

## CURRICULUM VITAE

### Diana S. Dabby

Professor

Electrical Engineering and Music

Music Program Director

Olin College of Engineering

#### **Professional Preparation**

Ph.D. 1995 MIT Electrical Engineering and Computer Science

S.M. MIT Electrical Engineering and Computer Science

M.F.A. Mills College Music

B.Eng. City College of New York Electrical Engineering

A.B. Vassar College Music

#### **Appointments**

Sept 2024 – May 2025	Harvard Radcliffe Fellowship award: Lillian Gollay Knafel Fellow at Harvard Radcliffe Institute for Advanced Study. <a href="https://www.radcliffe.harvard.edu/news-and-ideas/harvard-radcliffe-institute-announces-2024-2025-fellows">https://www.radcliffe.harvard.edu/news-and-ideas/harvard-radcliffe-institute-announces-2024-2025-fellows</a>
July 2022 – present	MIT Research Affiliate, Lab for Information and Decision Systems
Sept 2020 - present	Professor of Electrical Engineering (EE) and Music, Olin College of Engineering. Founding Faculty member of the College who has taught 98 courses in EE and Music, Fall 2001 – present. Supervised 30 Independent Studies & 37 senior Capstones (music). Supervised and supported 30 undergraduate summer interns 2005-23 (EE). LinkedIn profile: <a href="http://www.linkedin.com/in/diana-dabby-3aab16181">www.linkedin.com/in/diana-dabby-3aab16181</a>
2010 – present	Music Program Director, Olin College of Engineering. Founder and developer of the <a href="#">Music Program at Olin College of Engineering</a> (2002 – present). Rehearsed and produced 323 concerts, performing as a pianist in 77, most recently May 2023 <a href="#">OCO Expo Concert</a> . Created 147 arrangements of symphonic works for the <a href="#">Olin Conductorless Orchestra</a> (10-22 players).
2005 – Aug 2020	Associate Professor of Electrical Engineering and Music, Olin College of Engineering
2000 – 2021	MIT Research Affiliate, Lab for Information and Decision Systems
2000 – 2005	(Founding Faculty) and Assistant Professor of Electrical Engineering and Music, Olin College of Engineering
Jan – May 2002	Adjunct Graduate Faculty, The Juilliard School
Jan – Dec 2000	University Fellow in Electrical Engineering and Computer Science, Tufts University
1999	Visiting Lecturer in Electrical Engineering and Computer Science, Tufts University
1999	Visiting Lecturer in Music, Tufts University
1998	Visiting Lecturer in Electrical Engineering and Computer Science, MIT
1998	Visiting Lecturer in Electrical Engineering and Computer Science, Tufts University
1997 – 1998	Visiting Assistant Professor of Music, Middlebury College
1997	Artist in Residence, MIT
1997	Summer Teaching Fellow, Tufts University
1995 – 1997	Postdoctoral Associate in Electrical Engineering and Computer Science, MIT

## **Intellectual Vitality: Research—Patents and Web Applications**

Dabby, D.S. (2024). Variation of Musical Compositions by Expanded Chaotic Mapping combined with Enhanced and Contrary Interval Methods. US Provisional Patent Application No: 63/575,041. Filed 5 April 2024.

Dabby, D.S. (2023 - present). Web Application [www.cantovario.com](http://www.cantovario.com). CantoVario uses algorithms based on the below patents that create musical variations of original works. A one-minute video produced for CantoVario's NSF Innovation Corps (I-Corps) National Teams award introduces the technology: [What is CantoVario?](#) A new web app produces multitrack song variations in the MIDI format as shown in this private video [CantoVario MIDI](#). A Chaos+Music Science Museum Exhibit prototype video can be accessed [here](#).

Dabby, D.S. (2022, 2023). Algorithm-generated variations of original songs for tangible and digital products. US Utility Patent Application No: 14/496,008. Filed 27 October 2023. US Provisional Patent Application No: 63/420,364. Filed 28 October 2022.

Dabby, D.S. (2021). EnginArt™. Computer software as a service for processing digital music files; computer software as a service for creating and editing music and sounds; music-composition software as a service. Registration No. 4698653 United States Patent and Trademark Office. Amended federal trademark registration for the mark EnginArt on the Principal Register 12 October 2021.

Dabby, D.S. (2021). Method of Creating Musical Compositions and other Symbolic Sequences by Artificial Intelligence. US 11024276 United States Patent and Trademark Office, issued 1 June 2021. Continuation-in-Part.

Dabby, D.S. (2021). CantoVario™. Computer software as a service for processing digital music files; computer software as a service for creating and editing music and sounds; music-composition software as a service. Registration No. 4656199 United States Patent and Trademark Office. Amended federal trademark registration for the mark CantoVario on the Principal Register 11 May 2021.

Dabby, D.S. (2020). Method and Apparatus for Computer-Aided Mash-up Variations of Music and other Sequences, Including Mash-up Variation by Chaotic Mapping. US 10614785 United States Patent and Trademark Office, issued 7 April 2020. Provisional filed 26 September 2017.

Dabby, D.S. (2016). Method and Apparatus for Computer-aided Variation of Music and other Sequences, including Variation by Chaotic Mapping. US 9286877 United States Patent and Trademark Office, issued 15 March 2016. Continuation-in-Part to cover applications.

Dabby, D.S. (2016). Method and Apparatus for Computer-aided Variation of Music and other Sequences, including Variation by Chaotic Mapping. US 9286876 United States Patent and Trademark Office, issued 15 March 2016. Provisional filed July 2010, Utility and updated Provisional filed July 2011. Preliminary amendment filed January 2012.

Dabby, D.S. (2015). EnginArt™. Computer software for processing digital music files; computer software for creating and editing music and sounds; music-composition software. Registration No. 4698653 United States Patent and Trademark Office, registered trademark 10 March 2015.

Dabby, D.S. (2014). CantoVario™. Computer software for processing digital music files; computer software for creating and editing music and sounds; music-composition software. Registration No. 4656199 United States Patent and Trademark Office, registered trademark 16 December, 2014.

Dabby, D.S. (2011-2014). CantoVario Web Application based on earlier algorithms to create musical variations of both audio and MIDI songs. Coded by James Rising.

Dabby, D.S. (1997). Method of and apparatus for computer-aided generation of variations of a sequence of symbols, such as a musical piece, and other data, character or image sequences. US 5606144 United States Patent and Trademark Office, issued 25 February 1997.

### **Intellectual Vitality: Research—Publications**

Lee, C., Govindasamy, S., Dabby, D.S., Ruvalo, P. (2021). A Multidisciplinary Mid-Level Electrical and Mechanical Engineering Course. Peer-reviewed and accepted for publication in the Proceedings of the 2021 ASEE (American Society for Engineering Education) Annual Conference, Long Beach, CA.

Selected for the ASEE Multidisciplinary Engineering Division, *Best Paper Award*, “in recognition of outstanding excellence in a technical paper at the 2021 ASEE Annual Conference.”

Dabby, D.S. (2019). The Engineers’ Orchestra: a conductorless orchestra for developing 21<sup>st</sup> century professional skills. Peer-reviewed and accepted for publication in the Proceedings of the 2019 ASEE (American Association for Engineering Education) Zone 1 International Conference, Niagara Falls, New York.

Selected as ASEE Zone 1 *Best Paper* for 2020. \$1000 cash award plus invitation to present at the ASEE National Conference as part of the Zones 1-4 “Best Paper” session, Montreal, Canada, June 21-24, 2020 (virtual due to covid).

Dabby, D.S. (2017). The Engineers’ Orchestra—a conductorless orchestra for our time. Book chapter in D. Baraiktarova & M. Eodice (Eds.), *Creative ways of knowing in engineering* (pp. 23-58). Cham, Switzerland: Springer Nature. Peer-reviewed book chapter. (771 Accesses from Springer Nature).

Dabby, D.S. (2008). Creating Musical Variation. *Science*. 320 (5872), 62-3. Invited *Perspectives* article.

Dabby, D.S. (2003). En Route To Engineering: Nabokov, Lepidoptera, Dynamics. In *ASEE Conference Proceedings, 22-25 June 2003*. Nashville, TN: ASEE. pp. 8.482.1 - 8.482.9. Peer-reviewed conference paper.

Dabby, D. (2002). Leonardo as Artist, Scientist, Engineer. In *ASEE Conference Proceedings, 16-19 June 2002*. Montreal, Canada: ASEE. pp. 7.810.1 - 7.810.11. Peer-reviewed conference paper.

Dabby, D.S. (2001). Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach and Borodin. In *ASEE Conference Proceedings, 24-27 June 2001*. Albuquerque, NM: ASEE. pp. 6.539.1 - 6.539.13. Peer-reviewed conference paper.

Dabby, D.S. (1998). A Chaotic Mapping for Music and Image Variation. In *Proceedings of the Fourth Experimental Chaos Conference, 6-8 August 1997*. Boca Raton, FL: World Scientific.

Dabby, D.S. (1996). Musical Variations from a Chaotic Mapping. *Chaos: A Journal of Nonlinear Science* (American Institute of Physics), 6, 95-107. Peer-reviewed journal paper.

### **Intellectual Vitality: Research—Grants**

Research Experiences for Undergraduates (REU) Supplement Grant Award. Managing Division Abbreviation: TI. “Development of a Novel Audio Technology that Applies Dynamic System Variability to Create Musical Variations for Personal and Public Applications.” Diana Dabby, PI. Proposal No. 2430997. Award No. (FAIN): 1941526. Summer 2024 support for Wellesley summer research student. 8K

Research Experiences for Undergraduates (REU) Supplement Grant Award. Managing Division Abbreviation: TI. “Development of a Novel Audio Technology that Applies Dynamic System Variability to Create Musical

Variations for Personal and Public Applications.” Diana Dabby, PI. Proposal No. 2329978. Award No. (FAIN): 1941526. Summer 2023 support for 2 students, one from MIT and the other from Princeton University. 16K

Olin Integrated Project Fund. Diana Dabby and Andrew Chang ‘24. Designed, developed, and built the [Music@Olin](#) website for prospective students, their families, as well as all Olin students, alumni, staff and faculty. Award date: April 2021. 4K.

