WCU
WEST CHESTER UNIVERSITY

Department of Physics & Engineering

22nd Annual Awards Ceremony and Colloquium

11 April 2019

PROGRAM

Opening Remarks

Dr. Anthony J. Nicastro

Induction of New Members into

Sigma Pi Sigma

The National Physics Honor Society

Awarding of

The Department of Physics and Engineering Distinguished Alumni Award,
The Robert M. Brown Endowed Scholarship for Physics,
The Dr. Michael F. Martens Awards,
The Dr. Gary Pascuzzo Scholarship,
The Benjamin Faber Scholarship,
Faculty Recognition for Outstanding Achievement in Physics,
The Dr. Russell K. Rickert Award for Undergraduate Student Research,
The Richard '59, M '69 and Jeanette Merion Scholarship,
The Yarosewick Family Scholarship

Colloquium Presentation

Dr. Maxwell Henderson

Senior Data Analyst
QxBranch

When Physics is the "Easy" Part:

Advice and Reflections of a West Chester Alumnus

HISTORY OF SIGMA PI SIGMA

The beginnings of our Society date back to the year 1920. Several physics students and faculty members at Davidson College, Davidson, North Carolina, became convinced that there should be an organization that would serve as a means of recognition for superior scholarship in physics, that would bring those interested in physics into closer association, and that would encourage and stimulate them in their scientific work. They believed that an organization to achieve these goals also would bring about a closer cooperation between instructor and student.

Formal action was taken on December 11, 1921, when five students and four faculty members, meeting in the home of the head of the Davidson College physics department, formed a group which they named Sigma Pi Sigma. This organization functioned satisfactorily as a local honor society for several years. Then its members began to realize that the benefits they were deriving from the local organization might well be shared by others.

Thus, it was decided that Sigma Pi Sigma should become a national organization and on April 12, 1925 a modest expansion program was started. A second chapter was installed at Duke University a month later, and the third chapter was chartered at the Pennsylvania State College (now Pennsylvania State University) the following year.

The first national convention of the Society was held at Davidson College in 1928, with all of the existing five chapters participating. This convention resulted in an active and more extensive program of expansion that was promoted with vigor by the new national officers. Other colleges and universities soon accepted with favor the idea of a national physics society so that by 1930 there were 19 chapters and by 1941 there were 39.

A second burst of expansion activity followed the termination of World War II, and the chapter roll grew rapidly to 78 in the year 1950 and to 100 in 1959. The most rapid growth occurred immediately after the union of Sigma Pi Sigma and the American Institute of Physics Student Sections in 1968. As a result, Sigma Pi Sigma chapter membership increased from 170 in 1968 to 220 within a year. Sigma Pi Sigma has become truly national in scope with 416 active chapters at present, located in 47 of the states of the Union, plus the District of Columbia and Canada.

SYMBOLISM OF SIGMA PI SIGMA

The motto of the Society is Σκεψιζ Προστατηιζ Συνεσωζ (Pronunciation: Skeṕ-sis Praw-staḥ-tays Soon-eśs-ch-θce.) This motto, translated from the Greek, is “Investigation, the Forerunner of Knowledge.” From the first letters in the words of this motto is derived the name of the Society, Sigma Pi Sigma.

The symbolic key dates from the origin of the Society, having been unchanged since the first design was adopted. Its shape represents the historic standard voltmeter. Arched across the top, enclosed in a border, are the letters “Sigma Pi Sigma”. In the apex of the key, in relief, is an incandescent lamp, connected to a dynamo in the center. Beneath the insignia is written the Greek word, Σοφια (Pronunciation: So-fée-ah) signifying “knowledge,” the goal of all scientific investigation.

Σοφια 

The founders of the Society intended for this symbolism to portray three of the essential attributes of a scientist: Accuracy, Knowledge, and Creative Energy. The standard voltmeter is to symbolize accuracy, the lamp to typify knowledge, and the dynamo to portray the creative energy that is so essential in research.

THE MISSION STATEMENT FOR SIGMA PI SIGMA

Sigma Pi Sigma exists to *honor* outstanding scholarship in physics; to *encourage* interest in physics among students at all levels; to promote an attitude of *service* of its members towards their fellow students, colleagues, and the public; to provide a *fellowship* of persons who have excelled in physics. Sigma Pi Sigma's mission is not completed in the induction ceremony with the recognition of academic accomplishment. In the four dimensions of *Honor, Encouragement, Service* and *Fellowship*, the mission of Sigma Pi Sigma takes a longer view.

