



2015-2016 Post-Secondary Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

College or University Certifications

The signature of college or university President (or equivalent) on the next page certifies that each of the statements below concerning the institution's eligibility and compliance with the following requirements is true and correct to the best of their knowledge.

1. The college or university has been evaluated and selected from among institutions within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university is providing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a compliance review.
3. OCR has not issued a violation letter of findings to the college or university concluding that the nominated college or university has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
4. The U.S. Department of Justice does not have a pending suit alleging that the college or university has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
5. There are no findings by Federal Student Aid of violations in respect to the administration of Title IV student aid funds.
6. The college or university is in good standing with its regional or national accreditor.
7. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

U.S. Department of Education Green Ribbon Schools 2015-2016

Public 4-Year Public 2-Year Private Non-Profit

Name of President/Chancellor: Dr. Michael McDonough

Official College or University Name: Raritan Valley Community College

College or University Street

Mailing Address: PO Box 3300, 118 Lamington Rd, North Branch NJ 08876

(If address is P.O. Box, also include street address.)

County: Somerset

IPEDS Number*: 186645

Telephone: 908-526-1200

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Web site/URL: <http://www.raritanval.edu> <http://www.raritanval.edu/green> E-mail: susandorward@raritanval.edu

*Integrated Postsecondary Education Data System



I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

Date: 11/12/15

(President's/Chancellor's Signature)

Nominating Authority's Certifications

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the college or university's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The college or university has been evaluated and selected from among institutions within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Office of the Secretary of Higher Education

Name of Nominating Authority: Rochelle Hendricks, Secretary of Higher Education

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

Date: January 28, 2016

(Nominating Authority's Signature)

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Provide a coherent summary that describes how your college or university is representative of your jurisdiction's highest achieving green school efforts. Summarize your strengths and accomplishments in all three Pillars and their underlying



Elements. Then, include concrete examples for work in every Pillar and Element. Only institutions that document progress in every Pillar and Element can be considered for this award.

SUBMISSION

The nomination package, including the signed certifications and documentation of evaluation in the three Pillars should be converted to a PDF file and emailed to ed.green.ribbon.schools@ed.gov according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: March 31, 2018

Public Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

SUMMARY AND DOCUMENTATION OF NOMINEE'S ACHIEVEMENTS

Raritan Valley Community College has been an environmental leader since 2007. RVCC has earned a dozen environmental awards, has innovative sustainability courses and degree programs, and extensive community service and health education programs. RVCC is the first community college in the country to sign an environmental stewardship agreement with the EPA. RVCC was the first community college in the country to run an energy-saving cogeneration plant, which contributes to our 51% emissions reduction since 2005. We are the first NJ college with an AASHE STARS rating and the first with River Friendly certification. RVCC is the only community college in NJ to offer a liberal arts AA degree with an environmental studies option. We have an award-winning service learning program through which many students perform environmental and health & wellness work in the community.

RVCC has reduced its environmental impact and costs through a comprehensive program guided by our EPA Memorandum of Understanding (which covers all Pillar I elements) and our River Friendly certification requirements (Element 1B). The College has reduced Scope 1 and Scope 2 GHG emissions by running a cogeneration plant, buying 100% renewable energy, building to LEED standards, and performing numerous energy efficiency upgrades. The college has improved water quality by adopting IPM and creating a rain garden and no-mow areas. RVCC conserves water by collecting rainwater for toilets (in the Bateman Center) and garden irrigation. RVCC uses water efficiently by installing high-efficiency fixtures and using a scheduled, moisture-sensing sprinkler system (watering only the athletic fields). RVCC



has a 44% waste diversion rate and was just named a 2-year college top performer in waste management by the AASHE STARS program. RVCC was just named a Platinum-level Smart Workplace by RideWise for outstanding achievement in creating programs that provide and promote commuting options for employees. RVCC offers premium parking for carpools and free electricity for electric vehicles.

RVCC promotes health and wellness through numerous initiatives. As part of our River Friendly certification, we adopted a strict IPM program that was reviewed and approved by the NJ Water Supply Authority. Our custodial supplies contract requires that all cleaning products be Green Seal or UL Environment (Ecologo) certified to the extent possible. RVCC builds to LEED Silver standards, which promotes high indoor air quality through the use of low-VOC materials, paints, and adhesives and 30% increased ventilation. The new Bateman Center boasts a two-story green wall of plants, which helps filter airborne toxins and creates fresh oxygen. The College has an optical clinic, gardening programs, and a yoga and meditation room. The College partnered with a non-profit to develop documentaries in which students tell their stories of alcohol and drug abuse. Student volunteers are trained to be peer educators for pre-pregnancy education, and to identify victims of domestic violence and connect them with resources.

RVCC offers exceptional environmental and sustainability education for a community college. The Environmental Science and Biology departments offer introductory, interdisciplinary courses that are popular with non-science and science majors alike: "Plants, Humans, and the Environment," "Energy and the Environment," and the non-major "Introduction to Environmental Studies." RVCC offers an Environmental Science AS degree, a Liberal Arts AA degree with an Environmental Studies option (unique in NJ), an Environmental Controls AS degree and certificate, as well as LEED and solar panel installation professional education. The environment and sustainability are incorporated into courses in 15 departments, including English, Marketing, Philosophy, and Sociology. Instructors emphasize the issues, potential consequences and solutions to motivate students to learn the relevant STEM material. Part of RVCC's mission is to encourage social responsibility and engaged citizenship. Through the College's award-winning Service Learning Program, students work on environmental, sustainability and health projects for class assignments, extra credit, or their Student Leadership transcript. Projects include rainforest protection, endangered plant species conservation, land preservation, rain garden maintenance, stream assessments, and beach cleanups. RVCC has many partnerships with local environmental organizations that support such projects as well as student internships. RVCC is partnering New Jersey Audubon to conduct education, research, and outreach on forest health in central New Jersey, with the support of a 3-year grant from the National Science Foundation's SENCER-ISE Program (Science Education for New Civic Engagement and Responsibilities - Informal Science Education). 11 student interns worked on this project in 2014-15.

DOCUMENTATION OF STATE EVALUATION OF NOMINEE

Pillar I: Reduced Environmental Impact and Costs

Narrative: Describe how your college or university is reducing environmental impact and costs by reducing or eliminating greenhouse gas emissions; improving water quality, efficiency, and conservation; reducing waste production; and using alternative transportation. Identify your institution's energy-efficient facilities and practices, ecologically beneficial uses of grounds, and methods of disposal for solid and hazardous wastes.

Reducing Emissions

- **GHG Inventory** - According to RVCC's 2013-14 Greenhouse Gas Inventory report, RVCC has reduced its scope 1 and scope 2 greenhouse gas emissions by over 51% since 2005.



- **Wind energy** - In December 2014, RVCC began purchasing Green-e certified wind energy (RECs) for 100% of its purchased electricity. This is an increase from 35% previously. (Thus the next GHG inventory report is expected to show an emissions reduction of as much as 72% from 2005, based on current usage.)
- **Solar** – RVCC has a 446kW solar array on campus, which provides most of the electricity for the Arts building and Childcare Center. Since the electricity is generated on-site, there are almost no transmission losses and the College is able to purchase the generated electricity for just 5 cents/kWh. Note that RVCC does not yet own the array or SRECs for this array, but ownership will be transferred to RVCC after 15 years.
- **Cogeneration** - In 2007, RVCC became the first community college in the country to run a high-efficiency cogeneration plant, a combined heat and power system with a high efficiency engine that burns natural gas to create electricity. The engine is coupled to an absorption unit that converts exhaust engine gases to either 320 tons of cooling or enough hot water to bypass conventional boilers. This allows for a significant improvement in overall fuel efficiency, resulting in lower operating costs and CO2 emissions. The plant generates 1.4MW and is only run during business hours when campus electrical demand is high. The plant reduces carbon emissions by 1900 tons per year and saves approximately \$400,000 in annual energy costs. The plant is run during business hours only, when electricity demand is high. (Most plants are run 24x7, which is not cost-effective for commuter colleges.)
- **Reduced refrigerants** – As part of LEED construction of new buildings, RVCC has no CFC refrigerants in these buildings and minimizes the use of all refrigerants.
- **Energy efficiency** – RVCC has further reduced emissions by building according to LEED standards, upgrading HVAC equipment and lighting, recommissioning equipment, and installing automated controls. See Energy Efficient Facilities and Practices below.

