

# CHRISTOPHER CHARLES GRAY

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## PROFESSIONAL PREPARATION:

- Aug. 2007-  
June 2010 **Antioch University New England**, Keene, NH  
*Antioch Center for School Renewal*: Completed the Critical Skills Institutes I and II through a staff development partnership with the River Valley Technical Center. Participated as a case study instructor in Dr. Maura Hart's doctoral thesis on implementing *The Critical Skills Classroom* at the secondary level.
- August 2000-  
August 2002 **Rochester Institute of Technology** – Rochester, NY  
Twelve credits of **Post-graduate** coursework to earn accreditation as Project Lead the Way instructor.  
*Areas of Concentration*: 3D Parametric Solid Modeling and Computer Integrated Manufacturing
- Aug. 1996 **Norwich University**, Montpelier, VT 05301  
**Master of Arts in Education** Thesis: Creating a Holistic High Performance School Environment, concentrating on student management and professional mentoring with original research in the area of Planning Room implementation.
- May 1986 **Keene State College**, Keene, NH 03431  
**Bachelor of Science, Industrial Arts Education** *Recognized as KSC Honor's Scholar in 1985*  
May 1984 **Associate of Science in Manufacturing Technology**  
Recognized as Academic Honor Scholar, Professional Studies Division, Epsilon Pi and Kappa Delta Pi Honor Societies. Listed in 1986 Edition of Outstanding Young Men in America.

## CERTIFICATIONS:

### Vermont Professional Teaching Certificate – Level 2:

Endorsements: Secondary Technology Education (Expires in 2025)  
Trades and Industry: Machine Trades (Expires in 2025)  
STEM Educator 5-12 Grade (Expires in 2025)

**Certified SolidWorks Associate (CSWA)**  
**Certified Mastercam User**

*SolidWorks Certification Center* February 2012  
*CamInstructor Online training* May 2013

## EXPERIENCE:

- August 2019-  
Present **Advanced Manufacturing and Engineering Instructor: River Valley Technical Center**, Springfield, VT  
Current Teaching Responsibilities: A “hybrid”, 2-year secondary curriculum that includes both advanced manufacturing and engineering competencies and proficiencies. I have also developed a partnership with Vermont Technical College that allows adults to access VTC course here in Springfield. In addition, all of my students are eligible to receive NIMS Level One Credentials and the Certified Production Technician (CPT), Industry Recognized Credential.

### Accomplishments Include:

- Gene Haas Foundation Grant Recipient – 2019 and 2020
- Vermont Academy of Science and Engineering Grant Recipient – 2020
- Vermont FIRST FTC Robotics Grant Recipient - 2020
- Robotics Education and Competition Foundation Grant – 2021
- Adjunct Professor status at River Valley Community College and NHTI – Concord.

July 2016 to  
Present

### **Assistant Professor – Mechanical and Manufacturing Engineering Technology** **Vermont Technical College – Randolph Vermont**

Primary Responsibilities: To develop and teach manufacturing-related curricula to college freshmen through seniors in a “hands-on”, applied engineering environment. To guide Associate and Bachelor-level candidates through the senior capstone process. To act as mentor and industry liaison for students seeking employment in the manufacturing industry, both during college and upon graduation

Current Teaching Load: MEC 1011 – Design Communications 1 (Fall)  
MEC 1020 – Manufacturing Processes 1 (Fall and Spring)  
MEC 2040 – Computer Aided Technologies

Curriculum Development: Since arriving at Vermont Technical College in June of 2016, I have developed and implemented four new courses in the Manufacturing major. These courses include Manufacturing Processes II, Advanced Manufacturing and Automation, Product Design and Production, and The Manufacturing Capstone. All four courses have been approved by the Faculty Assembly and are now requirements for the Bachelors of Science in Manufacturing Engineering Technology.

Faculty Standing: In March of 2018, I was approved by the President of the College for a 3<sup>rd</sup>. and 4<sup>th</sup>. year contract. My current position within the Mechanical Engineering department is a tenure-trak position and I anticipate being promoted to Associate Professor by the Spring of 2020.

August 2015 to  
June 2016

**STEM Academy Year Two Instructor**  
**Stafford Technical Center, Rutland, Vermont**

Primary Responsibilities: The STEM Academy at Stafford Technical Center is a **Project Lead The Way** affiliated, pre-engineering program designed for high school juniors and seniors. As the Year Two instructor, I am responsible for teaching Computer Integrated Manufacturing (CIM) and Digital Electronics (DE) in accordance with the PLTW curriculum model.