Honor

Sigma Pi Sigma is the Physics Honor Society. Through election to Sigma Pi Sigma, distinctive achievement and high scholarship in physics are recognized and celebrated.

Encouragement

By honoring high achievement in physics and upholding high standards for election into Sigma Pi Sigma, the Society provides an incentive for all physics students to rise to excellence. Sigma Pi Sigma is a source of encouragement to all students who study physics, whatever the ultimate level of performance achieved by the individual. Such encouragement ranges from promoting physics interest and science literacy in the general public, to challenging those who are pondering their potential for earning higher degrees. Sigma Pi Sigma urges its members to demonstrate this encouragement through personal service.

Service

With the recognition of accomplishment comes a responsibility to service at all levels. Nationally, Sigma Pi Sigma members can serve by helping to work for sound national science policies. Locally, Sigma Pi Sigma members can serve in community science education projects and liaisons, and in mentoring individual students. Such personal initiative provides opportunities for all members of the local community to learn more about physics, and provides visible testimony to the high standards of Sigma Pi Sigma membership. Our colleges, universities, and our Society know that when we become alumni, because we respect the personal struggle for excellence, we will support the generations of students that follow us. When the experience of Sigma Pi Sigma members is placed at the service of others at any level, then Sigma Pi Sigma touches more lives than may be counted by the number of its members.

Service towards others is an offering of fellowship. This is another mission that our honor society fulfills through its members.

Fellowship

The criterion of Sigma Pi Sigma membership is proven excellence in physics. There are no generational boundaries. The first members were inducted in 1921 and new members are added every year. Sigma Pi Sigma members represent many generations of experience and wisdom that can be focused on the matters that unite us.

In Sigma Pi Sigma, there are no professional boundaries. One finds all professions represented in the Sigma Pi Sigma membership. There are many practicing physicists among Sigma Pi Sigma members, but excellence in physics has opened many career options to our members. Through their lives, physics has enriched the world beyond the narrow scope of the physics community. Sigma Pi Sigma reaches beyond specific disciplines, uniting a diverse group of exceptional people who have shared in the culture and traditions of physics. With the common thread of this shared background in physics running through so rich a diversity of generations and professions, Sigma Pi Sigma promotes a spirit of community among its members and encourages them to offer their collective wisdom and perspectives in the service of the larger society.

ΣΠΣ

Chapter No. 414

The Department of Physics & Engineering

West Chester University of Pennsylvania

Robert W. Hawkes
Brent Kaplan
John David Presley
Russell K. Rickert
Harold L. Skelton
Frank A. Smith, Jr.
Stanley J. Yarosewick
Christopher T. Koh
Michael Magargee
Paul A. Medeiros
Michael Pentimall
Dawn J. Striker
Christopher James Boyle
Brian William Raichle
Edward A. Saar
Alan M. Spangler
John Joseph Wagner
Stephen Christopher
George Engle
Andrew Zarynow
Timothy J. Bassett
Peter Cseke, Jr.
Peter N. Duli, Jr.
Daniel H. Greenawald
Anne C. Kane
Helen A. Weber
Nina Zarynow
Linda S. Bosbyshell
James B. Cracas
Drew Michael Feiner
Suljo Linic
Stephen Adrian McGill
Christopher Michael Myers
Amy Lynn Ventresca
Tianran Chen
Richard Janoswki
Levi A. Nicolai
Samuel L. Wilson
Haley B. Buckner
Eric J. Herrmann
Nick M. Pachella
Wahida R. Toomey
Joshua M. Carlson
Connor Johnston
Burhan M. Qaddoumi
Rebeka L. Yocum
Garrett Compton

Jeanette M. Lutz
H. Glenn Braksator
William C. Chess
William Wesley Peoples
Craig Evan Walter
Seth Joel Holladay
Brock King Lewis
Anna Malgorzata Mytyk
Matthew Breit
Anthony J. Daniels
James Weese
Nicholas Bartle
Mary E. Oksala
Philip Castro
Naomi A. Barth
Kathleen Leduna
Christy E. Martin
Cynthia A. Cuddy
Louis H. Miner
Anthony J. Nicastro
Gary J. Pascuzzo
William R. Passwaters
Matthew M. Waite
Thomas O. Melbourne
Matthew T. Shimer
Meira R. Elliott
Kevin B. Aptowicz
Alicia Derr
Mathew J. Zablocki
Miguel J. Abele
Steven M. Assalita
Jared Campbell
Maxwell Henderson
Nathan Kocher
Ann F. Gill
Naveen K. Jha
Kamron Salavitabar
Cameron J. Sprowls
Joshua M. Carlson
Connor Johnston
Burhan M. Qaddoumi
Rebeka L. Yocum
Amy M. Cavanaugh
Benjamin Jordan
Samuel E. Steele
Joseph Backowski
Alexander Lowry