Water Quality, Efficiency, and Conservation

- **Water savings** – Through a comprehensive leak fixing program and efficient fixture installations, RVCC has reduced its water usage by 82% since 2009, saving \$280,000 annually in water and sewer charges.
- **River Friendly** - In 2011, RVCC became the first college to be certified as a River Friendly Business by the NJ Water Supply Authority. RVCC has two tributaries of the north branch of the upper Raritan River running through its campus. River Friendly certification was awarded to RVCC for its efforts over 18 months to improve local water resource quality through water quality management, water conservation, and education and outreach. RVCC created a rain garden and no-mow areas to slow and filter runoff, installed 3 industrial-sized rain barrels used for watering plants, and adopted integrated pest management. Other actions completed for certification include training students to conduct stream visual assessments on the campus streams, planting willow and dogwood stakes along a stream bank, evaluating stream-side buffer quality and areas for improvement, mounting educational water quality posters across campus, and holding a River-Friendly seminar. RVCC is in the process of being recertified.
- **Rainwater harvesting system** - The Bateman Center for Student Life and Leadership, in the process of being certified as LEED Gold, opened in 2014. The building has a rainwater-harvesting system that captures rainwater from the roof and stores it in a 4,000 gallon tank in the basement. The water is exposed to ultraviolet light and passes through a filter before being piped to the buildings toilets and the irrigation system for the two-story green wall.
- **Fixtures** – In its EPA MOU, RVCC committed to following WaterSense guidelines and install WaterSense fixtures where appropriate. Since 2009, all installed faucets are low-flow and either metered or with sensors, all urinals are waterless, and toilets are low gpf (e.g., 1.28 in the Bateman Center).
- **Outdoor watering** – The athletic fields are watered via scheduled moisture-sensing sprinklers. They are the only grassy areas that are watered. Plants are watered with rainwater collected in 3 rain barrels (500+ gallons each).
- **Leaks** – RVCC Facilities is diligent about finding and fixing leaks. Underground leaks are particularly problematic. We found and fixed several leaks in recent years, which resulted in significant reductions in water usage.



- **Green roof** – RVCC’s green roof stores and filters rainwater. See Energy Efficient-Facilities and Practices below for more information.
- **Goose management** – Goose feces reduce water quality. RVCC has been working to reduce the permanently resident Canada Goose population on campus by adding goose eggs and, starting in March 2015, hiring a goose-chasing dog to harass the geese five times a week. It has been working: for two weeks in October, there were no geese sighted on campus.

Waste Reduction

- **AASHE STARS** – In 2015, AASHE STARS recognized RVCC as the 2-year college top performer (#5 overall) in the Waste category.
- **WasteWise** - RVCC is a WasteWise partner and participates in the New Jersey WasteWise Business Network and WasteWise’s Food Recovery Challenge program. 2014 WasteWise data shows that RVCC has a 44% diversion rate.
- **Recycling programs** – RVCC recycles absolutely everything it can. Multiple sets of recycling containers are in every hallway and parking lot. In addition to the standard recyclables, we recycle batteries, wooden pallets, toner and waste toner cartridges, electronics, demolition & construction waste, scrap metal, bulbs, ballasts, motor oil, and kitchen oil and grease.
- **Organic materials** – Food and paper product waste is collected in biodegradable bags from the kitchen, cafeteria, and café and taken to an industrial composting facility. Organics collection is provided at events upon request. We are in the process of adding organics collection in student lounge areas. Yard waste is either chipped or added to a compost pile.
- **Paper waste reduction** – RVCC makes extensive use of online tools and documents, which significantly reduces paper use and waste. Faculty is trained to use WebStudy, which facilitates online distribution of materials, submission of assignments, and grading. Course catalogs, schedules, and announcements are online. Printers and copiers default to double-sided, and IT has implemented page limits for computer lab printers.
- **Bottle filling stations** – RVCC has a dozen water bottle filling stations across campus. The stations enable people to fill reusable water bottles with filtered chilled tap water, eliminating the cost and waste of disposable water bottles.
- **RecycleMania** - In 2015, RVCC participated in RecycleMania for the first time. RVCC rated 21st out of 142 for waste minimization, came in 2nd of 74 in 3R Actions social media competition for mid-size schools (1st in the Recycle and Reuse categories), and won Waste Reduction Case Study award for our Travelling Zero Waste Game. Two student interns helped promote recycling online, with educational posters, and by interactively teaching cafeteria and café patrons how to sort their waste properly via the Travelling Zero Waste Game.
- **Student recycling studies** – Environmental Science and Environmental Club students have conducted extensive studies of people’s recycling habits on campus. For the last two semesters, they have conducted 6-week studies in which they weighed trash and recyclables in hallways across campus, determined recycling rates, counted and catalogued misplaced items, created educational and behavior-change posters, and developed recommendations for improvement that the Facilities department acts on (by adding bins, improving signage, etc.).
- **Recycled content** – RVCC buys 100% recycled content toilet paper and paper towels and 30% recycled content office paper.
- **Sales/auctions** – RVCC attempts to auction, sell, donate, or recycle used items (such as furniture) that it no longer needs, to avoid putting them in the landfill.

Transportation

- **Electric vehicle chargers** - RVCC offers electric car charging through ChargePoint America, a program to provide electric vehicle charging infrastructure to nine selected regions in the United States, made possible by the American



Recovery and Reinvestment Act through the Transportation Electrification Initiative administered by the Department of Energy. The chargers serve four preferred parking spaces outside of the West building. There is a 40-cent connection fee, and the College does not charge for the electricity itself. Currently, there are at least five electric vehicles on campus. The charging stations are open to the public as well.

- **Platinum NJ Smart Workplace** - In 2014 and 2015, RVCC earned Platinum NJ Smart Workplace awards from RideWise, Somerset County's transportation management association. The award recognizes the College's commitment to alternative transportation, including the fact that 9% of the College's course enrollment is for online classes, which reduces the number of commuter trips to the school. RVCC met 11 other criteria for the award, such as holding commuter information sessions and providing pretax payroll deductions for commuting.
- **Carpools** – 26% of RVCC's full-time students carpool or get a ride to campus at least once a week. RVCC has dedicated three highly-desirable parking spaces for carpools. RVCC carpoolers registered with RideWise receive a placard to put on their car's dashboard, to indicate that they can park in these registered carpool-only spaces. Security enforces the policy by having non-carpool cars towed. RideWise offers a carpool matching program to help people find carpools.
- **Free ride home** – People who carpool, vanpool, take mass transit, bicycle or walk to RVCC two or more times per week can register with RideWise's Ticket Home program. Registered commuters can get reimbursed for emergency rides home due to unexpected overtime requests, a family or medical emergency, a carpool breakdown or a transit service interruption.
- **Clean vehicle fleet** - RVCC has committed to keeping at least 15% of its fleet as hybrid vehicles. One of the seven vehicles in the fleet is a hybrid.
- **Buses** - Three bus routes come to campus. In 2010, Somerset County was planning to cancel bus service, but the administration and students campaigned against this so successfully that the county added a second bus route.
- **Discount monthly passes** - Full-time RVCC students are eligible for 25% off a regular rail, bus, or light rail monthly pass when enrolled through NJ Transit's Student Pass program.