NSF Partnerships for Innovation—Technology Translation (PFI-TT) Grant Award. Managing Division Abbreviation: IIP. “Development of a Novel Audio Technology that Applies Dynamic System Variability to Create Musical Variations for Personal and Public Applications.” Diana Dabby, PI. Proposal No. 1941526. Award No. (FAIN): 1941526. Award date: June 1, 2020. 250K

Olin Integrated Project Fund. Diana Dabby and Luis Zuniga ‘21. The Engineers’ Conductorless Orchestra website Hub. Award date: March 2019. 4K. [The Engineers' Conductorless Orchestra](#)

NSF Innovation Corps (I-Corps) Teams Grant Award. Managing Division Abbreviation: IIP. “I-Corps: Harnessing Chaotic System Variability.” Diana Dabby, PI. Proposal no. 1924305. Award No. (FAIN): 1924305. Award date: April 4, 2019. 50K

Travel grant for further Customer Discovery by CantoVario, administered by MIT I-Corps and funded by NSF. Award date: November 2018. 1.5K.

Olin Summer Innovation and Research Grants, Summers 2014-17 and 2005-09. 4K/summer for a student programmer to code algorithms disclosed in the above patents.

“Mix and Stir: musicians, composers, poets in concert.” Babson, Olin, Wellesley (BOW) Presidential Innovation Grant. Mix and Stir featured BOW student and faculty musicians, composers, and poets in two cross-disciplinary musical/literary events, enabling them to collaborate in a new venue, as part of a new Olin concert series. Awarded 2015. 6K.

### **Intellectual Vitality: Music—Premières, Commissions, Performances, and Recordings**

(YouTube links provided where available.)

Dabby, D.S. (2023-24). Original music for video interview to accompany Thomas, J., Miller, R.K., and Yu, Haiqin (forthcoming). “Attaching the Wings of Kindness and Beauty to Engineering Education—‘Golden Courses’ Interview Series: Pursuing Truth, Kindness, and Beauty.” Accepted for publication by *The Journal of East China Normal University (Educational Sciences)*.

Dabby, D.S. (2021). Composed music for the Chinese Ministry of Education video “[The Olin Effect in School Management on Emerging Engineering Education: Small in Size but Large in Impact](#)—The second interview with Olin College of Engineering President Richard K. Miller.” Produced by the Fulcrum Team led by Helen Haste (Visiting Professor at Harvard), Yu Haiqin (Visiting Scholar at Harvard), and Justin Thomas (Harvard Masters graduate student). Posted on the official WeChat account of the HEEC/Secretariat of China Engineering Education Accreditation Association (CEEAA).

Dabby, D.S. (2018). [Parallel Lives—Distant Mirrors](#) for piano, bass and alto flutes, voice, and soundtrack. World première, Wellesley College Concert Series. Performed by Yong Su Clark (flutes), P. Lucy McVeigh (mezzo-soprano), and Jongsun Lee (piano). The fifth movement presents a concert of “Variations and Shadows” where seat location determines what the audience hears. The world première performance utilized sound-focusing technology developed by Kevin Brown of Brown Innovations. November 2018.

Dabby, D.S. (2017). [Who was Wissam Eid?](#) for violin, cello, and piano. World première, Ann Schaffner Concert Series, Olin College of Engineering. One of 14 faculty and student commissions from a Presidential Innovation

Grant (Babson, Olin, Wellesley) performed by Gabriela Diaz (violin), David Russell (cello), and Lois Shapiro (piano). April 2017.

Dabby, D.S. (2013). [Fuente y Variación](#) (source and variation) for solo piano. Recorded by pianist Jongsun Lee at Mozart Hall, Seoul, South Korea. December 2013.

Dabby, D.S. (2013). *Fuente y Variación* (source and variation) for piano. World première, Youngsan Art Hall, Seoul, South Korea. Commissioned by pianist Jongsun Lee for her invited artist concert sponsored by Youngsan Art Hall. May 2013.

Dabby, D.S. (2013). [Tre Studi di Colore](#), three études for solo piano that metaphorically capture the Blue-Red divide in America: Azzurro (Blue) for Right Hand alone, Rosso (Red) for Left Hand alone, and Violetto (violet) for Hands Together. Recorded by pianist Jongsun Lee at Mozart Hall, Seoul, South Korea. December 2013.

Dabby, D.S. (2013). *Tre Studi di Colore*, three études for solo piano. Asian première, Youngsan Art Hall, Seoul, South Korea. Performed by Jongsun Lee for her invited artist concert sponsored by Youngsan Art Hall. May 2013.

Dabby, D.S. (2012). *Tre Studi di Colore*, three études for solo piano. World première, Wellesley College Concert Series. Commissioned by the Jubilee Trio for their Houghton Chapel concert, Wellesley College. November 2012.

Dabby, D.S. (2011). [September Quartet](#)—a five-movement work for chorus, winds, brass, percussion, violin and piano—was commissioned by Tufts University for the Tufts New Music Ensemble, John McDonald, Director, in commemoration of the Tufts Sesquicentennial. An integral part of the piece involves the gradual illumination of the 246 names representing the non-hijacker passengers and crew members of the four planes obliterated on 9/11, hence the name September Quartet. In the process of establishing this new link, the previous 500 views and comments were lost.

Dabby, D.S. (2009). *11*, part of a larger Tufts University commission. Distler Performance Hall, Granoff Music Center, Tufts University. Performed by Joanna Kurkowicz, violin, and John McDonald, piano. April 2009.

Dabby, D.S. (2008). *A Fire's Tale* for piano. World première, Boyer Hall, Temple University. Commissioned by pianist Martha Schrepel for her Temple University Final Doctoral Recital. March 2008.

Browning, F. (2007, Dec. 29). [New Space Promotes Intersection of Art and Science](#). [Radio Broadcast].

Capps, D. and Bradley, L. (2007). *Con/cantation: (chaotic variations)*, a computer-assisted theme and variations performance project that applied the chaotic mapping technique devised by (Dabby 1996) to make variations of a dance by David Capps. Dr. Josh Stuart coded changes to the music algorithm to suit choreography. Sponsored by the Radcliffe Institute for Advanced Study. April 2007.

Dabby, D.S. (2006). *Aerial Silk* for solo piano to accompany 'aerial silk' performer Matthew Brouillard. Sorenson Theater, Babson College, on behalf of the Sharing Foundation. December 2006.

Brady-Myerov, M. (2004, July 9) "Variations on Chaos – Math and Music of Diana Dabby." [Radio Broadcast]. Interview/Performance, NPR member station WBUR.

Dabby, D.S. (1999). *Trio Sonata* for flute and piano. Foy Concert Hall, Moravian College, Bethlehem, PA. Performed by the Kani-Schrepel Duo. February 1999.

Dabby, D.S. (1998). *Invention for Two Hands*. World première (composer as pianist), Center for the Arts, Middlebury College. May 1998.

Dabby, D.S. (1997). *Trio Sonata* for flute and piano. World première, 14<sup>th</sup> Annual Musicfest, Bethlehem, PA. Commissioned and performed by the Kani-Schrempel Duo. August 1997.

Dabby, D.S. (1996). *Islamorada* for percussion ensemble and piano. World première (composer as pianist), Jordan Hall at New England Conservatory of Music. Commissioned by the New England Conservatory Percussion Ensemble, Frank Epstein, Director. April 1996.

Dabby, D.S. (1993). *Manhattan EightSixSix* for piano and tape. World première (composer as pianist), The Cube, MIT. May 1993.

Dabby, D.S. (1990). *Lopez* for piano and tape. World première (composer as pianist), The Cube, MIT. May 1990. Tanglewood première (composer as pianist), Tanglewood Festival for Contemporary Music. August 1990.

### **Intellectual Vitality: Music—Orchestral Arrangements**

147 Orchestral Arrangements for the 10-22 players of the Olin Conductorless Orchestra (OCO).

As a self-directed orchestra, OCO selects its own repertoire, often voting for symphonic works written for orchestras multiple times its size. Since Olin is a small school (350 students), OCO has always had an eclectic array of instruments. This nonstandard instrumentation—coupled with unbalanced wind, brass, and string sections—necessitate the orchestral arrangements I’ve created.

Links to sample recordings also appear in this CV under the subsequent heading, “Intellectual Vitality: Music—the Olin Conductorless Orchestra.”

Dabby, D.S. (2024). Six arrangements of the following works, each of which necessitated two different arrangements due to student illness, thus 12 arrangements in total: Ibert Introduction, Parade, Valse from *Divertissement*; Takashi Yokomatsu Divination by Snow from *White Landscapes*; Dvorak *Symphony no. 9 in e minor, op. 95* (Allegro con fuoco); John Powell/Sean O’Loughlin How to Train your Dragon.

Dabby, D.S. (2023). [An arrangement of the Mussorgsky-Ravel Pictures at an Exhibition](#) (Promenade, Il vecchio castello, Tuileries, Cum mortuis in lingua mortua, La cabane sur des pattes de poule) for 2 flutes, clarinet, alto sax, tenor sax, trumpet, 2 trombones, piano, violin, and percussion.

Dabby, D.S. (2023). Ten arrangements of the following works: Mussorgsky/Ravel selections from *Pictures at an Exhibition*; Joe Hisaishi/PH Chen A Town with an Ocean View (from *Kiki’s Delivery Service*); Bizet Aragonaise, Séguédille, Les Toréadors from *Carmen Suite No. 1*; Dvorak: *Symphony no. 9 in e minor, op. 95* (Allegro con fuoco).

Dabby, D.S. (2022). Eleven arrangements of the following works, some of which were arranged for two different instrumentations, due to student schedule conflicts: Mozart *Symphony no. 40 in g minor* (Molto allegro); Johann Strauss II *Frühlingsstimmen*; Vaughan-Williams *Variants of ‘Dives and Lazarus’* (Variants 1-2); John Mackey *Night on Fire*; Holst *Second Suite for Military Band* (Song without Words), Grieg *From Holberg’s Time* (Sarabande) – 2 different arrangements, Mozart Overture to *Idomeneo* – 2 different arrangements, Percy Grainger “Rufford Park Poachers”, and Jason Hurwitz Epilogue to *La La Land*.

Dabby, D.S. (2021). Three arrangements of the following works: Holst *A Somerset Rhapsody*; Tchaikovsky “Élégie” from *Serenade for String Orchestra in C, op. 48*; and Jo Hisaishi and P.H. Chen “A Town with an Ocean View” from *Kiki’s Delivery Service*.

Dabby, D.S. (2019-2020). Thirteen arrangements of the following works, some of which were arranged for three different instrumentations, due to student schedule conflicts: Beethoven *Egmont Overture* – 3 different arrangements; Dvorak *Symphony no. 8 in G major, Op. 88* (Allegro con brio) – 3 different arrangements; Holst

Intermezzo from the *First Suite for Military Band*; Fauré *Pavane* – 3 different arrangements; John Mackey *Night on Fire*; Justin Hurwitz/Robert Longfield *La La Land*; and Fauré *Élégie*.