Robert J. Thornton
Michael J. Hedrick
Justin D. Stahl
Shayna A. Wright
Thomas P. Haughey
Michelle A. Caler
David A. Fenimore
Paul J. Pomeroy
Andrew T. Clark
Matthew J. Colagreco
Michelle L. Fusello
Ryan A. Margolis
Sean D. Martin
Anil K. Kandalam
Shawn H. Pfeil
William H. Sawyer
Cody G. Borders
Desmond R. Frost
Gavin C. Frost
Jonathan R. Heintz
Curran J. Kneebone
Ryan T. Knight
Jacob C. Lawton
Eric M. Lechner
Nicolas J. LeGall
Christopher T. Massaro
Anna L. Petrucci
Brett M. Sheriff
Kurt W. Van Mol
Julia E. Mayer
Sean R. Solley
Carlos A. Cartagena
Benjamin T. Danforth
Brenda N. Heisler
Daniel G. Landgraf
Philip D. Curtis
Shane A. Fiorenza
Prabhat Kumar
Amy M. Cavanaugh
Benjamin Jordan
Samuel E. Steel
Haley B. Buckner
Eric J. Herrmann
Nick M. Pachella
Wahida R. Toomey
Jiahaw Fu
Sean Cadden

Induction of New Members into Sigma Pi Sigma, The National Physics Honor Society of the American Institute of Physics:

Joseph Backowski
Jiahaw Fu
Garrett Compton
Alexander Lowry
Sean Cadden
PRESENTATION: Dr. Ian Morrison

Awarding of:

THE DEPARTMENT OF PHYSICS AND ENGINEERING DISTINGUISHED ALUMNI AWARD

Dr. Maxwell Henderson
PRESENTATION: Dr. Kevin Aptowicz

THE ROBERT M. BROWN ENDOWED SCHOLARSHIP FOR PHYSICS

Alexander Lowry
PRESENTATION: Dr. Robert Thornton

THE DR. MICHAEL F. MARTENS AWARD FOR ACHIEVEMENT IN PHYSICS

Matthew Penecale
Garrett Compton
Valerie Woolaghan
Jiahaw Fu
PRESENTATION: Dr. Anthony Nicastro;
Ms. Tracey Melia from the West Chester Lions Club

Awarding of:

The Dr. Gary Pascuzzo Scholarship

Gina Dippolito

PRESENTATION: Dr. Anthony Nicastro

THE BENJAMIN FABER SCHOLARSHIP

Elizabeth Pedlow

PRESENTATION: Dr. Matthew M. Waite

FACULTY RECOGNITION FOR OUTSTANDING ACHIEVEMENT IN PHYSICS

Stephen Dages

Anna Dyska

Kelsey Ortiz

PRESENTATION: Dr. Matthew M. Waite

THE DR. RUSSELL K. RICKERT AWARD FOR UNDERGRADUATE STUDENT RESEARCH

Sequoyah Walters

PRESENTATION: Dr. Kevin Aptowicz

The Richard '59, M '69 and Jeanette Merion Scholarship

Joseph Backowski

PRESENTATION: Dr. Michelle Caler

THE YAROSEWICK FAMILY SCHOLARSHIP

Veronica Muir

Olivia Kimber

PRESENTATION: Dr. Shawn Pfeil

THE ROBERT M. BROWN ENDOWED SCHOLARSHIP FOR PHYSICS

Robert M. Brown '38 established the Robert M. Brown Endowed Scholarship for Physics in December 1996. He received his B.S. degree from West Chester State Teachers College in 1938 and attended the University of Pennsylvania the following year on a full scholarship. Mr. Brown was motivated to establish the endowed scholarship for physics because of the deep respect and gratitude he had for the late Dr. Paul McCorkle, who served as a professor of physics at West Chester for many years. Mr. Brown served as a student laboratory assistant for Dr. McCorkle. Mr. Brown taught science for three years at the John Bassett Moore School in Smyrna, Delaware before joining the Naval Ordinance Laboratory in Washington, D.C. as an associate physicist, designing and calibrating underwater ordinance. Following World War II, Mr. Brown was transferred to the Anaconda Company, where he was employed in various technical and managerial positions for 35 years. He was the inventor of and held the patent for an enameling machine employed in several of Anaconda's manufacturing facilities. The Scholarship has been established through cash gifts from Mr. Brown which have been matched by gifts from ARCO, the donor's former employer.