Energy-Efficient Facilities & Practices

- **Energy savings** – Since 2005, RVCC has reduced natural gas usage by 65%. This combined with falling gas prices, modest reductions in electricity usage, and the purchase of cheap electricity from the on-campus solar array saves the College almost \$1,000,000 per year, helping to keep tuition costs low.
- **Campus loop** – RVCC heats and cools most of its buildings via hot and chilled water loops that connect the buildings to the cogeneration plant. When generating electricity, the cogeneration engine creates heat, which is used to heat or cool a campus loop without requiring additional fuel.
- **Green roof** - Student Frank Dahlhaus, with Dr. Jay Kelly (Biology/Environmental Studies) and the support of the Facilities & Grounds department, created a 600 square foot green roof on a portion of Hunterdon Hall. The green roof provides insulation that helps save energy. The green roof trays contain a wide variety of locally native plants that store and filter storm water. The water storage helps delay the flow of storm water, reducing storm water runoff peaks and storm water erosion.
- **Pool** – Heating a pool requires a lot of energy. RVCC has installed a heat exchanger to heat the pool efficiently and quickly from the hot water loop in the winter months, eliminating the use of a gas boiler.
- **LEED (Leadership in Energy and Environmental Design)** - RVCC is committed to building to LEED Silver level or better. The West building (2007) was built to LEED Silver standards, the Bateman Center for Student Life and Leadership (2014) is being certified as LEED Gold, and the Science addition and Workforce Development building (both 2016) will be LEED Silver. RVCC's LEED-designed buildings earn LEED Energy and Atmosphere credits (EAC) for enhanced commissioning and optimizing energy usage by about 15% over ASHRAE 90.1 2007. (The minimum requirement is 10%.) Enhanced commissioning requires that a commissioning agent review the design before



construction, review contractor submittals, develop system manuals, and review the building 8 months after completion.

- **Energy audits** – In 2009, RVCC took advantage of NJ Clean Energy’s Local Government Energy Audit program and had energy audits done for all campus buildings. The measures recommended in the audit reports have guided RVCC’s energy efficiency upgrades.
- **Certified LED lighting** – RVCC is in the middle of converting most interior, exterior, and parking lot lighting to LED, taking advantage of NJ Clean Energy’s SmartStart rebate program. All new lighting is LED and most is either ENERGY STAR or Design Lights Consortium certified, as required by the rebate program.
- **Building management system (BMS)** – All buildings are connected to a BMS that enables remote, scheduled setting of thermostats for the HVAC equipment on campus. Most equipment is set for the energy-saving “unoccupied” temperature setting overnight and on holidays. For large spaces that do not have a regular schedule (the conference center, Planetarium, auditorium, and theaters), the Sustainability & Energy Coordinator regularly programs customized schedules, saving additional energy. The system also allows for scheduling parking lot lights according to sunset and sunrise times. The BMS creates alerts when equipment is not functioning efficiently so that Facilities can investigate and fix the problem.
- **Recommissioning equipment** – All HVAC equipment is recommissioned when it is added to the BMS. (Subsequently, the BMS alerts trigger recommissioning as needed.)
- **Occupancy sensors** - Many classrooms, hallways, and even vending machines have occupancy/motion sensors.
- **Computer shutdowns** – Campus computers are automatically shut down overnight.

Grounds

- **Natural areas** – RVCC’s 240 acre campus includes 2 acres of water bodies, 12 acres of wetlands, 60 acres of forest, and 50 acres of meadow/no-mow areas. Students conducted a flora and fauna inventory and identified 289 species on campus.
- **Native plants** – As part of River Friendly certification, RVCC plants only native plants on campus and is working to reduce the presence of invasive plants.
- **No-mow areas** – Our area of NJ has insufficient grassland meadow to support grassland birds and animals. Storm water runoff is also a problem due to the high percentage of impervious surfaces. No-mow areas not only provide wildlife habitat but also slow, absorb, and filter storm water. As part of River Friendly certification, RVCC created new no-mow areas around the campus stream and pond and extended existing no-mow areas, reducing the mowed lawn by 25%.
- **Rain garden** - With the support of the RVCC Foundation, the College installed a rain garden at the south entrance to campus. This garden is planted with native plants and serves to naturally slow and filter pollutants from storm water before it reaches the pond. Each semester, Environmental Science & Sustainability students learn about and work in the rain garden.
- **Enabling garden** – This will be an accessible, sense-stimulating garden full of native flowers and grasses. It is open to the public and intended particularly for veterans and the disabled to enjoy. The groundbreaking occurred on 10/1/15. Rotary, the Rotoract Club, Rutgers, and project lead Jack O’Rourke are collaborating to build the garden. The garden is Jack O’Rourke’s Eagle Scout project.
- **Monarch-friendly and organic gardens** – See Outdoor Time below.

Waste Disposal Methods

- **Solid waste** – RVCC’s waste hauler takes our waste to the Hunterdon County Transfer Station. The waste then goes to the Grows/Tullytown landfills in PA. These landfills collect methane and send it to a power plant to be converted to energy. This reduces RVCC’s carbon footprint by 7 metric tons of CO₂ equivalent annually. Prior to 2014, waste



was taken to a landfill without methane recovery. Only 10% of RVCC's demo and construction waste goes to a landfill.

- **Hazardous waste** – RVCC safely disposes of all hazardous, special, and universal waste by contracting with hazardous waste haulers certified to meet all applicable state and federal regulations. This includes medical waste from our Nursing and Phlebotomy programs and chemical waste from our Chemistry program. These types of waste are collected in two highly-controlled locations on campus. The facility and records are inspected regularly by NJ DEP. See Chemical Management in Pillar 2 below for additional information.
- **E-Waste** – E-waste that cannot be recycled is collected by Facilities staff and stored in a secure storage area for pick-up. RVCC's maintenance department is instructed to place e-waste in a proper container. Once the containers are full, they are moved to RVCC's e-waste holding station in the West building. There the Facility and Safety Manager ensures the items are in the appropriate containers (per DOT guidelines), then secures, labels, and dates the containers. To ensure worker safety, staff attends annual training on e-waste by a qualified vendor. In most cases workers handling e-waste are required to wear gloves and eye protection. The collecting organizations provide documentation of the recycled/donated items. Recycling certificates verify that the material has been recycling in accordance with US EPA and DEP waste management regulations (for NJ or PA, depending on vendor location).
- **Waste toner** – Copy center staff collects waste toner containers and ships them to a certified third party for hazardous waste disposal. They follow all applicable regulations.

Pillar 2: Improve the health and wellness of students, faculty, and staff

Narrative: Describe how your college or university improves the health and wellness of students, faculty and staff by integrating a campus-wide environmental health program and promoting sound health and wellness practices. You should discuss integrated pest management, contaminant controls and ventilation, asthma controls, indoor air quality, moisture control, and chemical management. Address the amount and type of outdoor time that your students and staff have, as well as the types of fresh, local, and organic food that they eat. Other components you may want to include are: health education, health services, counseling, psychological and social services, staff health promotion and family and community involvement.