Dabby, D.S. (2018-2019). Ten arrangements of the following works, some of which were arranged for two different instrumentations, due to Junior semester away: [Mozart Wind Serenade in Bb major, K. 361 \(Rondo\)](#) – 2 different arrangements; Tchaikovsky “Waltz” from the *Serenade for String Orchestra*, op. 48 – 2 different arrangements; Mozart Overture to *Così fan tutte*, K. 588; [Berlioz “Marche Hongroise” from La Damnation de Faust](#) – 2 different arrangements; K. Badelt/T. Ricketts Medley from *Pirates of the Caribbean* – 2 different arrangements; and Arturo Marquez *Danzon No. 2*.

Dabby, D.S. (2017-2018). Six arrangements of the following works: Dvorak *Serenáda in d minor, Op. 44* (Finale); Elgar *Serenade for String Orchestra in e minor*, op. 20 (Allegro Piacevole and Allegretto); Mozart Overture to the *The Marriage of Figaro*, K. 492; Schumann *Symphony No. 1 in Bb major, “Spring”, Op. 38* (Andante un poco maestoso—Allegro molto vivace); Puccini *Preludio Sinfonico* in A Major; and Elmer Bernstein theme song from *The Magnificent Seven*.

Dabby, D.S. (2016-2017). Six arrangements of the following works: Shostakovich “Waltz No. 2” from the *Suite for Variety Orchestra*; Mozart Overture to the *Magic Flute*; Louis Prima/Benny Goodman/O’Brien *Sing, Sing, Sing*; [Gershwin An American in Paris](#) (in an abridged version and a complete version, each for a different instrumentation); and J. Powell/S. O’Loughlin “This is Berk” from the movie *How to Tame Your Dragon*.

Dabby, D.S. (2015-2016). Seven arrangements of the following works: Dvorak *Serenáda in d minor, Op. 44* (Minuet in F); Suk *Serenáda in Eb major, Op. 6* (Andante con moto); [Beethoven Overture to the Creatures of Prometheus](#); [Saint-Saëns Danse Bacchanale from Samson et Dalila](#); A. Silvestri, G. Ballard, and J. Brubaker Suite from the *Polar Express*; Rimsky-Korsakov *Scheherazade* (The Sea and Sinbad’s Ship); [Dvorak Symphony No. 9 in e minor “From the New World”, Op. 95 \(Allegro con fuoco\)](#).

Dabby, D.S. (2014-2015). Seven arrangements of the following works: Dvorak *Serenáda in d minor, Op. 44* (Moderato, quasi marcia); Dvorak *Serenáda in E major, Op. 22* (Moderato); J.S. Bach/Holst *Fugue à la Gigue*; Ramin Djawadi Theme song from *Game of Thrones*; Wagner *Ride of the Valkyries*; Prokofiev Montagus and Capulets (from *Romeo and Juliet*, op. 64ter); and Bernstein *Symphonic Dances* (Prologue and Somewhere).

Dabby, D.S. (2013-2014). Six arrangements of the following works: Copland *Appalachian Spring* (in abridged and complete versions, the latter for 2 different instrumentations); Debussy *Petite Suite*; Saint-Saens *Le Carnaval des Animaux* (Introduction et Marche Royale du Lion, Le Cygne, and Fossiles); and Dvorak *Symphony No. 8 in G major, op. 88* (Allegro, ma non troppo).

Dabby, D.S. (2012-2013). Six arrangements of the following works: Beethoven *March alla Turca*, op. 113; Stravinsky *Suite No. 2*; [Marquez Danzon No. 2](#); Mussorgsky and Mussorgsky-Ravel *Pictures at an Exhibition* (Promenade and Old Castle); Saint-Saens *Danse Macabre*; and Mozart *Wind Serenade in Bb major, K. 361* (Largo-Molto Allegro).

Dabby, D.S. (2011-2012). Eight arrangements of the following works: Mozart *Symphony no. 35 in D major, K. 385, “Haffner”, (Allegro con spirito)*; Beethoven *Symphony no. 7 in A major, Op. 92* (Allegretto); John Williams *Across the Stars* (from Star Wars Episode II “Attack of the Clones”); Tchaikovsky “Waltz Finale and Apotheosis” from *The Nutcracker*; Haydn *Symphony no. 45 in f# minor, Hob. I:4*; Mozart *Serenade in Eb major, K. 375* (Finale: Allegro); Piazzolla *Oblivion*; and John Williams Theme from *Jurassic Park*.

Dabby, D.S. (2010-2011). Seven arrangements of the following works: J.S. Bach *Orchestral Suite No. 4* (Overture); Copland *Rodeo* (Hoe-down); Holst “Jupiter” from *The Planets*; Lee Jisu *Arirang Rhapsody*; Rimsky-Korsakov “The Sea and Sinbad’s Ship” from *Scheherazade*; Suk *Serenade in Eb for String Orchestra, Op. 6*; and Dvorak *Symphony No. 9 in e minor, “From the New World”, (Allegro con fuoco)*. Composite video excerpts ([Holst: Jupiter from The Planets and Lee Jisu: Arirang Rhapsody](#)).



Dabby, D.S. (2009-2010). Six arrangements of the following works: Handel “Alla Hornpipe” from *Water Music*; Mozart Overture to the *Marriage of Figaro*; Beethoven *Symphony No. 4 in Bb major* (Adagio-Allegro vivace); Schumann *Symphony No. 2 in C major* (Adagio espressivo); Smetana *The Moldau*; and Mussorgsky *Night on Bald Mountain*.

Dabby, D.S. (2008-2009). Nine arrangements of the following works: Saint-Saens *Danse Macabre* (3 arrangements, each for a different instrumentation); Beethoven *Symphony No. 7 in A major*, Opus 92 (Allegretto) - 5 arrangements, each for a different instrumentation; and Mussorgsky-Ravel *Pictures at an Exhibition* (Promenade I, Gnomus, Promenade II, Il vecchio castello, Promenade III, Tuileries, Limoges).

Dabby, D.S. (2007-2008). Ten arrangements of the following works: [Haydn Symphony No. 48 in C major, “Maria Theresa”, \(Allegro\)](#) – 3 arrangements, each for a different instrumentation; Beethoven *Symphony No. 8 in F major, Op. 93* (Allegro vivace e con brio) – 2 arrangements, each for a different instrumentation; Beethoven *Symphony No. 8 in F major, Op. 93* (Allegretto scherzando); Bernstein Overture to *Candide* – 2 arrangements, each for a different instrumentation; and Smetana *Vltava*.

Dabby, D.S. (2002-2007). 25 arrangements of works by Mozart, Gershwin, Rachmaninov, Britten, Stravinsky, Tchaikovsky, Bartok, Elgar, Shostakovich, Gorecki, Copland, Fauré, Borodin, and Schubert, of which only nine survive. The others appear to be lost due to lack of an orchestral library for the arrangements (which has since been remedied).

**Intellectual Vitality: Music—Solo Piano Concerts** (ranging from Bach to Bartok) and **Contemporary Music Performances**

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| 1998 | Center for the Arts, Middlebury College. Solo piano concert. May 1998.  |
| 1996 | Jordan Hall at the New England Conservatory. Contemporary piano performance: <i>Islamorada</i> for percussion and piano by Diana Dabby (composer and pianist) with the New England Conservatory Percussion Ensemble, Frank Epstein, Director. April 1996. |
| 1993 | The Cube, MIT Media Lab. Contemporary piano performance: <i>Manhattan EightSixSix</i> for piano and tape by Diana Dabby (composer and pianist). May 1993.   |
| 1991 | Boston Symphony Hall. Contemporary keyboard performance: <i>From Silence</i> for electronics with live performers (violin, viola, percussion, keyboards and soprano) by Jonathan Harvey; John Hoose, conductor. January 1991.                             |
| 1990 | Tanglewood Festival of Contemporary Music. Contemporary piano performance: <i>Lopez</i> for piano and tape by Diana Dabby (composer and pianist). August 1990.  |
|      | The Cube, MIT Media Lab. Contemporary piano performance: <i>Lopez</i> for piano and tape by Diana Dabby (composer and pianist). May 1990.   |
| 1987 | Merkin Concert Hall, New York, NY. Solo piano concert to establish the Judith Resnik Memorial Scholarship at The City College of New York. April 1987. Sold out.  |
|      | Friends of Music Series, Princeton University. Solo piano concert. April 1987.  |
| 1986 | American Music Week Manhattan, New York, NY. Two performances. November 1986.   |
| 1983 | Jeunesse Musicale Concert Series, Marczibanyi Teri Cultural Center, Budapest, Hungary. Solo piano concert, April 1983. Sold out.  |



- Museum of the City of New York Concert Series (encore), New York, NY. Solo piano concert. March 1983.
- Donnell Library Concert Series (by audition), New York, NY. Solo piano concert. March 1983.
- Hewlitt-Woodmere Library Concert Series (by audition), New York, NY. Solo piano concert. March 1983.
- 1981 Gallery Concerts at St. Ignatius Church (by audition), New York, NY. Solo piano concert. December 1981.
- Massapequa Public Library Concert Series (by audition), Massapequa, NY. Solo piano concert. November 1981.
- Bosendorfer Beethoven Festival (encore), Friends of the Arts Concert Series, Oyster Bay, NY. Solo and one piano-four hands Beethoven performances. September 1981.
- Museum of the City of New York Concert Series (by audition), New York, NY. Solo piano concert. March 1981.
- 1980 Trinity Church Concert Series (by audition), New York, NY. Solo piano concert. November 1980.
- Bosendorfer Beethoven Festival at Coe Hall (by audition), Friends of the Arts Concert Series, Oyster Bay, NY. Solo Beethoven performance. September 1980.
- Lincoln Center Performing Arts Library, New York, NY. Solo piano concert. June 1980.
- Carnegie (Weill) Recital Hall, New York, NY. Solo piano concert, April 1980. Sold out.
- South Huntington Library Concert Series (by audition), South Huntington, NY. Solo piano concert. April 1980.
- Westbury Library Concert Series (by audition), Westbury, NY. Solo piano concert. March 1980.
- Brooklyn Museum, Brooklyn, NY. Solo piano concert. January 1980.