The Robert M. Brown Scholars

1998 Christopher Michael Myers	***1999*** Brock King Lewis Anna Malgorzata Mytyk	***2000*** Seth Joel Holladay
2001 Anthony J. Daniels	***2002*** Mary E. Oksala David P. Sears	***2003*** Philip Castro Mary E. Oksala
2004 Christy E. Martin	***2005*** Meira R. Elliot Matthew T. Shimer	***2006*** Alicia Derr Mathew J. Zablocki
2007 Joshua D. Davis Daniel J. Maraini	***2008*** Robert T. Virgin Maxwell Henderson	***2009*** Miguel J. Abele Michael J. Hedrick
2010 Andrew T. Clark Shayna A. Wright	***2011*** Eric M. Brown Christopher T. Massaro	***2012*** Ryan Margolis Jacqueline Sugar
2013 Cody G. Borders	***2014*** John W. Bricker	***2015*** Cameron J. Sprowls

Maclean R. Pearson	Sean R. Solley	
2016 Haley B. Buckner Benjamin Jordan	***2017*** Haley B. Buckner Eric J. Herrmann Connor Johnston	***2018*** Gabriel Seymour
2019 Alexander Lowry		

Notes on other scholarships:

THE BENJAMIN FABER SCHOLARSHIP: The Benjamin Faber Scholarship was established in his honor by his family. Benjamin Faber was a dual major in Physics and Mathematics, and the scholarship is awarded annually to a student in each department. The scholarship is not only based upon achievement in Physics, but also for demonstrated collegiality and generosity to fellow students, a hallmark of Ben Faber's time with us.

FACULTY RECOGNITION FOR OUTSTANDING ACHIEVEMENT IN PHYSICS: Given by the Faculty of the Department for achievement in physics, and to recognize the potential for future excellence in the field.

THE DR. MICHAEL F. MARTENS AWARD: This award was established by a bequest of the estate of Dr. Martens, a faculty member of the Department of Physics. Dr. Martens was a long-time member of the Lions Club of West Chester which administers the funds for the award. The award is for achievement in Physics and is given to a Physics major in any of its three programs regardless of the number of credit hours taken in Physics. As a member of the Physics faculty, Dr. Martens maintained high standards and sought any opportunity to encourage his students to continue to pursue excellence.

THE DR. RUSSELL K. RICKERT AWARD FOR UNDERGRADUATE STUDENT RESEARCH: The Dr. Russell K. Rickert Award for Undergraduate Student Research recognizes up to two students for excellence in undergraduate research. The award is given at the end of a student's time at West Chester University. Awardees must have demonstrated a sustained and significant commitment to undergraduate research.

THE RICHARD '59, M '69 AND JEANETTE MERION SCHOLARSHIP: This scholarship is awarded to a sophomore, junior or senior Physics, Chemistry or Biology major for academic excellence, with preference given to a ROTC participant. Selection of the recipient is made with the consultation of the Chairs of the three academic departments.

THE DR. GARY PASCUZZO SCHOLARSHIP: This scholarship is given to one or more students in SCI 102 who are engaged in and excel in the course, who show promise to transfer the knowledge gained

in the course to their own classroom, and who embody the gentle and kind spirit that was characteristic of Dr. Pascuzzo.

THE YAROSEWICK FAMILY SCHOLARSHIP: This scholarship will support a fourth-year science major pursuing a B.S. Ed. who has a GPA of at least a 3.2 (in physics, chemistry, biology and earth/space science). The recipient should demonstrate exceptional promise as a science teacher and community environment.

Speaker: Dr. Maxwell Henderson

Max functions in a variety of roles to help QxBranch grow. He helps support projects involving quantum computation, machine learning, and data science. He has held Data Scientist positions at JPMorgan Chase & Co. and Lockheed Martin, providing technical solutions in cyber, bioinformatics, and natural language processing domains. Max has a Ph.D. and MS from Drexel University in Physics as well as a BS in Physics from West Chester University.

When Physics is the "Easy Part": Advice and Reflections of a West Chester Alumnus

Abstract

The future professional lives of today's physics undergraduates will rarely be linear. These students will face a seemingly constant stream of life-changing questions: Should I go to graduate school? Get a PhD? Or should I jump into industry? Will I move to a new city? And will I keep working as a scientist, or will I choose to embrace the business side of life? In this talk, West Chester Physics alumni Maxwell Henderson will reflect on his time within the Department of Physics & Engineering, and how those experiences helped shape his own educational and vocational journey. This talk aims to offer current students some advice into making the most of their time at West Chester and how to take that knowledge into the next stage of their careers.