Integrated Pest Management

In 2010, RVCC developed and adopted an Integrated Pest Management (IPM) plan and selected an IPM Coordinator to ensure its implementation. The plan was reviewed and approved by the NJ Water Supply Authority as part of the campus's River Friendly Business certification. As a result of this plan, the college's pesticide contractor follows the New Jersey Schools IPM program used in public schools. The College uses no herbicides or fertilizers, with the only exceptions being: herbicides may be used to target highly invasive plant species (such as Tree-of-heaven and Japanese Knotweed); and organic fertilizers may be used on the athletic fields as indicated by soil test results (testing every 2 years).

The IPM procedures determine when to control pests and whether to use physical, mechanical, biological or chemical methods. Non-pesticide pest management methods are used whenever possible. The plan provides details of outdoor pest identification, prevention and control processes to be used in RVCC's implementation of IPM. It includes:

- a definition of the IPM Coordinator role
- an initial inventory of pest problems, problem areas, and current monitoring and control activities;
- threshold action levels for all anticipated outdoor pests;
- an outline of nonchemical controls that will be routinely practiced on campus grounds;
- links to resources that provide details about the use of low-impact controls (rather than non-low-impact pesticides) for identified pests;

- and sample record sheets for maintaining records of all IPM activity

Contaminant Controls & Ventilation, Asthma Controls, and Indoor Air Quality

- **Green wall** – The new Bateman student center features a two-story green wall of plants adjacent to a large, open student lounge. Not only does it create a relaxing environment for the students, but it also filters the air and produces fresh oxygen. It contains plants such as the Peace Lily that are known to filter pollutants.
- **Cleaners** - To help keep toxins out of our buildings, the janitorial staff cleans with products that are Green Seal or UL Environment (Ecologo) certified to the extent possible. RVCC’s custodial supplies contract requires this.
- **LEED** - As part of its Memorandum of Understanding with the EPA adopted in 2009, RVCC is committed to constructing buildings that meet LEED Silver standards or better. These buildings have improved air quality and ventilation and reduced contaminants, due to high quality HVAC and filters as well as low VOC materials, paints, and adhesives. The LEED Indoor Environmental Quality points for air quality that RVCC will earn for the Bateman Center (completed), Science Addition (under construction), and Workforce Development building (in design) are:
 - Pre Req 1 – Minimum Indoor Air Quality performance - Meet ASHRAE 62.1 2007 for ventilation
 - Pre Req 2 - Environmental Tobacco Smoke Control – No smoking in the building
 - IEQ c2 – **Increase ventilation – improve 30% over ASHRAE**
 - IEQ c3.1 – Construction Indoor Air Quality Management Plan
 - IEQ c4 – Low emitting materials – adhesives, paints flooring, composite woods
 - IEQ c5 - Indoor Chemical and pollutant Source control – permanent entrance mats, MERV 13 filters
- **Maintenance** - All indoor air handlers are serviced on a preventative maintenance program. Air filters are changed quarterly if not more frequently. All corrective maintenance, temperature, and air quality issues are registered and tracked through our online computerized maintenance management system (CMMS). Corrective action is completed by both our in-house and contracted services staff.
- **Smoke-free** - RVCC is a no-smoking campus. The only place on campus where people can smoke is in the parking lots. Signs are prominently placed around campus and Security enforces the policy.
- **Construction vehicles** - All construction vehicles use ultra-low sulfur diesel (ULSD) and the newer on-road vehicles have diesel particulate filters (DPFs).
- **No idling** - According to state law (NJAC 7:24-14 for diesel vehicles and 7:27-15 for gasoline vehicles), idling for more than 3 minutes is prohibited in New Jersey, with limited exceptions. RVCC has a “no idling” sign posted at the main loading dock (which is near an academic building and the cafeteria), and Security has been instructed to enforce this. In addition, the anti-idling policy is stated on the college’s transportation web page.
- **Moisture control** - Portable dehumidifiers control moisture as needed across campus.

Chemical Management

- **Training** – Employees are required to attend a training session to increase their awareness about hazardous materials. Attendees learn how to interpret an SDS (safety data sheet) and hazardous materials pictograms (diamond-shaped signs).
- **Hazardous chemicals** - RVCC has adopted an Integrated Pest Management (IPM) policy and a green cleaners purchasing policy that reduce the amount of hazardous chemicals on campus. Most of these hazardous chemicals are used by our chemistry program as part of the curriculum. Hazardous chemicals are inventoried and placed in recorded locations on secure shelving in a locked room. Bottles dated and given a hazardous materials label. The room has controlled exterior access with surveillance cameras monitored by campus security. The facility and records are inspected regularly by NJ DEP. See **Waste Disposal Methods – Hazardous waste** above for disposal information.



Outdoor time

- **Campus-wide gardening program** – Every spring, Human Resources and Facilities & Grounds organizes a series of gardening events around campus for employees and students to plant native plants. In 2015, 83 students, faculty, administrators, staff and preschoolers (from the childcare center) planted 345 Monarch-friendly plants in 8 gardens across campus. For our support of the threatened Monarch population, Monarch Watch designated the campus as a Colossal Monarch Waystation.
- **Student gardening** - Student volunteers from the Environmental Club and the college community help to plant, maintain, and harvest produce from the campus's .4-acre organic garden. They also created four large flower beds on campus for planting local native seeds that they collect.
- **Employee walking program** – A few years ago, RVCC started a walking group to coincide with National Walk @ Lunch Day in April. Walking routes are led by Fitness co-op students. On rainy days, they map out an indoor walking route. RVCC provides pedometers for walkers interested in counting their steps. There is also an informal walking group.
- **Athletics** - RVCC fields teams for Men's & Women's Basketball, Baseball and Softball, Men's & Women's Soccer, and Men's & Women's Golf. The Athletic Department also sponsors Intramural Programs in sports such as basketball and volleyball. The campus has an outdoor track and outdoor basketball courts that are available for general use.
- **Childcare** - The Childcare Center has extensive outdoor facilities that include a playing surface, climbing and swing sets, a large grassy area, and butterfly gardens that they collect eggs from to raise and release butterflies.
- **Outings** – The Environmental Club sponsors numerous outings and outdoor work. Recent activities include over-tapping invasive Norway maple trees in Three Bridges' Forest Hill Preserve to help restore the forest (by depleting the nutrient reserves of the invasive trees and allowing for greater native tree regeneration), collecting and selling wild blueberries and strawberries from the Pine Barrens, collecting native wildflower seeds from local parks. See Civic Skills below for more information about the maple tree activities.

Food

- **Sustainable Food Day** – In October 2015, RVCC celebrated Sustainable Food Day in the cafeteria. Culinart, our food vendor, prepared a special menu of vegan and vegetarian dishes with local produce. The Environmental Club sold organic fair-trade chocolate and shade grown, organic Bird Friendly® certified coffee.
- **Certified sustainable food** - In RVCC's cafe and cafeteria, Culinart features fair trade coffee and sustainably-harvested fish.
- **Sustainable menu options** – Culinart serves vegan, vegetarian, gluten-free, and low-calorie meal options. There is a complete-protein vegan dining option at all meals. Vegan salads (including legumes), roasted vegetables, tofu, and vegan sandwiches are available daily. Vegan soups are offered twice a week and vegan entrees once a week.
- **Local food** – Culinart serves local produce when available. Seasonally, the Environmental Club sells local blueberries, strawberries, maple syrup, and (depending on availability) produce from the organic garden.

Health Education

- **Producing, directing and screening documentaries** – Adjunct Professor Harry Hillard directed RVCC students in two documentaries. The films were produced by the Safe Communities Coalition of Hunterdon and Somerset Counties (see Community Involvement below). The BACCHUS Club hosts regular screenings on campus.
 - "In a Split Second" examines how lives are altered forever by a single decision made while under the influence of alcohol or drugs. The documentary features actual offenders, as well as the family members of both victims and offenders, who are members of the RVCC community and openly share their life-changing stories. Its goal is to educate 18-25 year-olds that when peers make a single bad choice, it has consequences that they and their families will live with forever.