A sampling of live recordings from my New York concerts can be heard at [NY Concerts](#)

A live recording of a contemporary performance, *Islamorada* for percussion and piano (with the composer as pianist and the percussion part rendered on tape), can be heard at [Islamorada](#)

### **Intellectual Vitality: Music—Building a Music Program from Scratch, and Sustaining it**

- 2002 - present Founder and developer of the Music Program at Olin College of Engineering (2002-present). Responsibilities include applying orchestration, composition, theory, and performance skills towards all facets of the program; organizing and rehearsing concerts for Olin events and programs (8-23 concerts/year inside and outside Olin); ensuring year-to-year continuous improvement and innovation.
- Rehearsed and produced 372 concerts by the Wired Ensemble, the Olin Conductorless Orchestra, and other ensembles. Of these 372 concerts, I performed as a pianist in 77 of them to help establish and sustain the program. (Programs available on request.)
- 2002 – present Founder and developer of the *Olin Conductorless Orchestra* (2002-present), an ensemble—minus conductor—featuring instrumentalists in leadership, communicative, and collaborative roles. The Olin Conductorless Orchestra is the only conductorless (self-directed) orchestra composed of engineers—in the world. Responsibilities include re-orchestrating symphonic

works (chosen by the students) for the orchestra's eclectic combination of instruments; providing constructive commentary on a weekly basis; coaching/rehearsing/guiding from the side or up front, as needed; introducing Boston area musicians to provide external feedback to the orchestra 3-4 times each semester.

- 2021 [Music@Olin](#) website for prospective students and their families, as well as all Olin students, alumni, staff, and faculty. Worked with Andrew Chang '24 to design and build the site.
- 2019 Concert by the Olin Conductorless Orchestra at the American Society for Engineering Education Zone I International Conference, Niagara Falls, NY. 12 April 2019.
- 2005 – 2022 Acquisition of instruments, including alto flute, bass flute, percussion (xylophone, glockenspiel, toms, snares, cymbals, triangles, bass drum, timbales, bongos, conga, and smaller instruments), timpani (23", 26", 29", and 32"), Yamaha upright B3 rehearsal piano, and Steinway A rehearsal/practice piano. Re-placing instruments that disappeared during the covid lockdown (\$2000).
- 2017 Concert by the Olin Conductorless Orchestra at the Great Hall of the Cooper Union. 19 February 2017.
- 2014 Initiated Ann Schaffner Concert Series at Olin College with generous grant from the Schaffner family. April 2014.
- 2013 Acquisition of new Steinway B for Milas Hall Mezzanine (Olin's music performance space). Wrote proposal, discussed with administration, responded to questions from all concerned, located piano technician in Connecticut to evaluate the Steinway prior to purchase, emails and phone calls with the piano technician, meetings/emails/phone calls with the seller, emails/phone calls/meetings with Facilities regarding placement of Steinway once it arrived, emails/phone calls with Steinert Pianos in Boston to install piano dolly, emails/phone calls with Olin's piano technician to address voicing, string leveling, tuning, and regulation of the piano, and fundraising (emails/phone calls/meetings) to finance purchase.

#### **Intellectual Vitality: Music—the Olin Conductorless Orchestra (OCO)**

Dedicated to playing orchestral works selected by its students, OCO forges individual participation, active listening, and group-motivation into performances that have established it as a singular ensemble. In Fall 2002, I created the Olin Conductorless Orchestra to give our new college, and its students, a bold variation on the collegiate student orchestra—one that is self-directed rather than conducted. In so doing, OCO offers engineer-musicians an experiential lab for developing leadership, teamwork, and communication skills, while doing something they love—music.

The orchestra has performed 164 concerts since inception. A representative sampling of performances is given below, in chronological order to show overall growth of the orchestra before covid and its gradual emergence after the pandemic. The orchestral arrangements are identified in "Intellectual Vitality: Music—Orchestral Arrangements" given above. (Full list of concerts available on request.)

Spring 2008	<a href="#">Haydn Sinfonia No. 48 in C Major, "Maria Theresia": first movement (Allegro)</a>
Spring 2011	<a href="#">Composite video excerpts (Holst: Jupiter from <i>The Planets</i> and Lee Jisu: <i>Arirang Rhapsody</i>)</a>
Spring 2013	<a href="#">Arturo Marquez <i>Danzon No. 2</i></a>

Fall 2015	<a href="#"><u>Beethoven Overture to the <i>Creatures of Prometheus</i></u></a>
	<a href="#"><u>Saint-Saens <i>Danse Bacchanale</i></u></a>
Spring 2016	<a href="#"><u>Dvorak <i>Symphony No. 9 in e minor: fourth movement (Allegro con fuoco)</i></u></a>
Spring 2017	<a href="#"><u>Gershwin <i>An American in Paris</i></u></a>
Spring 2019	<a href="#"><u>Mozart <i>Serenade in Bb major for 13 Winds, K. 361: Finale</i></u></a>
	<a href="#"><u>Berlioz "Marche Hongroise" from <i>La Damnation de Faust</i></u></a>
Fall 2020	Goodrich, Joanna. "Conductorless Orchestra Helps EE Students Fine Tune their Professional Skills." In IEEE <i>The Institute</i> , Oct. 26, 2020. <a href="https://spectrum.ieee.org/the-institute/ieee-member-news/conductorless-orchestra-helps-ee-students-fine-tune-their-professional-skills"><u>https://spectrum.ieee.org/the-institute/ieee-member-news/conductorless-orchestra-helps-ee-students-fine-tune-their-professional-skills</u></a>
Spring 2021	Goodrich, Joanna. "Conductorless Orchestra Helps EE Students Fine Tune their Professional Skills." In IEEE <i>Spectrum</i> , Mar. 21, 2021, Print.
Spring 2023	<a href="#"><u>Mussorgsky-Ravel <i>Pictures at an Exhibition: La cabane sur des pattes de poule (live excerpt)</i></u></a> Concert recording of movements: Promenade, Il vecchio castello, Tuileries, Cum mortuis in lingua mortua, La cabane sur des pattes de poule <a href="https://www.youtube.com/watch?v=9icbmaUdWTA&amp;list=PLvexLOJGQ74v0aFpdDdshzQHL2JAbwPXj&amp;index=2"><u>https://www.youtube.com/watch?v=9icbmaUdWTA&amp;list=PLvexLOJGQ74v0aFpdDdshzQHL2JAbwPXj&amp;index=2</u></a>

### **Invited Lectures and Presentations**

- 2023 NSF-funded Conference, "From Lab to Impact: Broadening Participation Summit at MIT." Invited panelist for a faculty perspective on NSF I-Corps, NSF PFI-TT, and other programs. Hosted by MIT. 24-25 April 2023.
- NSF-funded Workshop, "Supporting Undergraduate Institutions in Technology and Entrepreneurship Development" (SUITED). Invited panelist and presenter (virtual). Hosted by Union College. 12-13 January 2023.
- 2021 ASEE National Conference (virtual). Distinguished Lecture Series Session, Long Beach, CA. "The Engineers' Orchestra: a Conductorless Orchestra for Developing 21<sup>st</sup> Century Professional Skills." 26-29 July 2021.
- "Inside Olin: Perspectives on Student-Centered Teaching and Learning", a series of developmental online sessions based on 12 signature courses, sponsored by the Olin College Collaboratory for faculty at other institutions. Presentation (virtual) on "Engineering Systems Analysis: A Multidisciplinary Approach to Mid-Level Engineering Courses", with Prof. Christopher Lee. Olin College of Engineering. 20 April 2021.
- 2020 ASEE National Conference (virtual). Zones 1-4 "Best Paper" Session, Montreal, Canada. "The Engineers' Orchestra: a Conductorless Orchestra for Developing 21<sup>st</sup> Century Professional Skills." 21-24 June 2023.
- 2019

- Ecosystem Panel: Idea to Impact at MIT. As an NSF I-Corps National Teams PI, invited panelist and presenter for the MIT Sloan Fellows MBA Program course “Innovation-driven Advantage.” 11 September 2019.
- 2019 CantoVario NSF Innovation Corps National Teams presentation, I-Corps cohort in Nashville, TN. “Lessons Learned.” June 2019
- 2018 CantoVario keynote. Young Inventors’ Program Convention at Southern New Hampshire University (SNHU) sponsored by the Academy of Applied Science, Fidelity Investments, and SNHU. “Two-Part Invention.” March 2018.
- Guest Lectures on the mathematics underpinning music for “Engineering the Acoustical World,” a new course at Harvard University, John A. Paulson School of Engineering and Applied Sciences. Lectures connected the wave equation, overtone series, tuning, string harmonics, and modal scales. February 2018.
- 2017 CantoVario presentation and demo. MIT Venture Mentoring Service annual showcase/networking event “The Entrepreneurial Edge.” October 2017.
- 2016 CantoVario pitch and demo. MIT Venture Mentoring Service “Snapshot Pitches.” February 2016.
- 2015 Seminar presentation: CantoVario. Wellesley College AFR -237 - Women, Careers, and Diversity: Mining the Landscape. February 2015.
- 2014 Competition for MIT Venture Mentoring Service (VMS) 2014 Demo Day. CantoVario (EnginArt) selected as one of 20 Demo Day presentations from 70 MIT start-up applicants. April 2014.
- CantoVario Workshop. Society of Composers, Berklee College of Music. February 2014.
- CantoVario presentation. Society of Composers, Berklee College of Music. February 2014.
- 2013 Art of Science speaker series, Brandeis Women in Science Initiative, Brandeis University. “Creating Musical Variation—from Chaos.” March 2013.
- 2012 Dean William Parks Colloquium, Christopher Newport University. “Two-part Invention: Creating at the Interface of Art and Science.” April 2012.
- 2010 Tedx Olin College. “Musical Variation via Chaos.” December 2010.
- Skidmore Union Network, funded by an NSF Advance PAID grant. “From Chaos: Musical Variations.” March 2010.
- 2009 Yale University Women in Science, “Taming Chaos for Musical Variation.” October 2009. National Symposium for the Advancement of Women in Science (NSAWS), presented by Women in Science at Harvard-Radcliffe. “Taming Chaos for Musical Variation.” February 2009.
- 2008 MIT Laboratory for Information and Decision Systems Colloquium. “Creating Musical Variation.” April 2008.
- 2007 Plenary speaker, 2007 International Conference on Complex Systems. “Engineering Chaos and Musical Variation.” 28 October-2 November 2007.

