011 on a federal grant aimed at getting displaced workers, US Veterans, and underemployed workers into a new career. The grant has since concluded, and the program is working to recruit more students from outside of the state of Missouri. Graduates of the two year program earn an Associate of Applied Science (AAS) degree.

We currently have six audiologists and five Hearing Instrument specialists teaching for our program. Ted Venema, PhD has recently joined our faculty as a part time instructor. In addition to adjunct teaching at OTC, Lynn Royer, HIS with a MEd and Dianne Senay, AuD also work as field representatives for Unitron and Oticon, respectively. Elizabeth Fernandez, AuD, Lindsey Willbanks, AuD, Yon Wibskov, NBC-HIS, and Jackie Hartman, MA in audiology, work in private practice. Lisa Elmore, NBC-HIS works for Hearing Lab Technology. Richelle Kluck, AuD works for the VA. Robert Siegel, AuD works independently as a practice consultant. Rebecca Waldo, HIS has a BS in educational technology and is currently working on her MEd; she is the full time program director. Tyler Reuthebuck is a graduate of the HIS program at OTC, and he is our business development consultant. As a dedicated recruiter.

Tyler works on program promotion, business development, public relations, industry promotion, and job placement.

Full faculty bios can be found at: http:// www.otc.edu/alliedhealth/38974.php. In the first semester, students take



Lynn Royer with students

# REUTHEBUCK



The Bus



The Bus, Other Side



Inside the Bus

fundamental courses: Anatomy and Physiology of Auditory and Speech Systems, Acoustics and Psychoacoustics, Introduction to Audiometry, and Introduction to Hearing Instrument Components. In the second semester they take their first clinical practicum course, Hearing and Auditory Disorders, and Hearing Instrument Fitting Methods. In the third semester students take an ethics course, their second Clinical Practicum course, Advanced Audiometry, and Compression and Digital Features of Hearing Instruments. In the 4th and final semester they take their last Clinical Practicum course, Real Ear Measurements, and Hearing Healthcare Management & Marketing. Students also have 24 hours of general education courses required for AAS degree completion.

Our program has had to adapt and change quickly due to the nature of the market and age of the program. After many presentations and meetings within the college itself, we believe that the college now understands that the HIS program cannot be successful if treated like a traditional allied health program like nursing, dental assistants, etc. Many academic institutions are not geared for this type of program, but the Allied Health Department at OTC finally understands the challenges we face and have been most accommodating.

This fall, we have added a certificate option which allows students to obtain a certificate in Hearing Instrument Science after completing 15 hours of general education courses and two semesters of HIS courses. Additionally, students can opt to go a part-time route if they do not want to be enrolled fulltime. We have changed our program from the typical cohort model into a more self-paced enrollment model. Our intent is to make our program more attractive to prospective students in States that have less stringent licensure requirements than Missouri. We also believe our cohort model committed all students to a fast track and relatively rough road that might not be friendly to potential students who would make excellent hearing instrument specialists. Examples would include adult learners who are trying to change careers while serving as the primary source of income and caregiver for their families.

Missouri does not specifically require our two year AAS degree in order to obtain State licensure. We have found that many people are interested in formal training...but not necessarily the degree. Our certificate option serves

to broaden the range of appeal and creates an option for a different path to licensure. Regarding out of state students who reside in states with lower requirements, we can open the door for formal education when a degree isn't required.

Under the previous cohort model a prospective student had to apply and be accepted into the program prior to taking any HIS courses. Now, any student can take the first six HIS courses without acceptance or even the intent of pursuing the degree or certificate. There are no prerequisite classes for our program. The thought process is that a front office or Aud Tech could benefit by receiving formal education. We are all about flexibility and promoting formal education.

We believe the HIS Program at OTC is unique in the USA, in that we are reaching out on a *national level*. The program was designed from the start to be a *hybrid distance learning program*. It is blended, meaning there is a mix of completely online, and hybrid courses. Given that a student is an appropriate clinical site, a student in Texas could complete our program without moving to Missouri. We have also made an effort to promote not only our program, but the industry as a whole. Most of our graduates are from Missouri and bordering States like Arkansas and Kansas, but we do have students in more distant States. They have been placed in a wide variety of clinics from private practice, Miracle Ear, Beltone, Hearing Lab Technology, Costco, and even in the VA as Audiology Technicians.