- “From Pills to Heroin: The Domino Effect” features students who share their own stories of how recreational use of prescription medications were a gateway to heroin addiction. Pills to Heroin’s message includes the importance of cleaning out medicine cabinets that contain expired or unused medications and how to properly dispose of them in permanent prescription drop boxes. BACCHUS promotes the use of drop boxes.
- **Preconception Peer Educator Program** - The US Department of Health and Human Services, Office of Minority Health (OMH) launched the Preconception Peer Educators (PPE) Program as part of the "A Healthy Baby Begins with You" campaign. The goal of this program is to raise awareness about health disparities in birth outcomes, specifically in the African American community. In 2015, RVCC offered free workshops for students interested in public health, health care, nursing, and related fields to become Preconception Peer Educators.
- **Workshops** – RVCC Advising & Counseling, BACCHUS, and the Women’s Center sponsor regular student health education workshops. In Fall 2015 there were 11 workshops on the topics of time and stress management, healthy relationships, eating disorders, marijuana, social anxiety, depression and bipolar disorder, relaxation, and sexual abuse & violence. The Women’s Center sponsored a workshop on “Domestic Violence in the Muslim Community.”
- **Mental Health Awareness Day** – In 2015, RVCC celebrated this day by holding a fair with informational tables and representatives from 18 community partners and student clubs. There was also a “Testimonies of Hope” presentation featuring RVCC students sharing their personal stories.
- **BACCHUS Club** – BACCHUS stands for Boosting Alcohol Consciousness Concerning the Health of University Students. The members are RVCC student peer educators on healthy and safe lifestyle decisions concerning alcohol, tobacco, illegal drugs, sexual practices and other high-risk behaviors. They provide free condoms, free and confidential HIV testing monthly and informational events about health, alcohol, suicide prevention, mental health awareness, alcohol poisoning, designated drivers, the Great American Smokeout, don’t text and drive, and partying without getting drunk.
- **To Write Love on Her Arms** – This is a non-profit movement dedicated to presenting hope and finding help for people struggling with depression, addiction, self-injury, and suicide. RVCC’s chapter of TWLOHA educates and supports students and connects them to treatment and sources of help.
- **Student Nurses Association** - The SNA is dedicated to improving health and well-being on campus, in the community, and beyond. They hold health information sessions and lead or participate in events that better some aspect of health and well-being. For example, they hosted an ice bucket challenge to promote awareness of ALS and held an Ebola educational fundraiser for Doctors without Borders. The SNA develops student awareness about various medical conditions by providing information and flyers on a dedicated bulletin board. Each month the board hosts a different diagnosis and strategies to improve health.

Health Services

- **Optical Clinic** – RVCC’s non-profit Optical Clinic is available to all students and employees. It is a teaching clinic for the students in the Ophthalmic Science program. The students operate the clinic under the direct supervision of a licensed optician. Prices cover the cost of materials and expenses, a fraction of the retail price.
- **Reflection Room** – RVCC recently created this quiet space for meditation, yoga, and workshops. Students and employees are welcome to use this space.
- **HIV Testing** – The BACCHUS Club sponsors free confidential HIV testing monthly.

Counseling, Psychological and Social Services

- **Personal Student Counseling** - Students come to Advising and Counseling Services for academic, personal, social, emotional, and vocational issues. ACS provides free and confidential short-term counseling services to the college community, including individual, couple, and group counseling sessions. In addition to academic advisors, we have five counselors on staff. Two are Certified Social Workers and our Mental Health Counselor is a Licensed Professional



Counselor and a Clinically Certified Forensic Counselor.

- **International and Veteran Student Services** – The Coordinator of International and Veteran Services is responsible for the admission process for all international F1 status students, assisting with the F1 visa process, advisement on immigration policy and procedures and the maintenance of all F1 student records at RVCC. She also works with veteran students and is a certifying official for VA Benefits.

Employee Health Promotion

- **Employee walking program** – See Outdoor Time above.
- **Weight Watchers at Work** – Weight Watchers offers employees a free information session on campus quarterly, followed by (paid) weekly lunch meetings on campus.
- **Fitness Center programs** – The Fitness Center offers free small group orientation and seminars to faculty and staff. In fall 2015, 20 sessions were offered on designing your workout, TRX-Functional training, core/abs, cardio, and strength training. Access to the Fitness Center is free to students and employees.
- **Yoga for beginners** – RVCC's chapter of the American Association for Women in Community Colleges offers free yoga classes to employees.
- **EAP** – RVCC offers an Employee Assistance Program for full-time faculty, staff and their family members. The EAP can assist with: work related issues, career counseling, depression, anxiety, phobias, stress and relationship, alcohol, drug, and gambling problems. Each employee or immediate family member is eligible for up to 6 sessions per incident, without limit to the number of episodes per year. If family counseling is required, treatment sessions can be combined as needed to maximize benefits.
- **Flu shot clinics** – RVCC offers flu shots to employees every fall.

Family and Community Involvement

- **Safe Communities Coalition of Hunterdon & Somerset Counties** – SCC's vision is to live in a safe and healthy community by eliminating drug use, underage drinking and prescription drug abuse. SCC is headquartered on campus and holds monthly work groups to which students, parents, employees, and community members are invited. Through widespread community collaboration, environmental change, and community education in Hunterdon and Somerset counties, they address reducing Rx drug abuse, underage drinking, tobacco, marijuana, and other drug use. They are funded through 2017 by the NJ Division of Mental Health and Addiction Services. SCC funded "In a Split Second" and "Pills To Heroin: The Domino Effect" (mentioned in Health Education above). These films are available online, have been used by the drug courts and Intoxicated Drivers Resource Centers in both counties, and have also been shown to high school and college students, parents, educators, public officials, and civic organizations via Town Hall meetings and other events. SCC was previously known as the HOPE (Healthy Options for Prevention and Education) Project, a grant-funded substance abuse prevention project.
- **CUT IT OUT program** – After attending the Annual Candlelight Vigil for Domestic Violence Victims sponsored by the Resource Center of Somerset, RVCC Cosmetology students received training designed for students and salon professionals to recognize the signs of domestic abuse and how to refer clients for help.
- **Kids Like Us** – This student club works with kids who need a positive impact on their lives. The club visits children in hospitals, after care and youth centers, and children battling illness. They also fundraise to benefit organizations working with and for children.
- **Hemophilia Walk** – RVCC's Student Nurses Association and students in the Trends in Nursing course partner with the Hemophilia Association of New Jersey for the annual Hemophilia Bleeding Disorders Awareness Walk. The walk is in commemoration of World Hemophilia Day, an international observance held annually on April 21 to raise awareness and funds for Hemophilia, Von Willebrand's Disease, and other bleeding disorders. The event features a one-mile family fun walk, blood pressure screenings, and information tables about bleeding disorders.



- **Relay for Life** – RVCC regularly hosts Relay for Life, an outdoor relay fundraiser in support of the American Cancer Society. Students also have a Relay for Life Club.
- **Bone marrow registry at blood drives** – RVCC sponsors on-campus blood drives twice a year, at which people have the opportunity to register for the National Bone Marrow Registry.