- Dartmouth College Thayer School of Engineering (Jones Seminar Series on Science, Technology, and Society). "Chaos Theory intersects Musical Variation." April 2007.
- Concert/lecture. The City College of New York Honors Program, Schools of Engineering and Liberal Arts/Sciences. "At the Interface of Science and Art." March 2007.
- 2006 Guest Lecture. Harvard University Engineering Sciences 147: Idea Translation. "Pulling Music out of Chaos." November 2006.
- 2005 Lecture presentation. National Association of Schools of Music (NASM) 81<sup>st</sup> Annual Meeting, *New Dimensions: Avant-garde Thinking in Educational Technology*. "Automatic Generation of Musical Variations." 19-22 November 2005.
- 2004 Concert/lecture. Harvard University School of Engineering and Applied Sciences. "Engineering Musical Variation." December 2004.
- 2002 Concert/lecture. Mills College Department of Music. "Tempering Chaos for Musical Variation." April 2002.
- 2001 Concert/lecture. Boston Cyber Arts Festival, Sorenson Theater, Babson College. "Creating Musical Variation by Taming Chaos." April 2001.
- 1999 Concert/lecture. Department of Music, Dartmouth College. "Art  $\cap$  Science: Musical Variations from a Chaotic Mapping." March 1999.
- Concert/lecture. Women in Music Series at Tufts University. "Music and Engineering—Endless Variations."
- Concert/lecture. Honors Colloquium, UMass Dartmouth. "Art  $\cap$  Science: Music via Chaos."
- 1998 Concert/lecture. Arts in Science Series presented by FIRST Place of New Hampshire. "Art  $\cap$  Science: Music and Image from Chaos." November 1998.
- 36<sup>th</sup> Annual *New Horizons in Science Briefing* International Conference for Science Writers sponsored by the Council for the Advancement of Science Writing, in conjunction with Boston University. "A Chaotic Mapping for Music and Art." 1-5 November 1998.
- Concert/lecture. International Symposium on Information Theory, Kresge Auditorium, MIT. "Variations in Music and Image via Chaos." August 1998.
- Concert/lecture. Departments of Music and Electrical Engineering, Princeton University. "Art  $\cap$  Science: Music and Image from Chaos." April 1998.
- Concert/lecture. Electrical Engineering and Computer Science Colloquium, MIT. "Art  $\cap$  Science: A Chaotic Mapping for Musical Variation." March 1998.
- Math and Music Seminar, Cornell University. "At the Intersection of Math and Music: A Chaotic Mapping for Musical Variation." March 1998.
- Concert/lecture. Center for Applied Mathematics Colloquium, Cornell University. "From a Chaotic Mapping: Variations in Music and Image." March 1998.

- Concert/lecture. Center for the Arts, Middlebury College. "Where Art meets Science: Musical Variations from a Chaotic Mapping." February 1998.
- 1997 Mathematics Seminar, Middlebury College. "Mappings for Music." October 1997.  
Office of Naval Research. Fourth Experimental Chaos Conference, Boca Raton, FL. "A Chaotic Mapping for Music and Image Variation." July 1997.
- 1996 Mitsubishi Electric Research Lab, Cambridge, MA. "Musical Variations from Chaos." October 1996.
- 1995 Concert/lecture. Departments of Music and Electrical Engineering, Hong Kong University. "Musical Variations from a Chaotic Mapping." April 1995.
- Concert/lecture. Department of Physics, Hong Kong University of Science and Technology. "Musical Variations from a Chaotic Mapping." April 1995.
- Concert/lecture. Department of Electrical Engineering, Hong Kong Polytechnic University. "Musical Variations from a Chaotic Mapping." April 1995.
- Concert/lecture. Departments of Music, Mathematics, and Physics, Hong Kong Baptist University. "Musical Variations from a Chaotic Mapping." April 1995.
- Concert/lecture. Department of Mechanical and Automation Engineering, Chinese University of Hong Kong. "Musical Variations from a Chaotic Mapping." April 1995.

#### **Conference Presentations and Symposia**

- 2023 Summer Studio. Design coach for two teams seeking to strengthen innovation, engineering, and entrepreneurship in Chinese higher education: Shenzhen InnoX Academy and Chongqing National Elite Institute of Engineering + Mingyue Lake Intelligent Technology Development Co., Ltd. + Southwest University. 11-15 July 2023, Olin College of Engineering.
- 2023 12<sup>th</sup> Annual Deshpande Symposium: Innovation and Entrepreneurship in Higher Education. "Making Research More Impactful: Supporting Faculty at Undergraduate Institutions in Technology and Entrepreneurship Development." Panelist. 5-8 June 2023, Arizona State University, Scottsdale, AZ.
- 2021 Virtual Summer Institute, Olin College. Design coach to (1) assist the design of a new department within the Faculty of Engineering at the University of Ottawa that'll bring together Engineering Design, Teaching, Innovation, and Entrepreneurship; and (2) assist with implementing a project-based teaching method for a University of Tsukuba branch campus in Malaysia. 7-11 June 2021.
- 2020 Virtual Summer Institute, Olin College. Focus Workshop on Engineering Systems Analysis, with Professors Chris Lee and Siddhantan Govindasamy. Design coach with Prof. Scott Hersey for new engineering program at UNC, Chapel Hill. Design coach with Prof. Joanne Pratt for engineering curriculum revision at Baylor University. 8-12 June 2020
- 2019 American Society for Engineering Education (ASEE), Cooperative & Experiential Education Division (CEED). Leveraging Experiential Learning to Integrate Liberal Arts Into Engineering Education: "The Engineers Orchestra." Tampa Convention Center, Tampa, FL. 15-19 June 2019.
- ASEE Zone One International Conference. "The Engineers' Orchestra: a conductorless orchestra for developing 21<sup>st</sup> century professional skills." Niagara Falls, NY. 11-13 April 2019.
- 2018

- Academy of Applied Science panel presentation on Invention Education at the Massachusetts STEM Symposium. Presentation with three other educators on fostering invention for K-12 students. DCU Center, Worcester, MA. 14 November 2018.
- 2013 Wheaton Institute for the Interdisciplinary Humanities, Inaugural Gala Event, “The Humanities Give Back: The Role of the Humanities in Professional Fields,” moderated by Anthony Grafton, Henry Putnam University Professor of History, Princeton University. Invited Panelist. April 2013.
- 2009 National Symposium for the Advancement of Women in Science (NSAWS), presented by Women in Science at Harvard-Radcliffe. “Interdisciplinary careers: carrying science across fields.” Invited Panelist. 7-9 February 2009.
- 2005 National Symposium for the Advancement of Women in Science (NSAWS), presented by Women in Science at Harvard-Radcliffe. “Interdisciplinary careers: carrying science across fields.” Invited Panelist. 8-10 April 2005.
- 2005 Engineering Vision Symposium sponsored by the School of Engineering, University of North Florida. “Superior Engineering Education to Drive Economic Development in Northeast Florida.” Invited consultant. 10-12 March 2005.
- 2004 Siemens Foundation *Beautiful Minds, Beautiful Music* Symposium at Weill (Carnegie) Recital Hall. Event sponsored by the Siemens Westinghouse Science Competition to examine the connection between science and music. Invited Panelist. June 2004.
- 2003 American Society for Engineering Education (ASEE) Annual Conference. “En Route To Engineering: Nabokov, Lepidoptera, Dynamics.” Conference presentation. Nashville, TN. 22-25 June 2003.
- 2002 ASEE Annual Conference. “Leonardo as Artist, Scientist, Engineer.” Conference presentation. Montreal, Canada. 16-19 June 2002.
- 2001 ASEE Annual Conference. “Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach and Borodin.” Conference presentation. Albuquerque, NM. 24-27 June 2001.
- 1995 SIAM (Society for Industrial and Applied Mathematics) International Conference on Applications of Dynamical Systems. “Musical Variations from a Chaotic Mapping.” Poster presentation. Snowbird, UT. 21-24 May 1995. *Best Poster Prize* (unanimous).
- 1994 Acoustical Society of America Conference. “A Musical Chaotic Space.” Conference presentation. Cambridge, MA. 6-10 June 1994.

#### **Olin Summer Intellectual Vitality (IV) Grants and NSF Grants: Research Students (2005 – 2022)**

(In chronological order to convey the progress of my projects.)

- |             |   |
|-------------|---|
| Summer 2005 | Michael Wu '07 coded up a number of preliminary algorithms for making variations of audio recordings. Despite some promising results, this preliminary work was abandoned. In March 2006, I had an epiphany which led to the continuous- and discrete-time algorithms coded up during summers 2006, 2007, 2008, 2009.   |
| Summer 2006 | Michael Wu '07 programmed the continuous-time algorithms in Matlab. Though he had never built an interface up to that point, he created an efficient design that allowed access to a number of complex variation methods for audio. During Fall 2006, I realized that all of my continuous-time algorithms also applied to making variations of discrete-time input, e.g., MIDI song files. |



Summer 2007	David Nelson '09 coded up the new discrete-time algorithms, based on the above continuous-time results, in Python. Though he had never coded in Python, I took a chance on him, and I'm glad I did. He not only programmed the aforementioned discrete-time algorithms, but also created a usable interface so that I could experiment further.
Summer 2008	Kevin Cheng '11 then coded the continuous-time algorithms in Matlab. This was necessary because the beautiful interface created by Michael Wu no longer worked with my new computer. Furthermore, I wanted to re-test the results of Summer 2006 to make sure they were reproducible. Eddie Byun '11 also worked with me. At the start of the summer, he wanted to improve his programming ability, yet realized as the summer progressed that coding was not where he wanted to put his future energies. This turned out to be a valuable realization (his words to that effect).
Summer 2009	Andrew Pikler '12 coded a number of new discrete-time algorithms that arose when I turned my attention to the problem of rhythmic variations. Again, the breakthrough for these rhythmic variation methods arose in a flash during a quiet moment in May 2009, but only after making various attempts since 2000. Andrew made an interface that I used in order to check new results against those created earlier.
Summer 2014	James Jang '17 researched and organized a number of contemporary song recordings by key and tempo so that we could test "CantoVario" (the musical variations project) with different genres. CantoVario encompasses all the continuous- and discrete-time algorithms disclosed in the awarded patents on pp. 2-3 of this CV.
Summer 2015	Jacob Kingery '16 coded a number of web mockups, audio experiments, and new algorithms designed to satisfy copyright and trademark constraints. This work started in fall 2014 as an Undergraduate Research project (for credit), continued in Spring 2015 as paid work, and summer 2015 as part of an Olin Summer IV Grant.
Summer 2016	Sungwoo Park '19 coded a web app that included 4 of my variation algorithms for MIDI songs. Duncan Hall '18 investigated the addition of a score feature for the web app.
Summer 2017, Summer 2019	Justin Kunimune '19 programmed a standalone desktop version of CantoVario that included all my variation algorithms for MIDI songs up to Summer 2019, as well as a web app featuring same.
Summer 2019	Luis Zuniga '21 built the new Engineers' Conductorless Orchestra website Hub. Though he had never created a website, he taught himself the necessary HTML, CSS, and JavaScript languages. The website was a complex undertaking due to the large amount of content, as well as the variety of that content (e.g., videos, musical scores, programs, etc.)
Summer 2020	Luis Zuniga '21 researched machine learning methods underpinning Spleeter and expanded the CantoVario song base. Michael Remley '22 built a manual parser for audio songs. (NSF support)
Fall 2020	Michael Remley '22 continued debugging the manual parser and researched science museum protocols. Anthony Costarelli '25 identified problems with the then current