PLTW Core Training Certificates: Introduction to Engineering Design (IED) – 2000  
Computer Integrated Manufacturing (CIM) – 2002  
Digital Electronics (DE) - 2015

Sept. 2014 to  
June 2015

**Mechanical Engineering Lab Manager:**  
**Shiley-Marcos School of Engineering, University of San Diego**

Primary Responsibilities: Set-up and manage seven mechanical and industrial engineering labs. This includes managing a 4.3 million dollar renovation project that increased our mechanical engineering lab space by a factor of 4. New labs include full machine shop; wood shop; welding and sheet metal shop; Senior design studio; rapid prototyping lab and ideation lab. I am also in charge of designing and implementing a school-wide lab safety badging protocol that involved more than 430 students and 35 faculty members. The protocol included four levels of badges on more than 25 pieces of equipment or operations.

**Mechanical Engineering Lab Manager (cont.):**  
**Shiley-Marcos School of Engineering, University of San Diego**

Teaching Responsibilities: **MENG 351L** – Machine Shop Lab (1 credit)  
**ISyE 350L** – Manufacturing Processes (1 credit)  
**MENG 492** – Senior Design Capstone Lab (4 credits)

Jan. 2010 to  
August 2014

**Clinical Assistant Professor and Lab Manager:**  
**Sustainability, Product Design and Innovation: Keene State College**

Teaching Responsibility: **SPDI – 280, CAM/CNC with Mastercam X7**  
**SPDI - 321, Advanced Solid Modeling with SolidWorks 2014**  
**SPDI -399, S.U.R.G.E: Supervised Undergraduate Research**  
**SPDI – 400, Manufacturing Enterprises – Senior Capstone**

These courses highlights the seamless integration of Computer Aided Drafting (CAD), Computer Assisted Manufacturing (CAM) and Computer Numerical Control (CNC), as they apply to today's modern manufacturing processes. Students improve their 3-D, parametric modeling skills through the creation of complex part geometry that is then converted into efficient tools for both prototype and production CNC equipment. **In addition to teaching, I am responsible for managing five, state-of-the art laboratories that serve the applied and project-based curriculum needs of all students in the SPDI major.**

Jan. 2010 to  
August 2014

**Lead Instructor and Curriculum Designer: Regional Collaboration for Advanced Manufacturing**  
Developed, implemented and taught four successful continuing education courses for the RCAM consortium, which included Keene State College, Keene Chamber of Commerce, Keene School District and the **River Valley Community College**. These courses include: Certified **Solidworks**® Associate (CSWA) Certificate Preparation (2 classes), Machine Processes II and **Mastercam**® Applications. More than 50 working adults were served by these industry-based training courses. I also developed a

two-year **Machine Operator Apprenticeship** program for which I am now the Year 2 Lead Instructor. I am also an Adjunct Faculty for The River Valley Community College where I teach **Advanced CNC Programming and Application and Machine Tool Boot Camp**.

Sept. 2000-  
June 2013

**Mechanical Design and Innovation Instructor: River Valley Technical Center, Springfield, VT**  
**Current Teaching Responsibilities:** A "hybrid", 2-year secondary curriculum that includes both manufacturing and pre-engineering competencies and outcomes: Additional professional responsibilities have included: District Staff Development Committee, Local Relicensure Board, Recognition Committee Chair, Recruitment Committee member, NEASC Philosophy and Goals Committee Chair, NEASC School and Community Relations Committee, Local SkillsUSA-Advisor

**Accomplishments Include:** Recognized as the *Outstanding Technical Education Program* in Vermont in 2003. Had seven students earn national championships in Automated Manufacturing (2004, 2009) and Computer Aided Drafting (2012) through SkillsUSA. Recognized as the *Vermont SkillsUSA Advisor of the Year* three times (2003, 2009 and 2013).

Oct. 2007-  
June 2010

**Program Developer and Lead Instructor: River Valley CNC Institute, Springfield, VT**  
Working under a Vermont Department of Labor Workforce Education and Training (WET) Funds grant, I developed and implemented a successful training program for CNC Operators. This 300 hour, 15 week course was designed to train unemployed and under-employed adults who were seeking to enter the manufacturing job market.

May 2005-  
June 2007

**Manual and CNC Machining Lab Instructor: Vermont HITECH, Williston, VT**  
Vermont HITECH is a non-profit, educational corporation that specializes in developing training programs for high tech career fields with high demands for entry-level positions. In 2005, I assisted the leadership team of Vermont HITECH in developing an ITAR (Information Technology Apprenticeship Readiness) for CNC operators. Subsequently, I became the lead instructor for the manual and CNC lab portion of the 9 week, immersion style training course we developed. After three sessions of the program, we successfully trained 45 entry-level CNC machine operators who became employed.

July 2005-  
June 2007

**Cooperative Education Coordinator: River Valley Technical Center, Springfield, VT**  
**Responsibilities:** Develop and maintain the cooperative work experience portion of all technical education programs at the River Valley Technical Center, by continually developing a cooperative effort between the school, the business community, and industry in the service region. Provide classroom instruction in work-readiness and career development "soft skills" that are vital to a successful transition to the workplace after high school.