Pillar 3: Effective Environmental and Sustainability Education

Narrative: Describe how your college or university provides effective environmental and sustainability education by incorporating STEM, civic skills, and green career pathways. Provide examples of interdisciplinary learning about the key relationships between dynamic environmental, energy, and human systems. Demonstrate how your institution uses the environment and sustainability to develop STEM content, knowledge, and thinking skills. You should also discuss how your institution develops and applies civic knowledge and skills to environmental and sustainability education.

STEM

- **Interdisciplinary courses fulfilling the science requirement** – All Associate Degree students are required to take 3 credits of science or math and 4 credits of a science lab course. This is a great opportunity to expose all students to interdisciplinary courses about the environment and sustainability.
 - **“Plants, Humans, and the Environment”** – This Biology course, popular with non-science majors, meets the lab science requirement. It is the only general education lab science course that combines the traditional focus on a body of scientific knowledge, method and theory with its real-world applications in understanding and addressing contemporary and historical environmental and social problems. Lectures cover the cultural, economic and political significance of plants to human societies, and the effects of human activities on plants and the environment. Labs provide a first-hand introduction to the current and historical human uses of plants (e.g., food, fuel, shelter, fiber, dyes) in New Jersey and around the world.
 - **“Energy and the Environment”** – This Environmental Science course will be offered for the first time in Spring 2016. Regardless of a person’s academic major, society needs a spectrum of citizens, communicators, policy makers and specialists with a fundamental understanding of energy, possible energy futures and associated environmental effects. This course provides a broad introduction to energy and energy issues as they relate to generation options, utilization and environmental impacts. Topics include overviews of traditional carbon based energy sources, nuclear options and alternative energy technologies such as solar, wind, biofuels and hydrogen. The crucial link between energy and climate change will be examined. The environmental consequences of energy choices on local and global scales will be discussed and integrated throughout the course. Topics will be evaluated by applying basic scientific principles to real world problems. Policy options and understanding energy in a societal context will also be explored.
 - **“Introduction to Environmental Studies”** – This course, popular with non-science majors, is a comprehensive introduction to understanding the environment and the effects of human activities on it. Students learn to apply various concepts in the biological, physical, social sciences and humanities in order to understand the causes and consequences of environmental problems facing the world today, and what can be done to address them. Students are encouraged to explore how these concepts and issues relate to their own lives, from both global and local perspectives. By covering a wide array of environmental issues, the course appeals to the broadest range of potential student interests. By focusing on basic aspects of human life (e.g., food, energy, air, water, etc.), moreover, the course is likely to be relevant and meaningful to the general public. Rather than teaching the course from the relatively narrow view of traditional environmental science concepts and methods, this course broadens the perspective to also include the various political, economic, cultural and philosophical dimensions in which these issues are embedded in the real world. From this vantage, students are not only likely to get a better sense of the complexity of these

issues, but of the various causes and consequences that need to be addressed in order to devise solutions to them.

- **Environmental Science program** – This program has now has five times as many majors as it did in 2007. Environmental Studies is an interdisciplinary major designed to teach students to examine environmental issues from a broad range of perspectives and analytical methods. Graduates are able to apply concepts and implement the skills learned in the sciences, mathematics and humanities to real-world environmental issues and are aware of local environmental problems and efforts. The Environmental Studies department offers a robust selection of courses for a community college: Introduction to Environmental Studies (for non-major), Environmental Science and Sustainability, Environmental Field Studies, Geographic Information Systems, Organic Agriculture, Energy and the Environment, and Independent Study. It also offers two degree programs.
 - **Liberal Arts (AA) degree Environmental Studies option** - RVCC is the only NJ community college and one of only ten in the country with an Environmental Studies Liberal Arts degree program. This is an interdisciplinary major offered by the Department of Humanities, Social Sciences and Education, in cooperation with the Department of Science and Engineering, Math and English. Approximately half of the coursework consists of classes in the biological and physical sciences, to learn about the basic patterns and processes that govern the natural world, and the effects of human actions on it. The other half of classes consists of courses in the humanities and social sciences (e.g., sociology, anthropology, philosophy, history, and economics) in order to better understand the complexities of these human dimensions of contemporary environmental issues. With this broad range of tools and perspectives, students learn to analyze the human and other causes of modern environmental problems, as well as to devise strategies and solutions to address them. Students are encouraged to focus on a particular subject area of his or her interest (e.g., social sciences, humanities, communications and languages, education, fine arts, economics, etc.). Environmental Science electives include PHIL-106 Current Moral and Social Issues 3, ANTH-201 North American Indians, and GEOG-102 Introduction to Cultural Geography, and a Social Science.
 - **Environmental Science (AS) degree** - This program provides a comprehensive understanding of the functions of local and global ecosystems and examines how they are affected by human activities. Students consider scientific evidence demonstrating how human activities threaten many ecosystems, and they critically study alternatives to present practices. The Environmental Science program trains students to examine the impact of man on the environment from sociological, political and economic viewpoints. The degree requires courses in Biology, English, technological competency, Mathematics, Chemistry, Social Sciences, Geography, and Humanities as well as two Environmental Studies courses.
- **Environmental Control Technology (AAS) degree** - Instruction, practical applications in the laboratory, and a semester of cooperative work experience provide students with the background necessary to understand how residential and commercial HVAC systems and their associated environmental controls operate. Students are required to take Environmental Science’s Energy & the Environment course. They attain proficiency in Energy & Environmental Design among other skills.
- **Immersive experience** – Biology and Environmental Studies Professor Jay Kelly plans to take a small group of students, alumni and community members to visit the Atlantic Rainforest in Brazil for 12 days in early January 2016. They will study how the history of human land/resource use affects the distribution and abundance of biodiversity, as well as the general topics of restoration, protection, agriculture, and conservation. The trip will be an immersive experience in rainforest ecology and conservation, including visits to a variety of local ecosystems and opportunities for hands-on experience in field research methods in the ecology and conservation of Atlantic Rainforest fauna and flora. The trip will build on coursework students receive in the Biology and Environmental Science majors and will give them the opportunity to expand and apply what they are learning through this enriching international experience. Students and trip leaders will learn about and participate in real-world research on the biology of

various rainforest species and ongoing rainforest restoration efforts in the preserve and surrounding landscape. Significant time will be spent surveying other local ecosystems and institutions, including rubber plantations and early-successional forest on the Michelin Preserve, waterfalls, local smallholder farms in the surrounding community where cacao, coffee, bananas, cloves and other crops are grown, as well as the nearby beaches, mangroves and coastal palm and hardwood forests.