	MIDI Variation Engine and fixed them; completed field research on all current MIDI and audio-based machine learning models designed for music generation. Junwon Lee '21 beta-tested the then current MIDI Variation Engine. Luis Zuniga '21 continued expanding the audio song base. (NSF support)
Spring 2021	Michael Remley '22 built the eventual mock-up for the CantoVario Chaos+Music Science Museum Exhibit Prototype. Jasper Katzban '23 and Aydin O'Leary '23 built a Framer prototype for the MIDI Variation Engine. Luis Zuniga '21 continued expanding the audio song base. Anthony Costarelli '25 experimented with existing, open-source MIDI and audio-based machine learning models using our own datasets created from CantoVario algorithms. (NSF support)
Summer 2021	Anthony Costarelli '25 built an initial MIDI Variation Engine prototype. (NSF support)
Fall 2021	Luis Zuniga '21 finished the audio song base. Andrew Chang '24 designed an updated "skin" for the Audio Variation Engine, as well as logos+favicons for CantoVario and EnginArt. (NSF support)
Spring 2022	Michael Remley '22 revised the video for the CantoVario Chaos+Music Science Museum Exhibit Prototype to reflect song variations from my new song variation algorithm, as well as feedback from an MIT marketing expert. (NSF support)
Fall 2022	Dominic Salmieri '26 built a piano roll to be incorporated with the MIDI Variation Engine, based on feedback from musician-producers. (NSF support)
Spring 2023	Dominic Salmieri '26 integrated the piano roll into the MIDI Variation Engine (NSF support)
Summer 2023	NSF REU (Research Experiences for Undergraduates) Supplement funded 2 non-Olin students, David Suarez '26 (MIT) and Louis Larsen '24 (Princeton University). The latter built a new Audio Variation Engine prototype that implements my Spring 2023 research (algorithms that vary the vocal and instrumental lines of audio songs, mp3 or wav). The former debugged the MIDI Variation Engine (MVE) and devised a way to allow users to incorporate their own instruments with the MVE, at least in theory. Still to be tested in practice.  Olin student Trevor Tzou '24 re-built the audio parser and integrated it with a bootstrapped Audio Variation Engine. (NSF support)  MIT student Sofia Medina '25 took over the CantoVario Science Museum Exhibit prototype project, still ongoing. (NSF support)

### **Courses Taught**

(In chronological order to show evolution of course development at Olin College of Engineering, while building & sustaining the College, as well as at other institutions.)

1997 Fall	<i>Musical Variation</i> seminar, Middlebury College Dept. of Music <i>Music Composition I</i> , Middlebury College Dept. of Music
1998 Spring	<i>Music Composition II</i> , Middlebury College Dept. of Music <i>Music Theory I</i> , Middlebury College Dept. of Music

1998 Fall	<i>Signals and Systems</i> (6.003), MIT Dept. of Electrical Engineering and Computer Science <i>Circuits</i> , Tufts University Dept. of Electrical Engineering and Computer Science
1999 Fall	<i>Musical Variation</i> composition seminar, Tufts University Dept. of Music <i>Music, Art, Literature: Intersections with Science</i> . Tufts University Dept. of Music <i>Circuits</i> , Tufts University Dept. of Electrical Engineering and Computer Science
2002 Spring	<i>Music, Art, Literature: Intersections with Science</i> . The Juilliard School, Graduate Division
<b>2001 – 2021</b>	<b>Developed, taught, and created curricular materials for the following courses. Each different course was a ‘first’ at Olin College of Engineering</b>
2001 Fall	<i>Leonardo as Artist, Scientist, Engineer</i> , offered during Olin’s “Partner Year”
2002 Spring	<i>Nabokov, Butterflies, Moths</i> , offered during Olin’s “Partner Year”
2002 Fall	<i>Music Performance, Music Composition</i> which included the Olin Conductorless Orchestra. ELE1020
2003 Spring	<i>Musical Design and Aesthetics</i> , including the Olin Conductorless Orchestra. ELE1025
2003 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . Arts, Humanities, and Social Sciences (AHS) Foundation course. AHS1122 <i>The Olin Conductorless Orchestra</i> , though not yet a course, running concurrently. <i>Signals and Systems</i> . Electrical and Computer Engineering (ECE) core course (required for ECE majors). FND2510
2004 Spring	<i>Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin</i> . AHS elective. AHS1140 <i>The Olin Conductorless Orchestra</i> , though not yet a course, running concurrently. <i>Signals and Systems</i> . ECE core course (required for ECE majors). ENGR2410
2004 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> , though not yet a course, running concurrently.
2005 Spring	<i>Signals and Systems</i> . ECE core course (required for ECE majors). ENGR2410 <i>Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin</i> . AHS elective. AHSE2120 <i>The Olin Conductorless Orchestra</i> , though not yet a course, running concurrently.
2005 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2005 Spring	<i>Signals and Systems</i> . ECE core course (required for ECE majors). ENGR2410 <i>Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin</i> . AHS elective. AHSE2120 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2006 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112

2006 Spring	<i>Signals and Systems</i> . ECE core course (required for ECE majors). ENGR2410 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2007 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2007 Spring	<i>Signals and Systems</i> . ECE core course (required for ECE majors). ENGR2410 <i>Heroes for the Renaissance Engineer: Leonardo, Nabokov, Bach, Borodin</i> . AHS elective. AHSE2120 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2007 Fall	<i>The Engineers' Orchestra, part I: Acoustics, Waves, Vibrations</i> . Engineering elective. Co-taught with Prof. Chris Lee. ENGR2125 <i>The Engineers' Orchestra, part II: Theory, Orchestration, Composition</i> . AHS elective. AHSE2125 <i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2008 Spring (on developmental leave with course reduction)	<i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2008 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2009 Spring	<i>Digital Signal Processing</i> . ECE elective. ENGR3499 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2009 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2010 Spring	<i>Digital Signal Processing</i> . ECE elective. ENGR3415 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2010 Fall	<i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2011 Spring	<i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2011 Fall	<i>Digital Signal Processing</i> . ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Wired Ensemble: Instruments, Voices, Players</i> . AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112
2012 Spring	<i>Signals and Systems</i> , new approach to this core course (required for ECE majors, including new text book, lab work, and written reports based on a writing rubric developed in conjunction with Olin Writing Consultant Dr. Gillian Epstein. <i>The Olin Conductorless Orchestra</i> . AHS elective. AHSE0112 Created and prepared curricular materials for Olin's 2012 institutional evaluations by the Accreditation Board for Engineering and Technology (ABET) for 3 courses: Digital Signal Processing, the Wired Ensemble, Signals and Systems.

2012 Fall	<i>Digital Signal Processing.</i> ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2013 Spring (on developmental leave with course reduction)	<i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2013 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2014 Spring	<i>Digital Signal Processing.</i> ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2014 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2015 Spring	<i>Digital Signal Processing.</i> ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
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2016 Spring	<i>Digital Signal Processing.</i> ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2016 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>Digital Signal Processing.</i> ECE either/or requirement that satisfies either a core requirement or an ECE elective requirement. ENGR3415 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2017 Spring	<i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2017 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2018 Spring (on developmental leave with course reduction)	<i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2018 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2019 Spring	<i>Signals and Systems</i> <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112

2019 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2020 Spring	<i>Engineering Systems Analysis (ESA)</i> , in two half-semester parts: ESA:Systems (with Professors Chris Lee and Siddhantan Govindasamy) and ESA:Signals (with Prof. Govindasamy). ENGR2099 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2020 Fall	<i>Singular Voices, Dual Lives: Nabokov, Leonardo, Bach, and Borodin.</i> Online AHS Foundation course. AHSE 1199C. <i>The Olin Conductorless Orchestra: Building a Community of Practice.</i> AHS elective. AHSE0112
2021 Spring	<i>Engineering Systems Analysis (ESA)</i> , in two half-semester parts: ESA:Systems (with Professor Chris Lee) and ESA:Signals. ENGR2099 <i>The Olin Conductorless Orchestra: Building a Community of Practice.</i> AHS elective. AHSE0112
2021 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2022 Spring	<i>Engineering Systems Analysis (ESA)</i> , in two half-semester parts: ESA:Systems (with Professor Chris Lee) and ESA:Signals. ENGR2099 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2022 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2023 Spring (on developmental leave with course reduction)	<i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2023 Fall	<i>The Wired Ensemble: Instruments, Voices, Players.</i> AHS Foundation. AHSE1122 <i>The Olin Conductorless Orchestra.</i> AHS elective. AHSE0112
2024 Spring	<i>Engineering Systems Analysis (ESA)</i> , in two half-semester parts: ESA:Systems (with Visiting Professor Orion Taylor) and ESA:Signals. ENGX2134 and ENGR2410

#### **Supervised Independent Studies (IS) and Olin Self-Studies (OSS)**

(In chronological order to convey the growth and variety of the Music Program.)