Our program includes the possession of a large traveling bus with a fully functioning classroom and clinic. It includes all state of the art testing equipment: video-otoscope, tympanometer, real ear measurement system, ANSI test box, etc. For accessibility, it has a wheel chair lift as well. Historically we had used the bus for distance labs in St. Louis (OTC is located in Springfield). We also use it for community outreach, program promotion and health awareness events etc. The bus is a very expensive tool to operate, but it is also quite effective for creating interest in hearing and our profession.

In closing, we would like to mention another significant aspect to our program; like some other health care programs at the college level, we have

embraced and refined technology and processes to implement clinical simulation. During the first clinical practicum course, students are in a simulated hearing aid clinic with actors portraying a wide variety of clinical encounters and environments. While in the scenarios, students are recorded and monitored with high definition cameras and microphones while testing and interacting with clients. Once their scenarios are over, the students review the video and reflect on their own performances. An additional advantage of simulation is that the students can observe their peers and learn from each other, live from the control rooms. At the end of the day, the entire group of students gets together and goes through a debriefing session where they can talk through their experiences, good and bad; the instructor can highlight or reinforce important concepts. Adding simulation has greatly improved student confidence and performance.

Please visit our website for more information: http://www.otc.edu/ alliedhealth/13080.php.



# FEATURE Rowan College at Burlington County Hearing Instrument Sciences Program

By Charles A. Herb, BA, BC-HIS, ACA



#### About the Author

Charles (Chip) Herb is a second generation licensed HAD. He holds current licenses in Pennsylvania and New Jersey. Chip earned his BA degree at Stockton University in NJ in Psychology and Speech & Hearing Science. He has served on both the IIHIS and on BC-HIS Boards. He is a recipient of the Joel Wernick Award for Hearing Instrument Dispenser Education and currently serves as VP and Education Chair for NJAHHP and is a member of the New Jersey HAD licensing board HADEC.

Chip is the coordinator and one of the faculty instructors for the Hearing Instrument Science Program at Rowan College at Burlington County and maintains an active multi office dispensing practice in collaboration with Audiologists and ENT Physicians. In addition he is very proud that both his daughter Julie and son Brian are third generation members in the practice and have completed their program studies at RCBC.

#### INTRODUCTION

The Hearing Instrument Associate in Applied Sciences (AAS) degree program at Rowan College at Burlington County had a long beginning before opening its doors to its first class in the fall of 2007. It had been my lifelong goal to see hearing instrument practitioners gain access to a quality two-year degree program in hearing instrument sciences in the New Jersey region. I remembered back in early 1979 visiting the College of Audio Acousticians in Lubeck Germany and being so impressed with the high quality of their College program and labs. As soon as I returned to the US I went about inviting the head of the program, Dr. Werner Pastor, to visit the US and make a presentation to our Association. Many who attended were equally impressed; however, they also warned me of the difficulties that lay

ahead in seeing a College program in Hearing Instrument Technology come to fruition. As I would soon learn, they were correct in their counsel, and I learned the hard lesson that organizing a program was no easy task. Time went on and I found opportunities to serve on International Institute for Hearing Instrument Studies as a committee member, as well as on the National Board for Certification in Hearing Instrument Sciences. These



Charles Herb at Rowan College

would help shape and encourage me to fulfill the dream of a degree program for prospective students in the field that I had loved for over thirty years. As my good fortune would have it, members of our New Jersey State Association of Hearing Health Providers (NJAHHP) got on board and supported my efforts to see the goal through. We set up a working committee of both Hearing Instrument Dispensers and Audiologists, along with the additional help of an ENT Physician, Speech Pathologist and a Consumer Advocate. Now, the beginning of our Advisory Council was organized (The North East Academy of Applied Hearing Sciences).

The next hurdle to overcome was money! Fortunately my brother is a CPA and MBA and donated his time to help us form a 501 C-3 nonprofit foundation so we could legitimately solicit donations from industry. We succeeded and with much work we began to receive grants from Oticon, then Widex and later Phonak. I was surprised whenever I encountered reluctance to help us, as I always felt all too aware of the need for better preparatory education for hearing instrument dispensers.