- **Honors Science seminar** – This course is taken by all Honors Science majors and consists of a weekly seminar given by a guest speaker or member of the faculty. The seminars are open to the college community and the public, so the audience usually includes many faculty members and students interested in the topic of the day. Each semester, one or two seminars focus on environmental issues. For example, Clean Ocean Action spoke about marine pollution and prevention, Senator Kip Bateman (a member of the NJ Senate Environment & Energy committee) spoke about environmental legislation and issues, State Climatologist and Rutgers Professor Anthony Broccoli spoke about climate change in NJ, and entrepreneur Mike Strizki from Hydrogen House spoke about hydrogen power.
- **Interdisciplinary study** – We not only have robust course offerings within formal environmental science classes, but also introduce curricular content into other courses. Dr. Sarah Imbriglio, for example, has students making and testing biodiesel and “biodegradable” plastics in her organic chemistry classes, and we are currently exploring the development of cross-curricular projects involving both environmental and engineering students. Courses in 14 departments touch on sustainability issues: Anthropology (North American Indians adapting to their physical environment), Biology (evolution, ecology, nutrition/organic food, botany, zoology), Business and Economics (near-transit housing, social responsibility, ethics), Chemistry (organic chemistry, honors projects are often on environmental issues), English (Composition class focusing on nature), Fitness (current health issues including those caused by pollution, general wellness and health), Geography (physical and cultural), Geology (how humans affect the landscape), Social Science (social welfare, policy, politics), Marketing (ethical/social responsibility, recycling project), Nursing (health & wellness), Philosophy (ethics, relationship of science to philosophy and human values), Sociology (contemporary social problems like climate change and urban sprawl, natural resources).
- **Campus as a living lab** – Students learn about sustainable features of campus and conduct campus sustainability studies. The Director of Facilities often speaks with Environmental Studies and Environmental Control Technology classes.
 - **Buildings** – Environmental Science students use thermal imaging cameras to evaluate building envelopes. RVCC offers tours of the new Bateman Center, which will be certified as LEED Silver. Facilities Director and LEED AP Brian O’Rourke explains the LEED program and associated building features to students.
 - **Food** - The Environmental Field Studies class had a project evaluating the cafeteria and recommending changes that would reduce waste. The class produced a list of items sold that have packaging that cannot be recycled or composted, and a list of recommendations, and this was shared with the Facilities department.
 - **Energy** - The Director of Facilities frequently leads student tours of our cogeneration plant, which has significantly reduced RVCC’s carbon footprint. An Environmental Studies student did a project on evaluating vampire energy waste in computer labs, and shared his report with MIS, which implemented energy-saving measures. Environmental Control Technology students have HVAC projects on campus.
 - **Grounds** - One student's independent study was to create a 600 square foot green roof on campus. Environmental Studies students conducted a flora and fauna inventory of campus for River Friendly Certification. The Geographic Information Systems class maps out environmental points of interest on campus. The Environmental Club and Environmental Studies classes conduct campus clean-ups twice a year.
 - **Transportation** - Electric cars and the car charging stations have been demonstrated for Environmental Studies classes.
 - **Waste** –Environmental Field Studies students manned the cafeteria trash bins to show students how to compost. RVCC purchased better compost/recycle/trash bin units based on their recommendation.



Environmental Science & Sustainability students perform campus recycling studies, have a poster session, and give their recommendations to Facilities. A Marketing class also conducts a campus recycling study.

- **Water** – Environmental Science students conduct stream assessments on (and off) campus and work in the campus rain garden (and off campus rain gardens).
- **Governance** - In his 2009 Science Seminar, an Honors Science student strongly advocated for RVCC to join the President’s Climate Commitment. RVCC investigated and found the zero emissions commitment impractical. Instead, RVCC opted to enter a broad environmental stewardship agreement with the EPA. This agreement has guided RVCC's environmental efforts since 2009.
- **Earth Week and Campus Sustainability Month** – The Environmental Club and employee-run Environmental Sustainability Committee regularly host environmental education events. They have hosted environmental film screenings; presentations about climate change, Arctic ice melt, recycling and composting, and hydrogen power; environmental fairs; efficient lighting sales; and even an electric car show.
- **Library support** – RVCC’s librarians are particularly supportive of environmental and sustainability education. They create online resource centers and hold research training sessions tailored to environmental courses, create displays of environmental books, and even provide the Environmental Club with educational materials that align with the themes of their events. For example, on Sustainable Food Day they provided books about organic agriculture and vegan cookbooks for the club to display at their table. They also created a display with a 4-foot stack of printouts to increase student awareness about waste and recycling.
- **Using the environment and sustainability to develop STEM content, knowledge, and thinking skills** – RVCC’s approach to environmental and sustainability education is very inclusive, as environmental and sustainability issues affect everyone and can be considered and influenced in many professions, not just STEM ones. Many traditionally non-STEM classes incorporate environmental concepts as instructors address sustainability, social responsibility, and innovation in their given fields. Similarly, introductory STEM courses are often taken by or targeted at non-STEM students. Under these circumstances, the content needs to be introduced in a particularly accessible way. Instructors emphasize the issues, potential consequences and solutions, as these motivate the relevant STEM education. Instructors turn to local environmental organizations, the Environmental Science faculty, the Service Learning program (see Civic Skills below), the Facilities Department, and the Library staff and resources to identify not only (1) the STEM content, knowledge and skills needed to fully understand and address the topic, but also (2) ways to engage the students to make the STEM content observable, relatable, meaningful, and actionable.

Civic Skills

- **Mission statement** – Developing civic skills is part of RVCC’s mission statement: “Raritan Valley Community College is an educational community that works to develop critical thinking, foster intellectual curiosity, promote leadership, **encourage social responsibility**, support personal growth, and **sustain engaged citizenship** within a diverse population of students and community members.” (emphasis added)
- **Service Learning program** – RVCC has an extensive service learning program, for which it has received several awards including the 2014 President’s Community Service Honor Roll with Distinction for both General Community Service and Education. Students who spend 10 hours or more on a community service project and write a reflection paper about what they learned have their service learning project included in a student leadership transcript. Many courses include service learning as part of the coursework or for extra credit. Over the years, students have addressed environmental issues through service learning projects on recycling and reuse, beach and stream clean-ups, rainforest protection, endangered plant species conservation, land and open space preservation, assembling and collecting well test kits, preparing data for well testing programs, volunteering at farms preparing the soil, planting trees, tilling and watering gardens, and clearing land for a vegetable garden to grow vegetables to donate to food banks and soup kitchens. Environmental Science classes include service learning projects maintaining rain



gardens, performing stream assessments, and cleaning up local beaches.

- **Teagle Foundation award** – RVCC has been awarded a Service Learning grant from the New York-based Teagle Foundation. The three-year grant is enabling six community colleges to work together on a national project, “Student Learning for Civic Capacity: Stimulating Moral, Ethical, and Civic Engagement for Learning that Lasts.” One component of the program is developing courses that build students’ current and future commitment to civic and moral responsibility and encourage their participation in co-curricular programs such as student government and clubs. The Teagle project has spurred the inclusion of service learning in many courses. For example, through this program in Spring 2015, 8 courses included 15 service learning projects, 10 of which were environmental or health-related. Some of these projects are described below.
- **Partnering with local non-profits** - RVCC works with non-profit partners such as Clean Ocean Action, Pinelands Preservation Alliance, NJ Water Supply Authority, Raritan Headwaters Association and other groups to involve students in real-life research and outreach activities related to plastic marine debris, ecological shoreline management, water quality and other important issues facing central New Jersey residents and environments. These partnerships are realized through classes, service learning, internships, and clubs.
- **Local forest ecology** – RVCC and New Jersey Audubon have combined forces to conduct education, research, and outreach on forest health in central New Jersey, with the support of a 3-year grant from the National Science Foundation’s SENCER-ISE Program (Science Education for New Civic Engagement and Responsibilities - Informal Science Education) granted in 2013. SENCER's primary focus is the improvement of undergraduate teaching and learning through the framework of civic engagement. The goal of SENCER-ISE is to help students and the public appreciate the value of informal science education institutions as credible and accessible and to support the exploration of science, technology, engineering, and mathematics by people of all ages and all walks of life. Preliminary results include the successful training of citizen scientists by RVCC students and NJ Audubon, research on the bird and plant communities of our local forests, and integration of these activities into RVCC classes, Audubon programs, and stewardship of public forest preserves. Students in the Environmental Field Studies class trained citizen scientists to identify and conduct surveys for invasive plant species. Student interns were hired to conduct intensive vegetation studies as part of a regional assessment of forest health. Students then take the results of their forest health research and develop management recommendations improve forest health, which they then present to local officials. They presented their findings and recommendations to Readington Township, which is building a deer enclosure and changing their hunting guidelines as a result. Students presented their preliminary results at the Native Plant Society of NJ annual conference in November 2015. There were 11 student interns on this project in 2014-15.
- **Coastal communities** – RVCC recently received a grant from NJ Sea Grant in partnership with Pinelands Preservation Alliance to conduct research and outreach in NJ coastal communities to reform beach management practices to support both habitat and storm protection. This grant will support 8 interns over the next two years.
- **Enactus Club** - Enactus is a community of student, academic and business leaders committed to using the power of entrepreneurial action to transform lives and shape a better more sustainable world. Enactus is a unique mix of entrepreneurial practice and philanthropy. Students work on sustainable projects in order to better serve people in need locally, state-wide, and even internationally.
 - **Fresh produce for the poor** - The club addressed the need for affordable fresh fruits and vegetables at food pantries. Students built a 40 plot, 22,000 square foot garden for a community partner, My Neighbor’s Pantry, which serves the homeless. Funded by Enactus members and volunteers from the community, students maintained the land with \$1,700 in donations which transformed into \$17,000 through a partnership with the Community Food Bank of NJ, an alliance that ensures a sustainable food supply to the pantry. Enactus produced 750 pounds of fresh fruits and vegetables for 400 insecure families and boosted the flow of produce to the food pantries by donating up to 50% of their produce each year.