2003 Spring	Musical Concepts (Etosha Cave) IS
2004 Fall	Music Composition (Amanda Blackwood) IS Music Composition (Jake Graham) IS
2006 Spring	Jazz Theory (Steve Shannon) IS Music Theory: Tonal Harmony (Matt Tesch) IS Musical Performance (Steve Shannon) IS Digital Audio Synthesis (Grant Hutchins) OSS Alexander Borodin: The Relationships that Influenced his Pursuit of Music (Christopher McCabe) Babson College Honors Thesis

2006 Fall	Harmonic Practice (Michael Wu) IS
2007 Spring	A Quick-Entry Musical Interface for Notation Software (Ben Fisher) IS Country and Blues in America: 1920-1960 (Brian Shih) IS
2007 Fall	Music Composition (Leif Jentoft) IS
2008 Fall	Music Composition (Jeff Gluckstein) IS
2009 Spring	Progressive Rock composition (James Whong and Dan Cody) OSS
2010 Spring	Tonal Harmony (Noura Howell) IS Directing the Olin PowerChords (Dan Elg) OSS
2011 Spring	Exploring DnB (Shannon Taylor) OSS Music Theory and Ear Training (Scott Carlson) IS Theory and Piano (Sandra Lam) IS Digital Music (Jessica Noglows and Aaron Greenberg) IS Live Mixing (4 students including Shannon Taylor) IS Acoustics (Anton Frolenkov) OSS
2012 Spring	A Twelve-tone Analysis of Schoenberg's Praeludium (Jea Young Park) IS Music Synthesis Composition (Gray Thomas) IS
2015 Fall	Diwali Vocal Performance (Subhash Gubba) IS
2016 Fall	Music Production (Jee Hyun Kim) IS
2018 Fall	Markov Chains and Music (Junwon Lee) IS
2019 Fall	Experiential Composition (Flynn Michael-Legg: composed, mixed, and recorded EP of five songs)
2020 Spring	Hip Hop Production (Alex Bahner: composed, mixed, and recorded EP of four songs)
2020 Fall	Mixing Electronic Music (Richard Gao: completed the online Hyperbits Masterclass, an 8-week course with 4+ hours of recorded lectures and 4 hours of live classes each week. Composed, mixed, and recorded EP of 3 songs)
2021 Spring	Vocal Music Performance (Junwon Lee: studied vocal techniques and performance skills through private lessons with a voice teacher at Wellesley College; recorded 3 songs in different languages and genres.)
2023 Fall	Sound Engineering, Song Writing, and Music Production (Lauren Thorbecke: a collection of 2-4 original song tracks, fully written, recorded, mixed, and mastered.)

**Arts, Humanities, and Social Sciences (AHS) Capstones in Music—Supervised and/or Mentored**

(In chronological order to show the trajectory of the AHS Capstone in Music.)

2005 Fall	House Music Composition (Grant Hutchins: annotation + two original house music compositions mixed to CD)
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	<p>Computer Music Composition (Katie Rivard: monograph + CD of original compositions)</p> <p>A Cappella Arranging (Amanda Blackwood: annotation + original a cappella arrangements of two current mixed instrumental/vocal popular songs by LeeAnn Womack and Aerosmith)</p>
2006 Spring	<p>Bassoon Performance (Janet Tsai: annotation + live performance of 5 works in Sorenson Theater, including two for bassoon and orchestra)</p> <p>Vocal Conducting (Jake Graham: annotation + demo mini disk of three a cappella works brought to performance level by a student conductor working with an amateur group of singers)</p> <p>Spanish/Sephardic Music and Composition (Ben Donaldson: annotation + 3-movement work)</p> <p>Hearing cf. Hearing-Impaired Perceptions of Music (Jay Gantz: monograph + 10 transcripts of interviews)</p> <p>Percussion Performance and Composition (Steve Shannon: annotation + live performance of original compositions in Sorenson Theater for the Performing Arts + CD of 7 original 'drum-featured' pieces)</p>
2007 Spring	<p>The Internet and the Printing Press: parallels through Western music history (Kristin Dorsey: written disciplinary deliverable)</p> <p>Bass Trombone Performance (Matt Tesch: solo concert in the Glavin Chapel, Babson College)</p> <p>Jazz Singing in the Swing Era (Laura Stupin: solo recital in the Glavin Chapel, Babson College)</p> <p>Viola Performance (Kat Kim: solo recital in the Glavin Chapel, Babson College)</p>
2009 Spring	<p>Chicago and Delta Blues (Kevin Sihlanick: paper + demo recital at Olin College of Engineering)</p> <p>Theory as Performer's Tool: Musical Interpretation and Audience Engagement (Sylvia Schwartz: paper + demo recital at Olin College of Engineering)</p> <p>Emotional Evocation through Music (Erin Schumacher: paper)</p> <p>Electronic Music Composition (Jonathan Pechan: paper + composition + recording)</p> <p>Religious Tradition in American Popular Song (Bonnie Charles: paper + demo recital at Olin College of Engineering)</p> <p>Tango Research and Composition (Kelly Butcher: paper + compositions + demo recital at Olin College of Engineering)</p>
2010 Spring	<p>Violin Performance (Erika Boeing: program notes + violin recital at Olin College of Engineering)</p> <p>Music Composition based on Early Music Influences (Ben Fisher: original compositions + performance at Olin College of Engineering)</p>
2010 Fall	<p>Analysis and arrangement of "One Man Wrecking Machine" (Dan Grieneisen: paper + arrangement + recording)</p> <p>Music Production: a Portfolio of Musical Works (Scott Carlson: recordings + program notes + live performance at Olin College of Engineering)</p>
2012 Spring	<p>Vocal Percussion (Jason Curtis: vocal percussion created and performed for 3 songs—Take on Me, Grace Kelly, and S Catapult—with recordings and live performances at Olin College of Engineering)</p>

2012 Fall	Approaches to Performing and Understanding Classical Music (Elsa Culler: paper + piano recital at Olin College of Engineering)
2014 Spring	Schubert Study (Liz Fitzpatrick: program notes + lessons)
2014 Fall	Phoenix Flight (Kevin O'Toole: composition for OCO based on the children's story "The Phoenix and the Carpet" by Edith Nesbit. Program notes + OCO World première at Olin College of Engineering)
2015 Spring	A Look into Schubert and Schumann (Philicia Chow: program notes + lessons + May concert (cancelled due to pneumonia))
2016 Spring	Music Composition: EP (Michael Resnick: extended play collection of songs and performance at Olin College of Engineering)
2017 Spring	Music Production (Riley Chapman: arrangements and recordings of "Girl in the Hi-Tops" by Peter Mulvey, "Snow is Gone" by Josh Ritter, "Easter Sunday" by John Craigie, and "Death Row" by Jimi Charles Moody)
2017 Fall	Video Game Music Composition (Joseph Sutker: composition tracks to back a video game project) Film Music Composition (William Lu: composition tracks to back a film project)
2018 Spring	Dream of the Butterfly (Jee Hyun Kim: composition for piano)
2019 Spring	Journey (Joseph Lee: composition for OCO. Program notes + OCO World première, Olin College of Engineering)
2020 Spring	Bach's Cello Suite no. 5 in c minor (Kian Raissian: recording + program notes)
2020 Spring	Montuno (Jeremy Ryan: composition for piccolo, flute, clarinet, piano, upright bass, and percussion, including cabasa, claves, egg shaker, congas, timbales)
2021 Spring	Lanes (Alexander Bahner: created, produced, and performed original hip hop album posted to SoundCloud)
2022 Spring	Right Now (Richard Gao: created, produced, and performed original EP posted to SoundCloud)

### **Passionate Pursuits (Music) Supervised**

Responsibilities include helping student instrumentalists and vocalists find appropriate private instruction; evaluating end-of-term performances & deliverables; accompanying student performances on piano; and coaching, as needed.

(In chronological order to demonstrate growth of the Passionate Pursuit Program in Music.)

2002 – 2003	Violin – Etosha Cave
2003 Spring	Flute – Clara Cho Bassoon – Janet Tsai Clarinet – Jerzy Wieczorek Jacob Graham – Silver Harmony (Olin's first A Cappella group)

2003 – 2004	<p>Trombone – Dan Bufford  Voice – Will Clayton  Trombone – Chris Doyle  Flute – Johanna Itescu  Voice – Laura Stupin  Bassoon – Janet Tsai</p>
2004 – 2005	<p>Flute – Johanna Itescu</p>
2005 – 2006	<p>Voice – Jo Itescu, Lauren Glanville, George Jemmott, Elizabeth Kneen, Paul Mandel, Karen Levi, Erin Schumacher. These 7 passionate pursuits culminated in an end-of-term musical theater revue. Worked with voice teacher to present and evaluate the student performances.  Viola – Angela Sharer  Viola Study – Kat Kim  Olin String Quartet</p>
2006 Fall	<p>Voice Lessons – Bonnie Charles, Ben Fisher, Lauren Glanville, Karen Levi, Chujiao Ma, Paul Mandel, Jessica Murray, Amanda Pratt, Ben Small, Laura Stupin, Alexandra Wheeler, Nikolaus Wittenstein. These 12 passionate pursuits culminated in a vocal concert. Worked with voice teacher to present and evaluate the student performances.  Piano Study – Stephanie Gulbrandsen  Piano Study – Michael Boutelle  Guitar Study – Leif Jentoft  Viola Study – Kat Kim</p>
2007 Spring	<p>Group Pursuit in “Musical Theater Performance” – Chujiao Ma, Karen Levi, Paul Mandel, Amanda Pratt, Lauren Glanville, Bonnie Charles, Ben Small. Worked with voice teacher to present and evaluate the 7 student performances.  Private Voice Study – Bryn Hollen  Voice Jazz – Laura Stupin  Viola Performance – Kat Kim  Advanced Piano Technique and Performance – Elizabeth Kneen</p>
2007 Fall	<p>Group Pursuit in Voice Lessons – Dan Elg, Derek Thurmer, Karen Levi, Lauren Glanville, Ben Small, Paul Mandel, and Bonnie Charles. Worked with voice teacher to present and evaluate the 7 student performances.  Piano Study – Tess Edmonds  Voice Study – Bryn Hollen  Jazz Violin Study – Erika Boeing  Piano Study – Peter Massari</p>
2008 Spring	<p>Voice Lessons in French - Liana Austin, Dan Elg, Lauren Glanville, Karen Levi, Paul Mandel, and Bonnie Charles. Worked with voice teacher to present and evaluate the 6 student performances.  Violin Study – Jonathan Reed  Piano and Music Theory – Amanda Blackwood  Solo and Four-handed Piano Performance – Tess Edmonds  Voice Study – Bryn Hollen</p>
2009 Spring	<p>Piano Lessons and Performance – Tess Edmonds  Violin Study and Performance – Steven Zhang</p>