At this point we needed a home for our program and as fate would have it one of my clients was a professor at Burlington County College in New Jersey; he was extremely supportive of the idea. Introductions were made to the College's vice president and to the dean of mathematics, sciences and technologies and we were ready to start the hard work of getting the program down to the specific courses and syllabuses. At this time IHS was having its Convention in Quebec Canada and I learned that Dr. Ted Venema was presenting. Upon finishing his course I set up a meeting to ask for his assistance in the formation of the program. Dr. Ted was the founder of the Conestoga College program in Canada and I am grateful for all his time and wisdom! It was our belief at that time, and still is, that an onsite program is optimum for creating an environment fostering maximum collaborative learning and clinical skills training. Success was at hand and by the spring of 2006 final approval for the program was granted from the College accreditations organization. Our first class enrolled for the fall of 2007 with a maximum class size of ten students due to space and clinical site limitations.

The summer of 2015 brought a change to the College, with Burlington County College becoming Rowan College at Burlington County. This brings new academic opportunities for students attending the College and greater ease for students interested in pursuing fouryear Baccalaureate degrees. As I look toward the future, I would like to see the program grow into a four-year BS degree in Hearing Instrument Sciences at RCBC, with an expansion of facilities and clinical sites so that additional students could benefit from the program.

As I currently serve as program coordinator for the program, I am proud of all we have accomplished and especially of our graduates who serve the profession with both skill and integrity. A formal description of our program and its mission follows from here:

Rowan College at Burlington County (RCBC), located in Mt. Laurel, New Jersey, offers an Associate of Applied Science (AAS) degree in hearing instrument sciences. The two-year degree program was created with the assistance of the Advisory Council of the Northeast Academy of Applied Hearing Sciences and was approved by the state of New Jersey. Student enrollment began in fall of 2007.

The Hearing Instrument Sciences (HIS)



Real Ear Measures at Rowan College



ANSI measures at Rowan College

program spans six-semesters, which consist of both academic and clinical components. Content areas of the academic component include: anatomy and physiology of the auditory and vestibular systems, communication and communication disorders, acoustics and psychoacoustics, auditory rehabilitation, client counseling and communication dynamics, and legal and ethical responsibilities. Experience at the clinical setting and lab is required for successful completion in competency-based clinical areas of auditory assessment and hearing aid selection, fitting, verification, outcome assessment, and infection control.

#### MISSION

The hearing instrument sciences program at RCBC endeavors to provide both an academic and clinical experience that will enable students to develop the knowledge and skills necessary for successful employment

within the spectrum of care and licensed scope of practice of a hearing aid dispenser. The program strives to develop caring and compassionate graduates who will provide hearing healthcare services, ethically, and in accordance with state practice regulations. It is anticipated that graduates, upon successful completion of their degree, will sit for both the practical and written state licensing exam. A primary function of the program is to teach the theoretical background and the laboratory skills to prepare graduates for successful passage of their state boards.

#### GOALS

The goals of the HIS program and its graduates include gaining knowledge of and learning:

- Hearing science and how human hearing functions
- Anatomy and physiology of human

hearing and balance

- Principles of acoustics and psychoacoustics
- Clinical skills in hearing assessment using appropriate instrumentation within the scope of practice of a hearing aid dispenser
- Ability to appropriately select amplification to fit and treat hearing impairment
- Performing methods for verification and validation of hearing aid fitting outcomes
- Gaining the ability to take ear impressions and select, adapt, and maintain ear molds
- Troubleshoot hearing aid problems and provide appropriate solutions
- Aural rehabilitation and communication theory skills when fitting amplification
- Assistive listening devices and their uses
- State and federal laws regulating the practice of hearing aid dispensing
- Apply appropriate effective infection control and sanitation practices as a hearing instrument dispenser
- Roles and scope of practice of other professional members of the hearing health care team

#### PROGRAM BENEFITS

- Broad perspective in hearing instrument sciences from an experienced interdisciplinary faculty instructional approach
- Significant hands-on training in both audio and dispensing technology
- AAS degree granted upon successful completion of all components of the program