May 2003-2009  
2019 - Present

**Executive Director and State Advisor for Vermont SkillsUSA**

Vermont SkillsUSA is one of five active Career and Technical Student Organizations recognized (and funded) by the Vermont Department of Education. The Vermont association is affiliated with SkillsUSA, which has a combined student and professional membership of more than 300,000 nationwide. SkillsUSA is a partnership of students, teachers and industry representatives working together to ensure America has a skilled workforce.

Sept. 1998-  
June 2000

**Technology Education Teacher: West Morris Central High School, Chester, NJ.**

**Teaching responsibilities included:** Engineering Graphics, Computer Aided Drafting and Introduction to Technology. Additional professional responsibilities include: Advisor to the American Technology Honor Society, Technology Trailblazers Initiative Team Member, Laptop Grant Initiative Team Member, Faculty representative to Curriculum Advisory Board, On Belay! Outdoor Adventure Club Advisor.

**Accomplishments included:** Participated in the complete re-writing of the district's Technology Education curriculum as a member of the Technology Curriculum Team; 1998-99. Awarded a ThinkPad 770 Laptop Computer and Docking Station through the West Morris Regional High School District- IBM Partnership; December 1998. Awarded a West Morris Regional Education Foundation Grant in June of 1999, to begin an experiential learning based Outdoor Adventure Club. Six, state level medal winners in the 1999-2000 NJTSA competitions.

Jan. 1997-

June 1998

**Assistant Principal: Kearsarge Regional High School, North Sutton, NH**

**Responsibilities included:** All building level student management and discipline including proactive (Planning Room) and logical consequence (In School Suspension, detention) systems for a student population of 620. Shared in the supervision and evaluation of 45 professional staff and 15 paraprofessionals with the building principal. Facilitated the development of three new Cooperative Education programs that were successfully implemented in September 1997. Developed and implemented multiple room and schedule changes during a complete renovation of the high school in the spring of 1997. Active member of the Pupil Placement Team, (PPT) and Student Assistance Team, (SAT). Successfully mentored two first year teachers.

**Administrative Initiatives:** Assisted in the development of an Early Childhood Cooperative Education program. Expanded second year curriculums for pre-existing Cooperative Education programs. Integrated the use of Choice Theory/Reality Therapy as a management style through modeling and training. Facilitated off-site team building retreats for departments. Organized and implemented Student Character Committee. Guided the Technology Education department. through the transition from a traditional Industrial Arts and Drafting curriculum to a Computer Aided Drafting and Pre-Engineering curriculum.

1991 -1996

**Integrated Precision Manufacturing Instructor: Technical Center at Springfield, VT**

**Responsibilities included:** Manufacturing Department Chairperson, Manufacturing Enterprises Instructor, Precision Machining Instructor, Automated Manufacturing Instructor, Industry Survey (pre-vocational) Instructor, VICA program and chapter Advisor, Tech Council advisor, numerous Technical Center committees, (i.e. budget, Discipline policy, Tech Connections grant initiative, curriculum development). Also served on district level committees such as the Education Council, NAS Steering Committee and district Technology Committee.

**Integrated Precision Manufacturing Instructor (cont.):**

**Accomplishments included:** Finalist - Commissioners Award for Outstanding Program in Technical Education, 1996, Nominee - Commissioners Award for Outstanding Program in Technical Education, 1995. Coached the 1994 National Silver Medal Team in Automated Manufacturing Technology. Trained 13 of the 16 medal winning Precision Machining students in the State of Vermont over five year period, including four Gold Medal winners. Completely redesigned the lab facility to mirror current industry push towards Total Quality Management.

## INDUSTRIAL EXPERIENCE:

2012 – 2018

**Member of Board of Trustees, American Precision Museum, Windsor, VT**

2005 -2007

**CNC Training Consultant: Hypertherm Corporation, Lebanon, NH**

2001 - 2002

**Summer Internship: Lovejoy Tool Company, Springfield, VT**

1989 - 1991

**Tool Maker/Machinist: Bryant Grinder Corporation, Springfield, Vermont.**

A two-year sabbatical in industry that better enabled me to teach current industrial standards and expectations.

1989

**Computer Numerical Control Programmer/Operator: Ultra Precision Products**

**Inc. Claremont, NH. Responsibilities included:** Programming, set-up and operation of Matsuura and Mori Seiki, three and four axis machining centers.

1987 - 1989

**Vocational Machine Trades Instructor: Claremont High School, Claremont,**

New Hampshire. **Responsibilities included:** Running a self-sufficient program, the only truly vocational program in an otherwise traditional high School. Rebuilding a program after years of declining enrollments and standards. Helped lay the ground work for a new, state of the art, vocational/technical center which opened in 1992. Also included a 3-month internship at Pine Tree Casting, part of Sturm Ruger, Inc. in Newport, NH.

1986 - 1987

**All Around Machinist: M.S. Perkins Machine Tool Corporation, Keene, New Hampshire**  
**Offset Pressman: Braden Printing, Keene, New Hampshire.**