	<p>Clarinet Study – Noura Howell</p> <p>A Cappella Singing – Rachita Navara</p>
2009 Fall	<p>Clarinet Lessons – Noura Howell</p> <p>Brandeis-Wellesley Orchestra – Thomas Dugger</p> <p>Violin Study and Performance – Steven Zhang</p> <p>Professional Singing Instruction – Rachita Navara</p> <p>Gu Zheng (Chinese zither) Study and Performance – Mandy Korpusik</p> <p>Gu Zheng Study and Performance – Lillian Tseng</p>
2010 Spring	<p>Classical Vocal Techniques – Ilana Walder-Biesanz</p> <p>Learning to Play the Banjo – Emily Shakleton</p> <p>Lutherie in order to Make a Soprano Ukelele – Jessica Noglows</p> <p>Professional Singing Instruction – Rachita Navara</p> <p>Disc-jockeying – Arjun Iyer</p> <p>Brandeis-Wellesley Orchestra – Thomas Dugger</p> <p>Jazz Piano – Molly Farison</p>
2010 Fall	<p>Clarinet Lessons – Noura Howell</p> <p>Classical Piano Lessons – Jea Young Park</p> <p>Brandeis-Wellesley Orchestra – Thomas Dugger</p> <p>Classical Vocal Techniques – Ilana Walder-Biesanz</p> <p>Private vocal instruction/vocal technique – Helen Wang</p> <p>Viola Private Lessons – Josh Furnish</p> <p>Live Mixing of Music – Mark Muraoka and Andrew Carmedelle</p> <p>DJ-ing – Arjun Iyer</p> <p>The Art of Reed Making (oboe) – Eric Westman</p>
2011 Spring	<p>Professional Singing Instruction – Rachita Navara</p> <p>Private Vocal Lessons – Helen Wang</p>
2011 Fall	<p>Clarinet Lessons – Noura Howell</p> <p>Classical Vocal Techniques – Ilana Walder-Biesanz</p> <p>Performance DJ-ing – Arjun Iyer</p> <p>Solo Violin Performance – Allie Duncan</p> <p>The Ficus Quartet – Ian Hoover</p>
2012 Spring	<p>Clarinet Lessons – Noura Howell</p> <p>Classical Vocal Techniques – Ilana Walder-Biesanz</p> <p>Concert Piano Performance – Alyssa Bawgus</p> <p>Performance DJ-ing – Arjun Iyer</p> <p>Piano Lessons – Andrew Pikler</p>
2012 Fall	<p>Classical Vocal Techniques – Ilana Walder-Biesanz</p> <p>Concert Piano Performance – Alyssa Bawgus</p> <p>Electronics for Music – Arjun Iyer</p> <p>Flute Lessons – Ambika Goel</p> <p>Flute Lessons – A Young (Claire) Keum</p> <p>Instrument Building – Alyssa Bawgus</p> <p>Sound Systems – Charles Gwennap</p>
2013 Spring	<p>Classical Piano – Luis Rayas</p> <p>Classical Vocal Techniques – Ilana Walder-Biesanz</p>

	Flute Lessons – Claire Keum
2013 Fall	Violin Classical Lessons – Pinar Demetci Vocal Performance – Mariko Thorbecke Ballet – Juanita DeSouza
2014 Fall	Drums – Jay Woo
2015 Fall	Instrument Fabrication – Jee Hyun Kim Learning tenor banjo – Meg Lidrbauch Music Performance (flute) – Kathryn Hite Music Performance (violin) – Shreya Rangarajan Opera Appreciation – Ziyi Lan
2016 Fall	Improve Violin Skills – Yichen Jiang Private Cello Lessons – Hannah Kolano Piano Performance – Emily Yeh
2017 Spring	Learning Mountain Dulcimer – Regina Walker
2017 Fall	Classical Violin – Aiden Carley-Clopton Violin Lessons – Vienna Scheyer
2018 Spring	Orchestral Minimalism composition – Diego Alvarez
2018 Fall	Learning to play Ukelele – Jerry Goss
2019 Spring	Chamber music – Anne Ku
2019 Fall	Learning and Improving my Voice – Richard Gao
2020 Spring	Continuing to Improve my Voice – Richard Gao Wellness Rediscovery – HK Rho
2020 Fall	Learning to Sing – Richard Gao
2021 Fall	Unique Vocal Development – Eleanor Ramos Pennywhistle Design – Benji Pugh Studying the Voice – Richard Gao
2022 Spring	Music Production – Melody Chiu A Lifetime Dream: Playing the Guitar – Ethan Chen Fretless Classical Guitar – George Tighe Making Guitar Pickups – Mateo Macias and Lauren Nalajala Analog Texture Digital Drawing – HK Rho Studying the Voice – Richard Gao
2023 Spring	Mandolin Performance – Jacob Smilg
2023 Fall	Viola Performance – Lucien Lin
2024 Spring	Improving my Oboe Playing – Jojo Liu

## **Committees**

(In chronological order to show building and sustaining the College.)

2000 – 2001	Admissions; Arts, Humanities, and Social Sciences (AHS) Search (Chair); Faculty Search
2001 – 2002	Admissions, Faculty Search
2002 – 2003	Admissions, Organizational Health, BBOW (Brandeis, Babson, Olin, Wellesley) including visiting committee to Wellesley, ECE Search Committee, Olin Expo, Gates, and Intellectual Vitality
2003 – 2004	Admissions, Organizational Health, Electrical and Computer Engineering (ECE) Search Committee, AHS Search Committee, Writing Committee, Olin Expo, Passionate Pursuit Grant Board
2004 – 2005	Admissions, Organizational Health, ECE Search Committee, AHS Program Group Committee, Passionate Pursuit Grant Board
2005 – 2006	Admissions
2006 – 2007	ECE Program Group, AHS Program Group, Admission Reader, Passionate Pursuit Grant Board
2007 (Fall)	ECE Program Group, AHS Program Group, Passionate Pursuit Grant Board
2008 – 2009	ECE Program Group, AHS Program Group, Passionate Pursuit Grant Board, Student Experience Committee
2009 – 2010	Committee on Student Academic Performance, ECE Program Group, AHS Program Group
2010 – 2011	Committee on Student Academic Performance, ECE Program Group, AHS Program Group
2011 – 2012	Faculty Search Committee, ECE Program Group, AHS Program Group
2012 (Fall)	ECE Program Group, AHS Program Group
2013 – 2014	ECE Program Group, AHS Program Group, Admissions
2014 – 2015	ECE Program Group, AHS Program Group, Admissions
2015 – 2016	Academic Life, Committee on Academic Performance (COSAP)
2016 – 2017	Passionate Pursuit Grant Board
2017 (Fall)	Intentional Student Experience Working Group
2018 – 2019	Reappointment and Promotion Committee
2020 (Fall) – 2021	Reappointment and Promotion Committee
2021 – 2022	Reappointment and Promotion Committee

2022 (Summer into Fall)	Reappointment and Promotion Committee
2023 – 2024	Passionate Pursuits Committee, Student Academic Grants Committee

### **Professional and Community Service**

(In chronological order to depict multi-year efforts.)

2006 – 2013	Lesley University, member Doctoral Committee for thesis at the interface of art and science that focuses on computer scientists with strong talents in music, 2006 – 2013: Shaked, Varda. <i>The Meaning of Music-Making for Computer Scientists with a Serious Music-Making Avocation: A Phenomenological Case Study</i> (2013)
2013	“_____ for life.” Worked with SERV (Olin’s Student Community Service) and BOW (Babson, Olin Wellesley) faculty to involve Sorenson Center Spring Concert (featuring 6 BOW music groups, including OCO) in “_____ for life”: a SERV-sponsored event to raise funds for the American Cancer Society.
2013 – 2017	Lions Club Fundraiser (Olin Conductorless Orchestra and PowerChords), May 2013-17. Performance for Needham Lions Club as part of their annual fundraiser.
2015 – 2016	Needham Rotary Club Music Awards, adjudicator for student and professional awards, Jan. 2015, Jan. 2016
2018	Musical Performance (Olin Conductorless Orchestra) for residents of Mt. Pleasant Residential Care Home, Jamaica Plain, MA. May 2018.

### **Contributions to Student Life**

(In chronological order to show growth of the “Learning Continuum” at Olin College of Engineering.)

**Co-Curricular: Olin Does the BSO.** Each year students sign up to attend three concerts offered by the Boston Symphony Orchestra. They receive co-curricular non-degree credit if they attend 2/3 concerts. The Office of Student Affairs and Resources has sponsored my co-curricular “Olin Does the BSO” since 2002, but we only have records of the students involved since Spring 2007.

2007 – 2008	Bryn Hollen, Laura Stupin, Hermes Taylor-Weiner
2008 – 2009	Raphael Cherney, Bryn Hollen, Clark McPheeters
2009 – 2010	Ben Fisher, Sasha Sproch, Liz Threlkeld
2010 – 2011	Breauna Campbell, Molly Farison, Sasha Sproch
2011 – 2012	Andrew Carmedelle, Mandy Korpusik, Hannah Sarver
2012 – 2013	Alyssa Bawgus, Ry Horsey, Liz Fitzpatrick
2013 – 2014	Emily Engel, Liz Fitzpatrick, Daniel Dichter, Hannah Wilk
2014 – 2015	Christine Dimke, Riva Kahn-Hallock, Hannah Wilk
2015 – 2016	Christine Dimke, Meg Lidrbauch, Hannah Wilk
2016 – 2017	Christine Dimke, Claire Kincaid, Hyun Joo Lee, Hannah Wilk
2017 – 2018	Utsav Gupta, Cusai Alfred-Igbikwe, Rachel Won, Joseph Lee
2018 – 2019	Claire Kincaid, Paige Pfenninger, Regina Walker
2019 – 2020	Cancelled due to covid.

**Wired Ensemble Field Trips to New York City 2002 – 2019 (2020 – 2022 canceled due to covid).** Yearly fall semester field trips to hear live performances at the Brooklyn Academy of Music and Lincoln Center, e.g., the Metropolitan Opera, New York Philharmonic, New York City Opera, The Juilliard School Concert Series, and more.



**Family Night at the Opera 2004 – 2019 (2020 – 2022 canceled due to covid).** Yearly spring semester trips into Boston for my advisees; we have dinner out and attend an opera.

**Professional Affiliations**

Institute of Electrical and Electronics Engineers (2005 – present)

IEEE Signal Processing Society (2005 – present)

The College Music Society (2005 – present)

American Society for Engineering Education (2001 – 2005; 2013 – present)

Audio Engineering Society (2022 – present)

National Association of Music Merchants, producers of the NAMM Show (2022 – present)

[updated 11/19/2024]