General Education Courses				
Written & Oral Communications Mathematics (MTH 107 recommended) Natural Science (BIO 110/111 required) Social Science (PSY 101 required) Arts & Humanities (PHI 101 required) Additional General Education Requirements (SOC 101 required)			6 3 4 3 3 3	
Total			22	
		Program Courses	Credits	
HRS HRS HRS HRS HRS HRS HRS HRS HRS HRS	101 110 120 130 140 150 200 205 210 215 230 250	Introduction to Applied Hearing Sciences Acoustics and Psychoacoustics Anatomy and Physiology of the Auditory and Vestibular Systems Professional Patient Counseling and Communication Dynamics Communication and Communication Disorders Legal and Ethical Responsibilities Hearing Assessment I Hearing Assessment II Hearing Instrument Technology I Hearing Instrument Technology II Auditory Rehabilitation Clinical Practicum and Externship	1 4 3 3 2 4 4 4 4 3 4	
Total			39	
		Electives	3-4	
Total Required for Degree		64-65		

#### ADMISSION CRITERIA

The number of clinical sites limits enrollment into this program. All prospective students must schedule a personal interview with a program instructor to receive potential admission into the program. Therefore, admission to the college does not guarantee admission to the program. Applicants must be admitted to RCBC as degree-seeking students and must qualify for admission to the hearing instrument sciences program based on the following standards.

- 1. High school diploma or the equivalent.
- 2. Successful completion of all required remedial courses as determined by the results of the College admission placement exam or transfer credits.
- 3. Applicants will be accepted on a first-qualified, first-served basis until capacity is reached. Meeting all admission standards does not guarantee admission into the program.

# ADMINISTRATION AND FACULTY

RCBC's division of Health Sciences and an Advisory Committee administer the hearing instrument sciences program. The Advisory Committee consists of state-licensed hearing instrument dispensers, a state-certified speech pathologist, audiologists, and a nurse practitioner (DNP). Through an interdisciplinary management approach, the program benefits from a broad depth and scope of understanding and professional backgrounds. The faculty consists of the hearing healthcare professional faculty who instruct the approved curriculum. The clinical faculty consists of the licensed hearing aid dispensers, licensed audiologists, a speech pathologist, and a nurse practitioner (DNP).

For more information about the hearing instrument sciences program contact the Admission Office at 609-894-9311, visit the website, www.rcbc.edu or contact the program coordinator, Charles A. Herb at chipaherb@yahoo.com.

#### FAST FACTS ABOUT ROWAN COLLEGE AT BURLINGTON COUNTY

The following list summarizes the goals of Rowan College at Burlington County.

- 1. Provide an educational experience that encourages the individual to think critically and to examine and clarify ethical, personal and political values.
- 2. Prepare individuals for transfer to four-year colleges, for employment in business and industry and for new career skills.

- 3. Enable individuals to strengthen their academic skills through adaptive learning, counseling and academic support.
- 4. Enrich the quality of life by sponsoring cultural, recreational and personal interest activities through an extensive program of community and continuing education.
- 5. Engage in partnerships with the private and public sectors and to implement programs that address their identified employment needs.
- 6. Provide state-of-art technologies in the education and training of all individuals through an appropriate mix of delivery systems.

# Spokane Falls Community College Hearing Instrument Specialist Program

By Chantal Hammers, MA, CCC-A



#### About the Author

Chantal Hammers is a tenured, full-time instructor and has been on faculty for the Hearing Instrument Specialist Program at Spokane Falls Community College for 14 years. She earned her AA and AAS degrees at Spokane Falls Community College in 1994, and began her career as a sign language interpreter. She then went on to earn her BA in Communication Disorders at Eastern Washington University in 1999, and then her MA in Speech & Hearing Sciences at Washington State University. Chantal is an Audiologist who has also served on the Board of Directors for Nexus, a center for the deaf and hard-of-hearing in Spokane, Washington.

The Hearing Instrument Specialist (HIS) training program at Spokane Falls Community College (SFCC) was developed in 1999 for the purpose of meeting the heightened need of formally trained dispensers who can effectively fit today's highly advanced digital products. Graduates of the program are awarded an Associate in Applied Science two-year degree (A.A.S.) The program consists of six quarters of instruction with summer quarters off between academic years.

Like most college programs, the HIS program at SFCC utilizes an advisory committee composed of industry employers and employees to advise the faculty regarding its program of study. The current committee chair is J. Thomas Rulon, MD, a retired ENT and the namesake of the program's hearing center located on the Spokane campus (The Rulon Center for Hearing Instrument Studies).