- **Big Dan's Bike Shop** - Middle Earth, a nonprofit that has served youth in Somerset County for over 40 years, teamed up with Enactus and Marketing 101 to create Big Dan's Bike Shop. The program teaches local teens to repair bicycles and the steps involved in creating and operating a successful small business. The shop's bikes are donated by the community and then repaired and maintained by the youths. They sell the bikes for low prices at local events and fairs. Operating the business prepares the youth for the working world and gives them a positive outlet in which they can grow and prosper.
- **Environmental Club** – This club seeks to positively affect the community and to create environmental awareness and eco-friendly living by making the campus greener and through education and community projects.
 - **Fighting invasive species** – For the past few years, the Environmental Club has been over-tapping invasive Norway maple trees in Three Bridges' Forest Hill Preserve to help restore the forest (by depleting the nutrient reserves of the invasive trees and allowing for greater native tree regeneration), teach students and community members about invasive plants and traditional maple syrup production, and raise funds for RVCC student conservation internships. As part of this year's public education efforts, the students gave a demonstration to the Three Bridges Elementary School, which is located 100 yards away from the forest. More than 100 students, 20 parents, and 8 teachers participated. This integrated initiative in forest restoration-education is being conducted in partnership with the Readington Township Environmental Commission and Open Space Advisory Board. The project helped the township earn a \$10,000 grant to further develop this forest as an educational resource for the community by installing an outdoor classroom, a deer enclosure, trails, and school curricula around forest ecology and restoration which students helped create.
 - **On-campus environmental action** – The Environmental Club and Environmental Sustainability Committee regularly organize student environmental activities on campus, such as tree planting, stream bank restoration, stream and campus cleanups, and the removal of invasive Callery Pear trees.
- **Student Nurses Association** - The SNA is dedicated to improving health and well-being on campus, in the community, and beyond. They hold educational fundraisers for organizations such as No Kid Hungry, Wounded Warriors, ALS Association, and Doctors without Borders. Members attend the yearly Halloween event for Embrace Kids Foundation, assisting children diagnosed with cancer and their families with the Halloween party and pumpkin picking. They listen to the children's stories of survival, which greatly impacts and enhances the students' knowledge about living with cancer.
- **Political action** – In November 2015, RVCC submitted a Higher Education Act on Climate Pledge (working title) to the White House reduce scope 1 and scope 2 GHG emissions by 60% by 2020, along with other actions to address climate change. (The program will be announced on 11/19/15.) In 2010, we experienced a great example of local political action. On a trip to Round Mountain, the Field Botany class saw many trees marked with Xs and a sign with a number to call for more information. Prof. Jay Kelly encouraged students to call. One student did and found out that a large tree removal project was planned and would be voted on at the Hunterdon Freeholders meeting the next week. Prof. Kelly notified local environmental groups, which mobilized and drew a crowd of environmentalists and students to the meeting in protest of the project. The Freeholders voted to abandon the project. Other political actions include students and faculty attending rallies against changes to the Highlands Protection Act (Trenton), for action on climate change (New York City), and against fracking along the Delaware River (Trenton). Students have also sponsored environmental petitions and the College has registered formal support for two state bills about native plants.
- **Developing and applying civic knowledge and skills to environmental and sustainability education** – Social responsibility, engaged citizenship, and service learning are core elements of RVCC's mission and culture. Instructors and club advisors naturally incorporate civic knowledge and skills into their courses and club activities. For environmental and sustainability education, instructors and club advisors consult with local organizations, the



Facilities department, the Service Learning Program, and the Environmental Studies department to identify hands-on, real-world opportunities to advocate for and improve sustainability and the environment.

Green Career Pathways

- **Liberal Arts (AA) degree Environmental Studies option** - This program prepares students for transfer into either Bachelor of Arts or Bachelor of Science degree programs in Environmental Studies and related fields, which leads to a wide range of career opportunities in environmental policy and law, journalism, activism, business and education.
- **Environmental Science (AS)** – Graduates of this program are prepared for entry into a four-year degree program in environmental science, ecology, natural resources, and related programs, which leads to a wide range of careers in environmental testing and research, consulting, private industry and environmental agencies. Many Environmental Science graduates transfer to Rutgers School of Environmental and Biological Sciences.
- **Environmental Control Technology (AAS)** – This program prepares students to become service technicians, installers, designers, salespersons, supervisors or contractors of residential as well as commercial equipment in the air conditioning, refrigeration and heating industries. Graduates are qualified for employment with contracting, research, manufacturing, and maintenance firms or for self-employment. Graduates can also transfer to the Pennsylvania College of Technology to earn a B.S. in HVAC Applied Engineering.
- **Internships** – Given RVCC’s close relationship with local environmental organizations, many students have interned with these groups. For example, students have interned with Audubon Society (forest health), D&R Greenways (native plants), the NJ DEP Office of Natural Lands Management (rare and endangered plant surveys), and Clean Ocean Action (marine pollution along the Delaware River). (The Institute for Wildlife Studies just hired one of RVCC’s Clean Ocean Action interns to work full-time protecting Guam’s endangered Marianas Crows by removing invasive species.) Student interns in the Facilities department have worked on River Friendly certification, efficient lighting, HVAC controls, an enabling garden, and wind turbine research. Over the next two years, eight interns will work with the Pinelands Preservation Alliance on beach management and protection. NJ Audubon is hiring two RVCC interns to conduct bird surveys and perform ecological integrity analyses of coastal retention basins in NJ.
- **Non-degree Professional Programs**
 - **Environmental Control Technology certificate** – This one-year program prepares students to become entry-level technicians and/or installers of residential equipment in the air conditioning, refrigeration and heating industries. Graduates are qualified for employment with contracting and building maintenance firms or become self-employed. The Environmental Science department’s Energy & the Environment course is a course requirement.
 - **LEED Green Associate training** – This course is designed to prepare employees for the LEED Green Associate Examination. It summarizes the critical points of green design, construction, and operations. All principles included in this class are derived from the U.S Green Building Council (USGBC). The class is focused on the seven major areas of the LEED Rating System.
 - **Solar Panel Installation** - Students who complete RVCC’s Solar Panel Installation training program are prepared for an entry-level job in solar installation and are eligible to take the NABCEP PV Entry Level Exam for the solar field.
 - **Waste & Waste Water Treatment** – Students learn about the operational procedures of water and waste water treatment. The class prepares students for the T-1, W-1, C-1 and S-1 licensing test.