Our program regularly enrolls 40-45 students divided between the first and second academic years. The popularity of our program results in a waiting list every Fall Quarter, and prospective students are encouraged to apply early in the previous academic year for admission in September. To date the program has graduated nearly 200 students. Our program seeks to train dispensers to meet the needs of a wide variety of dispensing settings from medical, audiological, traditional retail, big box stores and private practice. "Our mission is to guide all students toward the achievement of professional excellence, while equipping them to function in all hearing health care settings."

The program employs two full-time audiologist instructors and a clinical supervisor/hearing instrument specialist with a Bachelor's degree in Speech and Hearing. Dr. Rulon aids one of our instructors in the auditory disorders class and is available throughout the students' educational program for their questions and discussion. The curriculum is composed of 19 classes with a mixture of classroom, lab and clinical experiences totaling 97 quarter hours of college credit. The graduate will have also completed more than 500 clinical lab hours. Emphasis is given to both technical hard skills, as well as the soft employment skills related to the management of hearing healthcare patients and offices.



Classroom instruction



John Johnson in action



John Johnson makes a point

*Classes include:* two audiometric testing classes, several class opportunities to learn various types of instrument function as well as hearing aid fitting verification, two hearing healthcare management classes, one sales and marketing class to teach students how to encourage patient compliance with dispenser recommendations, two hearing instrument technology classes covering the basic and advanced sound processing issues that surround the selection of amplification, and one class emphasizing coupler mechanics/

physics and assistive technologies/ ALDs. In addition to these are classes and lessons that deal with interpersonal communication in a hearing healthcare setting and the special needs, dynamics and demographics of people with hearing impairments. All classes build on the previous classes and are efficiently arranged to accomplish the most effective training possible within a six-quarter schedule. Our textbooks include well-known and established references, many of which are in their second, third and four edition of publication.

The program employs a hybrid distance format, wherein the curriculum resides on-line in a cloud and within a learning platform named Canvas; it also includes quarterly visits to the campus for hands-on hearing aid specialist instruction and the assessment of student skills. Our quarterly campus student visits are referred to as sessions, which include a first-quarter Orientation session. The typical student takes three major classes every quarter and participates in a cooperative work experience in their last academic quarter. This hybrid distance format allows students to complete hands-on

lab activities in their local communities, while incorporating the benefits of formalized college training. It employers allows identify good to prospective employees, while placing the responsibility of formal education and training on the college. All students are required to be both mentored

and supervised by the SFCC program's hearing center in Spokane, or else they must acquire a mentor within the industry to provide supervision and access to equipment and patients for the completion of lab and clinical requirements. Most of our students are residents of Washington State with some out-of-state and some international students having completed the program.

Our students range widely in relevant previous educational experience and many hold two-year, four-year or graduate degrees. Students come from a pool of people who have been identified by their employers who desire to have highly-trained and licensed professional staff members, as well as general public members who are looking for first-time career fields or retraining opportunities. Some of our students are already licensed and some have been owners/managers of small networks of dispensing offices, who decide to take the training for self-improvement and the updating of their skills and knowledge. The program enjoys a state licensing pass rate in the high 90s percentile and our graduates are in high demand. Many of our graduates rank nationally within their dispensing



Real ear measures at SFCC

networks within a few months of graduation. Many of our graduates go on to be managers and leaders within their respective organizations.

An accelerated 9-month process to our two-year degree is available to those with four-year bachelor degrees in Speech and Hearing or Communicative Disorders from accredited four-year colleges/universities. Paid work-study positions are available to those who qualify. Those qualified for military educational benefits are also part of our student body. The program has graduated several international students who have gone on to complete more advanced degrees or have taken their skills back to their countries of origin.

Spokane Falls Community College is accredited by the Northwest Commission on Colleges and Universities (NWCCU). This is an independent, non-profit membership organization recognized by the U.S. Department of Education as the regional authority on educational quality and institutional effectiveness of higher education institutions in the seven-state Northwest region of Alaska, Idaho, Montana, Nevada, Oregon, Utah, and Washington. Please visit their website for more information http://www.nwccu.org/index.htm.

For more information about program application forms and the process regarding the SFCC Associate in Applied Sciences (A.A.S.) twoyear degree in Hearing Instrument Specialist, please visit our website at www.spokanefalls.edu/HIS.



Students in practice

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